Adding Simple Database and Online Form Functionality to EIU Faculty Websites

An instructional design project submitted as a requirement for the CIMT-620 Instructional Design Course offered by Indiana State University.

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Adding Simple Database and Online Form Functionality to EIU Faculty Websites

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Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project Proposal
This proposal seeks to develop a course module that will instruct faculty of Eastern Illinois University (EIU) the basics of how to add database functionality to websites using HTML, PHP, and MySQL technologies.

Rational:
Over the summer of 2003 Information Technology Services added MySQL and PHP services to the Unix server known as io.cts.eiu.edu at Eastern Illinois University. MySQL is an open-source database program that allows for the collection and querying of information using the Structured Query Language. PHP is an open-source server-side scripting language that is used in conjunction with HTML and MySQL that serves as an intermediary between the database and the processed information that is posted on a webpage.

Because there are multiple programs that interoperate and because there are unique security implementations to the server known as io.cts.eiu.edu this module is in need of development to meet the customized requirements of EIU. Many tutorials exists for PHP and MySQL, however the tutorials are too dependent upon specific versions of server implementations and will not work for the existing EIU server setup. Developing one module that is designed specifically for EIU faculty will streamline the learning process for those wanting to learn this material for the first time.

Need:
Faculty and staff have requested database functionality on EIU web servers that would allow for the collection of data via the use of online forms. This functionality has previously been unavailable to EIU faculty. Faculty will be able to create online forms that collect data for a variety of research interests. Faculty may also choose to create databases that are relevant to classroom projects where information needs to be collected and shared via the world wide web.

Target Population:
The target population for this instructional module is faculty with intermediate skills with creating HTML webpages. Faculty should be comfortable with basic webpage creation and be able to manage their own website.

Probable tryout learners:
Three faculty/staff from Eastern Illinois University will be selected as tryout learners for this project. The tryout learners will be faculty who have successfully managed their own websites using EIU servers in the past. The tryout faculty will be asked to create an online form that will collect data and post the data to a MySQL database for later analysis.

Instructor Knowledge:
The instructor has successfully completed projects utilizing MySQL and PHP for administering online surveys and subsequent data analysis. The instructor also has available experts from Information Technology Services unit that may be of assistance with technical details of the server implementation if needed.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project A

Needs Assessment
Project A
Needs Assessment

CIMT 620
Tom Grissom
September 28, 2003

Adding Simple Database and Online Form Functionality to EIU Faculty Websites
(Beginner Level)

What Should Be:
College of Education and Professional Studies (CEPS) faculty at Eastern Illinois University (EIU) have requested an easier method of collecting and analyzing data via online forms using the Internet and database technologies. There are many occasions where faculty have a need to collect data for research purposes and/or as part of class projects to survey students on various aspects of a course. Having the ability to collect and store data online for later analysis and retrieval will assist faculty by eliminating double-data entry as is presently the case with paper-based or email surveys. This capability will streamline the process of data collection and make it much easier for faculty to administer their own online surveys.

Database software such as MySQL and PHP offer the ability to display data collected from the database in a regular HTML page over the Internet. This capability is often used to make dynamic webpages with information that is pulled from a database each time a webpage is accessed. By changing information in the database the content displayed on a webpage can be changed without having to edit the HTML directly. This is a more efficient and dynamic method to display changing content.

CEPS faculty should have a method to create customized online forms from their own websites that can post information collected from an online form to a database for later analysis and retrieval.

What is:
Currently the only method CEPS faculty have available to collect information online is via a cgi-script form processor that allows for data to be posted from an online form. The cgi-script sends the information via email to the requesting party each time information is submitted from a user. There is no backend database for collecting the individual submissions. While this allows for online forms to be processed, the data is sent directly to a faculty email account, it does not allow for easy interpretation of data because the data is sent every time someone hits the submit button on an online form. Each response is stored in a separate email. The result is that the faculty member must re-enter the data from each email into a spreadsheet and then analyze the data.

This current method is an extremely inefficient use of time and is so cumbersome that many faculty do not bother with collecting data via online forms because it is too labor intensive and requires double data-entry. Another problem of the current email based
form processor is that if a form field is left blank it is easy to get the data collected out of order and is often confusing for faculty to interpret.

EIU has recently added new database capabilities to existing web servers over the summer of 2003 and is now available to faculty, however there are no instructions or classes for faculty to learn how to use the newly available database tools.

**The Gaps:**
There is a large gap between what should be and what is. In the past there has not been a backend database available to CEPS faculty to collect and analyze data. With the recent addition of MySQL and PHP to the web server faculty now have the backend database tools that will allow for easier online data collection. This capability was previously not available to faculty. Because this software setup is brand new there are no instructional materials to help faculty get started.

Currently Instructional Technology staff work with individual faculty on a one-on-one basis to setup the database. This is currently limiting the number of individuals that may take advantage of the database technologies because no instructional materials exist and the IT staff are very busy with other duties and have limited availability for faculty assistance. There is a need to create this instructional material so that CEPS faculty can learn how to create their own online forms and have the information submitted from the online form to a database for later analysis and retrieval.

**Priorities for Action:**
Taken all together this is an extremely complex and technical task for the average faculty member. There are several tools that must work together to achieve the end result. An overview of the entire process will need to be developed to get the “big picture” and explain the individual components necessary to create an online form that is capable of posting information to a backend database. This may involve the creation of pictures to represent the various processes. Because of the technical jargon a glossary may also need to be developed.

This is a new project and the tools have only recently become available on the web server so there are many things to do. First, faculty need to have a method of getting a database account on the web server. Information Technology Services will need to be contacted to work out an arrangement for faculty to request new database accounts and manage userid’s and passwords.

There will need to be a review current PHP and MySQL tutorials to see if they can be adapted to this purpose. It must be noted that due to security concerns many of the features of MySQL and PHP have been disabled and many of the tutorials and books on the subject will not adapt to the unique setup of the EIU web server.

The development of the instructional material for creating a basic MySQL database will need to be developed. This will need to be approached in a step-by-step fashion. Once
the MySQL portion of the instructional material is developed a module of PHP will need to be developed. A section on using PHP-MyAdmin will need to be developed to instruct faculty on how to view information from the database once the data is collected. A section will also be needed for creating a basic PHP capable webpage.

There will need to be a great deal of thought in how to best approach each module or section and the order that it should be presented. A decision will need to be made if each section should stand alone or if a project approach should be used. A decision will also need to be made regarding the complexity of the online forms such as whether to incorporate radio buttons, pull-down menus, and text boxes. Due to the beginning nature of this project a more basic approach may be necessary and additional modules will need to be developed in the future to address more complex online forms as well as how to use the tools to analyze and retrieve the data once collected.

**Determine the Need for Instruction:**

Over the summer of 2003 MySQL and PHP were installed and made available on the server known as io.cts.cts.edu. Currently no instructional materials or classes exist to address the new software additions. There is a need to provide faculty with the skills to use the newly available tools to collect data using online forms as determined by questionnaires and interviews with CEPS faculty. Because Information Technology staff are very busy with many projects self-instructional material is needed to meet faculty needs and to lessen the burden of IT staff by eliminating the time required to assist faculty one-on-one.

The results of a questionnaire distributed to six CEPS faculty members indicate there is a need for this self-instructional material. Six questionnaires were distributed to faculty representing six different departments within CEPS. Five of the six returned questionnaires indicated faculty were interested in self-instructional materials to learn how to create online forms for data-collection use. In addition to the questionnaire interviews with individual faculty expressed a need for a better method of online data collection than currently exits on EIU web servers.

Faculty were also asked an open-ended question about what kinds of uses they had for online surveys/questionnaires. Faculty answers were quite varied indicating individual faculty members had in mind specific uses for online forms. This indicates that there is a need for this instruction and there is an intrinsic motivation to learn the new skills and apply them to individual faculty member needs.

A three previous surveys distributed in the spring of the year determined that approximately 40% of CEPS faculty have an active webpage. Information about what software faculty use was also collected and faculty also rated their individual skill level on various software. This instruction will not be for beginning users but rather those faculty who have successfully managed their own website and have expressed an interest in learning how to collect data via online forms.
Goal Statement:
College of Education and Professional Studies faculty of Eastern Illinois University with intermediate HTML skills will be able to create a basic online form as part of their website to collect data using available HTML, MySQL, and PHP technologies on the server known as io.cts.eiu.edu.

Data-collection instrument:
The data-collection instrument was designed to qualify who the audience was for this instruction and determine skill level of faculty interested in learning more about online forms. This is very important because the server setup and instructions will be specific to this audience. Other data from previous surveys will also be used to make decisions regarding this project.

The intended audience is expected to have an intermediate skill level using HTML and the questionnaire asks questions regarding existing web development skills. The nature of this topic is very technical so designing to existing skill level is very important to meet the audience needs. Questions regarding current web authoring ability, existing PC equipment, and copy and paste ability were asked to determine existing skill levels. The self-instructional materials will probably require large sections of material to be copy and pasted so I wanted to make sure this audience knew how to copy and paste.

The instruction is being designed for faculty who already have an active web page and already know the basics of creating a web page and how to upload files to the web server. Faculty that do not have intermediate skills have available face-to-face training at EIU to get them to this level.

The information collected from the questionnaire determined that there was an interest to create self-instructional materials for faculty to learn how to create online forms as part of their own website. In addition faculty listed a wide variety of uses for online forms indicating faculty will be customizing the forms for their particular interests.

Please find attached the questionnaire and the results page for this project.
Instructional Design Project Questionnaire
9/22/2003

The following questionnaire is completely voluntary and individual responses will remain anonymous. The data collected will be used for instructional design purposes as part of course requirements for the CIMT 620 Instructional Design course offered at Indiana State University for Fall 2003 semester. If you wish results of this questionnaire you may contact Tom Grissom via email at csgtg@eiu.edu to request a copy.

Are you currently an Eastern Illinois University faculty member in the College of Education and Professional Studies?
___ Yes  ___ No

Do you currently have an active EIU webpage?
___ Yes  ___ No

Are you currently using a Personal Computer with Microsoft Windows 2000 or XP?
___ Yes  ___ No
If No, what operating system are you using? ________________

Do you know how to edit, save, and upload (ftp) HTML files to the faculty web server?
___ Yes  ___ No

Have you ever had a need to collect data using an online form?
___ Yes  ___ No

Have you ever had a need to share information collected from students with the entire class?
___ Yes  ___ No

Do you know how to copy and paste text?
___ Yes  ___ No

Would you be interested in self-instructional training materials that would give you the skills necessary to create online surveys/questionnaires as part of your own website?
___ Yes  ___ No

What kinds of uses and/or projects do you foresee a need for if you could create your own online forms for data collection?
Results of the
Instructional Design Project Questionnaire
9/25/2003

Please find below the results of the data collected for Project A:

Total number of questionnaires collected = 6

Are you currently an Eastern Illinois University faculty member in the College of Education and Professional Studies?
6 – Yes 0- No

Do you currently have an active EIU webpage?
5 – Yes 1- No

Are you currently using a Personal Computer with Microsoft Windows 2000 or XP?
5 – Yes 1- No
    If No, what operating system are you using? 1- Windows 98

Do you know how to edit, save, and upload (ftp) HTML files to the faculty web server?
5 – Yes 1- No

Have you ever had a need to collect data using an online form?
5 – Yes 1- No

Have you ever had a need to share information collected from students with the entire class?
5 – Yes 1- No

Do you know how to copy and paste text?
6 – Yes 0- No

Would you be interested in self-instructional training materials that would give you the skills necessary to create online surveys/questionnaires as part of your own website?
5 – Yes 1- No

What kinds of uses and/or projects do you foresee a need for if you could create your own online forms for data collection?

Race Satisfaction, Homecoming, Compilation of websites pertaining to certain topics, general surveys, follow-up surveys, cohort surveys, none at this time, class introductions – information/experience, course evaluations, selection of curriculum topics, daily practicum reports, priority rankings of childrens novels-heros-Project WOW, students practicum hours at public schools
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Project B

Learning Environment Analysis
Project B
Learning Environment Analysis

CIMT 620
Tom Grissom
September 28, 2003

Adding Simple Database and Online Form Functionality to EIU Faculty Websites (Beginner Level)

Existing Curricula
This is a new project for Eastern Illinois University therefore there is no existing curriculum for the specific server setup of MySQL and PHP on the server known as io.cts.eiu.edu. There are however many tutorials on the Internet for general PHP and MySQL use. PHP and MySQL are open-source tools and there is a large community that develops and maintains websites dedicated to the use of these tools. These sites are for the most part very technical in nature and are not suitable for the intended audience. The existing tutorials and books will probably be of limited value to CEPS faculty in the beginning stages of learning how to use these tools because the material is not customized to their needs.

There are also many books on MySQL and PHP on the market. The books tend to be quite detailed and often contain a CD-ROM that contains examples of code. My previous experience with many of the books has been mixed. Looking at the code made by others is a good way to learn how to use MySQL and PHP, however, many times the examples of code given will not work on the EIU servers due to security restrictions implemented by Information Technology Services. The books are designed for a programming audience and are very technical by nature. While most books contain a good overview of PHP and MySQL they quickly become too technical for the intended audience. Another problem is that the books assume the user has the capability of being the administrator of the server and can change configuration settings. The intended audience does not have access to the administrative functions of this software due to security concerns.

There will be some material that can be adapted from online tutorials and books on the subject. An adaptation of the basic overview can be created that can be customized to the specific server setup at EIU.

Another challenge is to make sure the instruction is seemless and take away the complexities of the separate tools required. Most tutorials and books focus on one aspect of the subject and do not tie together all the technologies involved to take a project from start to finish.
**Users of the course/module**

There are approximately 130 faculty total in the College of Education and Professional Studies. The intended audience for this course are faculty members at Eastern Illinois University in the College of Education and Professional Studies who have successfully created and maintained a website. The target audience ranges from approximately 25 years to over 60 years in age and approximately 70 percent of faculty are female. From previous surveys approximately 40% of CEPS faculty manage their own website so it is estimated that the instructional material will serve a population of over 50 faculty members.

For the most part this group consists of Ph.D.’s and faculty members with Master Degrees that are subject matter experts but are not experts in computer programming. These adult learners are very busy with teaching, advising, research, and service duties and want instruction that does not have a lot of fluff. CEPS faculty are all successful academicians. Most CEPS faculty are not programmers and most faculty only want the basics to get them started to accomplish their goals of collecting data online. Most likely faculty will not want to become expert programmers therefore the material being developed needs to be basic and get to the point as quickly as possible. For this reason a diskette, CD-ROM, or webpage may be needed to store specific examples of code for faculty to copy and paste as part of the self-instructional materials that will be created. This will help faculty save time and faculty will not have to hand type line upon line of code.

This material may be adapted in the future to other EIU faculty and would expand the number of individuals served and possibly be offered as a face-to-face class. The purpose of this project is to concentrate only on CEPS faculty and develop paper-based self-instructional materials. There are also CEPS faculty at a beginner level that have expressed an interest to collect data online and this material may give beginners an impetus to create and manage their own website. Faculty will need to be at an intermediate level so they too can use online forms in their own websites. Once fellow faculty see what their peers are doing there may be an increased demand for faculty who see the value in having the ability to collect data online. In general faculty do not want to spend a great deal of time programming they just want to be able to collect information from the Internet by using online forms.

**Available media**

The College of Education and Professional Studies has standardized on Gateway Personal Computers for the past five years. Over 90% of faculty are currently using PC’s with Windows 2000 or Windows XP and have high-speed Internet access. The remaining 10% of PC users have either Windows 98 or NT. CD-ROMS and DVD-ROM’s are available on nearly all faculty PC’s. All PC’s have Microsoft Office, Internet Explorer, Netscape Navigator, and WS-FTP installed. Televisions with VCR’s and large screen projectors are also available in most classrooms. CEPS also has the ability to stream video and audio over the Internet using streaming servers. Faculty also have WebCT available and WebCT could also be considered as a method to deliver this coursework in the future.
Organizational/community climate
Eastern Illinois University has four colleges, a graduate school, and a school of continuing education. Each of the colleges has an assigned an Instructional Support Specialist to assist faculty with integrating technology into the courses they teach. Two years ago EIU established the Center for Academic Technology Support (CATS) as a centralized organization to help faculty with technology related projects and initiatives. The Instructional Support Specialists work with CATS and offer routine face-to-face training on common applications available to EIU faculty in addition to working one-on-one with faculty.

Information Technology Services (ITS) is the centralized IT department on campus that manages networking and servers on campus. ITS is responsible for the unix servers that host the web server, MySQL, and PHP software that this project will be utilizing.

The College of Education and Professional Studies consists of nine departments and approximately 130 faculty. The College of Education and Professional Studies serves over 4000 undergraduate and graduate students. Eastern Illinois University is the second largest producer of teachers in the State of Illinois.

The following quote is from the CEPS Homepage, “The College of Education & Professional Studies has a proud history of providing students with positive educational opportunities. National accreditation of all programs is one of many evidences of the high quality of programs offered to students. An exceptional faculty is dedicated to working closely with students as they prepare themselves to become tomorrow's leaders throughout Illinois and beyond. We are proud of the quality of our programs, our faculty and staff, and most of all our graduates.”

In surveys conducted in the spring of 2003 faculty indicated the biggest barrier to using technology to its fullest potential was having enough time available to learn more. Faculty also indicated some problems with attending face-to-face instruction that is offered periodically.

CEPS has a technology committee that has representation from each department and helps establish technology training needs and professional development needs. It has been determined that faculty need a better way to collect data online. CEPS faculty members are very busy and therefore time is precious when learning new skills and needs to be implemented as efficiently as possible.
Data-collection Instrument
I used information collected from the questionnaire for Project A to determine what type of operating system faculty were using as well as to determine some basic skill levels. Most of the other data necessary for this project was readily available from previous surveys, questionnaires, and individual interviews with CEPS faculty. I have served as the Instructional Support Specialists for CEPS for the past four years and work closely with department chairs and faculty on all of their technology-related needs.

A separate data-collection instrument was not needed for Project B because a significant amount of information was available from other sources. Each year CEPS conducts a Faculty Technology Use survey in the spring of the year. Information about faculty were also obtained through records that the Dean’s office keeps. CEPS purchasing of hardware is centralized and the Instructional Support Specialist assists departments with hardware and software purchasing decisions. Because of this and my familiarity with the target audience it was not deemed necessary to construct a separate survey. You may visit http://www.eiu.edu/ceps/tech for CEPS faculty survey results about the general state of technology use within CEPS over the past four years.
Results of the
Instructional Design Project Questionnaire
9/25/2003

Please find below the results of the data collected for Project A:

Total number of questionnaires collected = 6

Are you currently an Eastern Illinois University faculty member in the College of Education and Professional Studies?
6 – Yes  0- No

Do you currently have an active EIU webpage?
5 – Yes  1- No

Are you currently using a Personal Computer with Microsoft Windows 2000 or XP?
5 – Yes  1- No
   If No, what operating system are you using?  1- Windows 98

Do you know how to edit, save, and upload (ftp) HTML files to the faculty web server?
5 – Yes  1- No

Have you ever had a need to collect data using an online form?
5 – Yes  1- No

Have you ever had a need to share information collected from students with the entire class?
5 – Yes  1- No

Do you know how to copy and paste text?
6 – Yes  0- No

Would you be interested in self-instructional training materials that would give you the skills necessary to create online surveys/questionnaires as part of your own website?
5 – Yes  1- No

What kinds of uses and/or projects do you foresee a need for if you could create your own online forms for data collection?

Race Satisfaction, Homecoming, Compilation of websites pertaining to certain topics, general surveys, follow-up surveys, cohort surveys, none at this time, class introductions –information/experience, course evaluations, selection of curriculum topics, daily practicum reports, priority rankings of childrens novels-heros-Project WOW, students practicum hours at public schools
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project C

Learner Analysis
Project C

CIMT 620
Tom Grissom
October 5, 2003

Adding Simple Database and Online Form Functionality to EIU Faculty Websites (Beginner Level)

Cognitive Characteristics:
The target audience is a faculty member in the College of Education and Professional Studies at Eastern Illinois University who have Ph.D.’s and Master Degrees in specialized fields and, in general, are of above average intelligence and have successfully managed their own website. This audience has completed many years of schooling and all are successful former students, about half have doctoral degrees, the remainder have master degrees. Their verbal and quantitative skills are above average having met the admission and completion requirements for graduate and doctoral programs. The potential learners are instructors with considerable knowledge about teaching and learning.

In general, the learners are in their formal operational stage of reasoning in cognitive development and possess strong analytical traits. Most have mastered abstract symbol manipulation and are successful and avid readers. The learners are not computer programmers but all are quick to pickup on new material that is delivered in a sequential and logical way.

In general, from past training experience, the group appreciates seeing the big picture (field dependent) before learning a new technology to see if the end results will be beneficial to them and therefore worth investing their time to learn.

Prior Knowledge and Skills of the topic:
The intended audience is interested in applying new technologies into their teaching repertoire and have successfully managed their own website. The group is expected to have intermediate HTML skills. All intended learners have an intermediate to advance skills with word processing programs. The learners have successfully managed their own website and nearly all know how to transfer HTML files to the web server using the WS-FTP program. Many of the intended learners have taken workshops on web page development that are routinely offered at EIU. The learners are familiar with completing online forms and all have submitted surveys by completing online forms and are familiar with the process as a submitee. All have taken statistics classes and are familiar with the concept of databases and spreadsheets and have analyzed data as part of their former studies in higher education.
**Physiological Characteristics:**
All of the intended learners are adults. Ages range from the mid-twenties through the sixties. In general, all are in good health and have no disabilities that would inhibit their ability to master the material being considered. The group of learners are from both sexes, the majority are female, with approximately 70 percent of the group being female. The only physiological characteristic that may be an issue is the creation of material with color, this could limit the effectiveness of the material for a color-blind person. (approximately 8% of males and less than 1% of females are color-blind).

**Affective Characteristics:**
This group has the typical concerns of adult learners. The group is very busy and time constraints upon them need to be respected. Adult learners typically want to “get to the point” immediately and have the instruction be relevant to their needs. The group as a wide variety of experiences and are in general good problem solvers. The learners are self-selective in their interest in this course module and have an intrinsic motivation to learn the material. The hope is that as a result of the instruction the learners will be able to save time in the future by being able to eliminate double-data entry as is currently the case when they collect survey information. The group being educators are also motivated to do the best job that they can when teaching courses and have a very positive attitude when it comes to learning.

The learners do not consider themselves computer programmers and have no desire to be computer programmers. There will be a subset of this population that still has some trepidation about technology and are a bit unsure of themselves when it comes to using technology. Providing self-instructional materials with the backup support is an option. The entire group of learners have available one-on-one assistance from an Instructional Support Specialists. Face-to-face help is available, if needed, but time restraints limit the current level of support and thus the need for self-instructional materials.

The group overall is very responsible and has a strong self-concept and many are leaders in their field. The learners are very good at academics as is evident by their advanced degrees. The learners typically believe that technology can have positive learning outcomes and have invested time in learning new technologies to help them teach better.

**Social Characteristics:**
The learners are part of a close-knit faculty that is organized by departments. Within each department there is much collegiality but there is little time for inter-departmental interaction. About the only time faculty have available to discuss matters with others outside their department is at workshops, conferences, and committee work. The group tends to be independent of each other although they routinely work on group activities and committees together. The learners are dedicated to scholarly work involving teaching, research, and service duties. The majority of learners are full-time faculty and have strong interpersonal skills. Minorities are represented within the group but less than 10% of the faculty are considered minorities. Role models for this group are generally highly educated scholars and socially active personalities.
**Processing Style of Instruction for the learner:**
This population is similar to the general public with a mixture of visual, auditory, and kinesthetic learning styles. An auditory learning component will not be considered for this self-instructional material due to limitations of this being a paper-based project. The learners are quite comfortable in a text-only environment however, the learners will benefit from visual aides where appropriate. The group will benefit from seeing successful examples of the technologies being learned deployed in real-life situations.

The learners being adults are goal oriented and have successfully completed projects where instructions were given to produce a given outcome. The learners are all avid readers and successfully and routinely process information and produce material relevant to an ends. The material being presented lends itself to the information processing model of input and output. The means to the ends are the individual steps that will need to be determined for each sub-process required to make a successful project outcome.

**Design Implications:**
- Adults generally require a “need to know” before they will invest time into learning something new. An effort needs to be made to find some commonality that will be equally applicable for the intended audience. The examples chosen need to be relevant and demonstrate the possibilities online forms offer faculty in the future uses.
- Due to the technical nature of this topic the learner will be required to process a great deal of complex information. This project taken as a whole will quickly overwhelm the average faculty member so the processing style of instruction should be paced with relevant examples that explain the individual components of the process over time. This information should be “chunked” into units that are manageable for the learner to assimilate.
- Getting the “big picture” overview may require the development of visuals that can explain material in a graphical format instead of just using text. The final product should be attractive and professionally done in order to be accepted by this group.
- The learners are familiar with teaching strategies and some effort should be made to emphasize good teaching practice as this project unfolds.
- The group, in general, are socially aware, although adding a social component cannot be done with paper-based self-instructional material there can be a social component added via the project outcome. Something that faculty and students can both utilize in class to increase communication such as a webliography that can be used for all classes no matter what discipline.
- The learners are expected to be at an intermediate skill level regarding web page creation and have the ability to edit and upload a web page. Face-to-face instruction and one-on-one support are available through a centralized training program at EIU to get learners to this level. Screenshots of the standard programs used should be given to help faculty learn the material in a step-by-step approach and refresh the memory of faculty. This will give visual reinforcement rather than
just word on a page to help faculty learn better by using visual and textual material.

- The learners are very busy and finding time to learn new skills is difficult to find. The self-instructional material will help with part of this problem making available this training on the faculty members time table and not having to attend a class at a certain hour of the day. The material should be straight forward, to the point and relevant.

- The learners are problem centered and goal oriented; the instruction should be clear and concise and seek to solve a relevant problem. The learners are intrinsically motivated and ready to find a better way to collect and analyze information via online forms.

- Learners that are unsure of themselves need to develop confidence in their abilities and the projects step-by-step approach should satisfy the need of certain learners to be guided throughout the project.

- The learners come from a wide variety of experiences. The instruction should seek to find relevant examples that will be applicable to all faculty members.

- The learners may be unfamiliar with technical vocabulary so a glossary may be helpful to identify and define terms.

**Data-Collection Instrument:**
Not Applicable. The instructional designer, Tom Grissom, has over four years of experience with the target audience and through the combination of previous surveys, interviews, and general experience with this group a data-collection instrument was not warranted.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project D

Learning Task Analysis
Adding Simple Database and Online Form Functionality to EIU Faculty Websites (Beginner Level)

Goal Statement:
College of Education and Professional Studies faculty of Eastern Illinois University with intermediate HTML skills will be able to create a basic online form as part of their website to collect data using available HTML, MySQL, and PHP technologies on the server known as io.cts.eiu.edu.

Revised Goal Statement for Unit 1:
College of Education and Professional Studies faculty of Eastern Illinois University with intermediate HTML skills will be able to create a MySQL database that will serve as a repository for data to be collected via an online form using available HTML, MySQL, and PHP technologies on the server known as io.cts.eiu.edu.

Problem Solving Domain:
The above goal involves faculty to solve the problem of how to create their own online forms for data-collection based upon the needs of a particular survey. This requires problem solving skills to determine the number and types of database fields required to store the data. The learners will be learning many new skills and then have to apply those skills to a given problem. The learners will have to assess the problem situation and determine what steps are necessary to complete the project.

Note:
This is a multi-part lesson, for Project D I have broken the Information Processing and Prerequisite Analysis sections down for Unit 1 only.
Lesson 1
Getting Started

Start

- Obtain HTML and MySQL Account
- Users and Passwords from Client Services

Overview and Introduction to Adding Database Functionality to Faculty Websites

"The Big Picture"

Overview Introduction to MySQL and PHP MyAdmin

Create MySQL Database Example

Create a Blank HTML webpage

Add online form elements and Submit Button to webpage

Create PHP code into HTML Webpages

Upload webpage to server

Create URL of uploaded webpage and enter data for online form and submit data

Create PHP MyAdmin and Browse databases for newly submitted data

End of this unit

Problem Solving Domain

Project B
Information Processing Analysis
Adding Simple Database and Online Form Functionality to EIU Faculty Websites (Beginner Level)
Project D
Prerequisite Analysis
Adding Simple Database Functionality to EIU Faculty Websites With Online Forms (Beginner Level)

Unit 1
Getting Started - Creating a Database

Acquire HTML and MySQL Account Userids and Passwords from Client Services

Explain and describe necessary components for gathering data via an online form

Describe the basic structure of a simple database and identify/classify fields by type

Start Unit 1

Procedure for obtaining HTML and MySQL accounts from Client Services

Introduce need for HTML and MySQL accounts as a requirement to continue this unit

Section 1

Ability to use browser and complete online forms

Web Page Creation

Tell difference

Basic database terminology and concepts

Basic spreadsheet skills

Create a MySQL Database using the PHPMyAdmin GUI

End Unit 1

Export data to MS Excel spreadsheet file using PHPMyAdmin

Delete data in database using PHPMyAdmin

Edit data in database using PHPMyAdmin

Browse data in database using PHP MyAdmin

Insert data into database using PHPMyAdmin

Create new fields with appropriate field type and length using PHPMyAdmin

Determine number of fields required and the appropriate field type and length for the problem

Create a new database table using PHPMyAdmin

Introduce and explain function of PHPMyAdmin

Describe the function of each of the components necessary to process an online form

Review basic database terminology & concepts: Table Field Field Type Record

Identify Field Types

Description of field types and uses for each type for this unit

Classify date
Classify tinyint
Classify varchar
Classify char

Identify Field Types

Introduction to the four components necessary to process an online form

Describe the basic structure of a simple database and identify/classify fields by type

Acquire HTML and MySQL Account
Userids and Passwords from Client Services

Problem Solving
Domain

Project D - rev.
Tom Grissom
CIMT 620
October 12, 2003
Lesson 1
Getting Started

Start

Obtain HTML and MySQL Account Userids and Passwords from Client Services

Overview and Introduction to Adding Database Functionality to Faculty Websites “The Big Picture”

Overview Introduction to MySQL and PHP MyAdmin

Create MySQL Database Example

Overview and Introduction to PHP

Create a Blank HTML Webpage

Add online form elements and Submit Button to webpage

Create PHP code into HTML Webpages

Upload webpage to server

Goto PHP MyAdmin and Browse database for newly submitted data

Goto URL of uploaded webpage and enter data for online form and submit data

Create PHP Page to Display Data

End of this unit
Unit 1
Getting Started - Creating a Database
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project E

Performance Objectives
Adding Simple Database and Online Form Functionality to EIU Faculty Websites (Beginner Level)

Overall Goal Statement:
College of Education and Professional Studies faculty of Eastern Illinois University with intermediate HTML skills will be able to create a basic online form as part of their website to collect data using available HTML, MySQL, and PHP technologies on the server known as io.cts.eiu.edu.

Revised Goal Statement for Unit 1:
College of Education and Professional Studies faculty of Eastern Illinois University with intermediate HTML skills will be able to create a MySQL database that will serve as a repository for data collected via an online form using available HTML, MySQL, and PHP technologies on the server known as io.cts.eiu.edu.

Terminal Objectives:
1. The learner will be able to successfully acquire both HTML (web) and MySQL (database) accounts from Client Services using the proper procedures for obtaining new computer accounts at EIU.
2. The learner will be able to list and describe the four components necessary to process online forms so that information submitted from online forms can be stored in an online database with 100% accuracy.
3. The learner will be able to describe the basic structure of a database and identify/classify database fields by proper type given examples of online forms with 100% accuracy.
4. The learner will be able to use the PHPMyAdmin program to successfully create a new database to store information with proper field types and lengths when given examples of simple online forms with 100% accuracy.

Subordinate Objectives:
1.1 The learner will be able to state the need for both HTML and MySQL accounts on the server known as io.cts.eiu.edu in order to process an online form with 100% accuracy.
1.2 The learner will be able to contact Client Services and successfully request and receive a MySQL account, if the learner does not already have an HTML account on io.cts.eiu.edu the learner will be able to complete an online form...
and successfully submit a request and receive a HTML account on the server known as io.cts.eiu.edu.

2.1 The learner will be able to list the four components necessary to process an online form with 100% accuracy.

2.2 The learner will be able to describe and explain the function of each of the four required components necessary to process an online form with 100% accuracy.

2.2.1 The learner will be able to explain the function of the web server, what the web server does, and why the web server is necessary to process an online form with 100% accuracy.

2.2.2 The learner will be able to explain the function of HTML, what HTML does, and why HTML is necessary to process an online form with 100% accuracy.

2.2.3 The learner will be able to explain the function of the MySQL database program, what the MySQL database program does, and why the MySQL database program is necessary to process an online form with 100% accuracy.

2.2.4 The learner will be able to explain what the PHP Scripting Language does and why the PHP Scripting Language is necessary for online forms processing with 100% accuracy.

3.1 The learner will be able to describe the basic structure of a database and identify the components of a database including tables, fields, field type, and records with 100% accuracy.

3.2 The learner will be able to list and define the basic field types of char, varchar, tinyint, and date with 100% accuracy.

3.3 The learner will be able to properly identify database fields required to store data from an online form given samples of online forms with 100% accuracy.

3.3.1 The learner will be able to classify an example of the char field type given a sample online form with 100% accuracy.

3.3.2 The learner will be able to classify an example of the varchar field type given a sample online form with 100% accuracy.

3.3.3 The learner will be able to classify an example of the tinyint field type given a sample online form with 100% accuracy.

3.3.4 The learner will be able to classify an example of the date field type given a sample online form with 100% accuracy.
4.1 The learner will be able to describe what function the PHPMyAdmin Graphical User Interface (GUI) serves and why it is the preferred method of interacting with the MySQL database server with 100% accuracy.

4.2 Given a MySQL account and an example online form the learner will be able to successfully create a new database table using the PHPMyAdmin program.

4.3 Given an example of an online form, the learner will be able to determine the number of fields required and identify/classify appropriate field type and length for each of the fields that will be necessary to store information into the online database with 100% accuracy.

4.4 Given a MySQL account and the example online form listed above the learner will be able to use the PHPMyAdmin GUI interface to successfully create the appropriate database fields of proper type and length identified in objective 4.3 that will be used to store information processed from the online form.

4.5 Given a MySQL account the learner will be able to successfully add records to the database table using PHPMyAdmin.

4.6 Given a MySQL account the learner will be able to successfully browse the data in the database using PHPMyAdmin Browse feature.

4.7 Given a MySQL account the learner will be able to successfully edit records in the database table using PHPMyAdmin.

4.8 Given a MySQL account the learner will be able to successfully delete unwanted records in the database table using PHPMyAdmin.

4.9 Given a MySQL account the learner will be able to successfully export the data in the online database to an excel spreadsheet format using PHPMyAdmin export feature and save the exported file on the hard drive.

Note: Most of the subordinate goals for terminal objective #4 are performance driven and based upon procedures. For subordinate objectives 4.2, 4.4, 4.5, 4.6, 4.7, 4.8, and 4.9 the word successfully is used to measure the outcome, either the learner does or does not know how to successfully complete the objective and is performance driven.

The purpose of this instruction is to give the skills necessary to create an online database that will meet the needs for collecting data from an online form example. This requires a problem solving approach for the learner to work backward from the finished form. The learner will need to know what information needs to be collected so that the learner can create a database that stores the appropriate information. The learner will need to problem solve the particular field types necessary before the learner can create the field.

The ultimate goal of the instruction for Unit 1 will be to combine the knowledge gained from each section and apply it to a new situation that will be applicable to the learner. The learner should be able to transfer the knowledge and skills gained from this instruction to a new situation. The learner will have the knowledge and skills necessary to develop their own online database that will be able to store data from an online form submission.
Project F

Assessment Instrument
Entry Skills Assessment
Testing Below the Line of Prerequisite Analysis

1. Information in a database can be ________?
   a. viewed only
   b. viewed and changed
   c. viewed, changed, and printed

2. Have you ever used an online form to submit data using the Internet?
   a. yes
   b. no

3. Do you know how to open a file in Microsoft Excel?
   a. Yes
   b. No

4. Do you know how to tell the difference between a character and a number field in a database?
   a. Yes
   b. No

5. Do you currently have and manage your own webpage?
   a. Yes
   b. No

6. In your own words explain the difference between a database table, a database field, and a database record.

7. Databases can contain fields that can be of different types:   ___ True   ___False

8. Have you ever used an online database to do research at the Library?
   a. Yes
   b. No
Adding Simple Database and Online Form Functionality to EIU Faculty Websites
(Beginner Level)

TO - Terminal Objective
SO - Subordinate Objective

Pre –Test
Learners will need a computer with Internet access and a MySQL account.
Please answer the following:

What organization on campus would you go to get a HTML and MySQL database
account? (TO 1, SO 1.1)

____________________________

List and describe the four components necessary to process an online form: (TO 2, SO
2.1)

__________________________________________________
__________________________________________________
___________________________________________________
___________________________________________________

This is a performance test that requires the use of the computer with Internet access.
Below is an example of a paper-based form that we would like to put into an online
format. You have been provided with the necessary MySQL account to create the
database structure required to store the information requested from the example form
below. You are to create a database with the appropriate fields of proper type and length
(TO 3, SO 3.2, 3.3, 3.3.1, 3.3.2, 3.3.3, 3.3.4) that will store the data that will be processed
via an online form and stored into an online database. (TO 4, SO 4.1, 4.2, 4.3, 4.4) This
exercise should take approximately 20 minutes to complete.

******************************************************************************
1. Date Completed: (YYYY-MM-DD): _______________

2. Last Name: ______________________

3. First Name: ______________________

4. What state do you live in (two letter abbreviation)? __

5. Number of years employed in your current job (whole number): __

6. What do you like most about your current job? ______________________________
   _______________________________________________________________________

7. What do you like least about your current job? ______________________________
   _______________________________________________________________________

******************************************************************************
Now that you have created the database please follow the instructions below to add some data to the database.

Please add THREE records to the database with the data listed below from three example forms: (data to be entered is in **bold text**): (SO 4.5)

**Record #1**
1. Date Completed: (YYYY-MM-DD): **2003-10-15**
2. Last Name: **Grissom**
3. First Name: **Tom**
4. What state do you live in (two letter abbreviation)? **IL**
5. Number of years employed in your current job (whole number): **7**
6. What do you like most about your current job? **I like the variety if work.**
7. What do you like least about your current job? **I do not like the long hours.**

**Record #2**
1. Date Completed: (YYYY-MM-DD): **2003-10-14**
2. Last Name: **Mouse**
3. First Name: **Mickey**
4. What state do you live in (two letter abbreviation)? **FL**
5. Number of years employed in your current job (whole number): **67**
6. What do you like most about your current job? **I like the working with children.**
7. What do you like least about your current job? **I do not like the heavy lifting required of this position.**

**Record #3**
1. Date Completed: (YYYY-MM-DD): **2003-10-20**
2. Last Name: **Jones**
3. First Name: **Charlie**
4. What state do you live in (two letter abbreviation)? **IN**
5. Number of years employed in your current job (whole number): **18**
6. What do you like most about your current job? **I like the pay.**
7. What do you like least about your current job? **I do not like working weekends.**

Edit record #1 and change the first name from Tom to **Donald** and the last name from Grissom to **Duck**. Change the State field from IL to **CA**, change number of years employed from 7 to **55**. (SO 4.7)

Delete the Charlie Jones Record. (SO 4.8)

Export the data in MS Excel CSV format to a file on the hard drive called: c:\jobs.csv (SO 4.9)
What field type did you select for question #6 of the example form? (TO 3)
   a) tinyint
   b) char
   c) varchar
   d) date

What field length did you select for question #4 of the example form? (SO 4.3)
   e) 80
   f) 50
   g) 2
   h) 8

Note:
Because this is a performance test the learner will demonstrate their competence by completing the database as instructed. Subordinate Objectives 4.1 through 4.9 will be measured by the ability of the learner to create the database with proper field types and lengths. The exported file will contain two records one record will have the name Donald Duck, the other Mickey Mouse. Grading of the pre-test / post-test will be done by looking at the database structure and the exported file. By using the user account provided to the learner and the PHP MyAdmin program the instructor will check the database structure and the knowledge and skills will be assessed by the actual performance of the above test items.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites
(Beginner Level)

TO - Terminal Objective
SO - Subordinate Objective

Post –Test
Learners will need a computer with Internet access and a MySQL account. Please answer the following:

What organization on campus would you go to get a HTML and MySQL database account? (TO 1, SO 1.1)

____________________________

List and describe the four components necessary to process an online form: (TO 2, SO 2.1)

__________________________________________________
__________________________________________________
__________________________________________________
__________________________________________________

This is a performance test that requires the use of the computer with Internet access. Below is an example of a paper-based form that we would like to put into an online format. You have been provided with the necessary MySQL account to create the database structure required to store the information requested from the example form below. You are to create a database with the appropriate fields of proper type and length (TO 3, SO 3.2, 3.3, 3.3.1, 3.3.2, 3.3.3, 3.3.4) that will store the data that will be processed via an online form and stored into an online database. (TO 4, SO 4.1, 4.2, 4.3, 4.4) This exercise should take approximately 20 minutes to complete.

1. Date Completed: (YYYY-MM-DD): _______________
2. Last Name: ______________________
3. First Name: ______________________
4. What state do you live in (two letter abbreviation)? __
5. Number of years employed in your current job (whole number): __
6. What do you like most about your current job? ______________________________
   _______________________________________________________________________
7. What do you like least about your current job? ______________________________
   _______________________________________________________________________
Now that you have created the database please follow the instructions below to add some data to the database.

Please add THREE records to the database with the data listed below from three example forms: (data to be entered is in **bold text**): (SO 4.5)

**Record #1**
1. Date Completed: (YYYY-MM-DD): **2003-10-15**
2. Last Name: **Grissom**
3. First Name: **Tom**
4. What state do you live in (two letter abbreviation)? **IL**
5. Number of years employed in your current job (whole number): **7**
6. What do you like most about your current job? **I like the variety if work.**
7. What do you like least about your current job? **I do not like the long hours.**

**Record #2**
1. Date Completed: (YYYY-MM-DD): **2003-10-14**
2. Last Name: **Mouse**
3. First Name: **Mickey**
4. What state do you live in (two letter abbreviation)? **FL**
5. Number of years employed in your current job (whole number): **67**
6. What do you like most about your current job? **I like the working with children.**
7. What do you like least about your current job? **I do not like the heavy lifting required of this position.**

**Record #3**
1. Date Completed: (YYYY-MM-DD): **2003-10-20**
2. Last Name: **Jones**
3. First Name: **Charlie**
4. What state do you live in (two letter abbreviation)? **IN**
5. Number of years employed in your current job (whole number): **18**
6. What do you like most about your current job? **I like the pay.**
7. What do you like least about your current job? **I do not like working weekends.**

Edit record #1 and change the first name from Tom to **Donald** and the last name from Grissom to **Duck**. Change the State field from IL to **CA**, change number of years employed from 7 to **55**. (SO 4.7)

Delete the Charlie Jones Record. (SO 4.8)

Export the data in MS Excel CSV format to a file on the hard drive called: **c:\jobs.csv** (SO 4.9)
What field type did you select for question #6 of the example form? (TO 3)
a) tinyint
b) char
c) varchar
d) date

What field length did you select for question #4 of the example form? (SO 4.3)
a) 80
b) 50
c) 2
d) 8

Note:
Because this is a performance test the learner will demonstrate their competence by completing the database as instructed. Subordinate Objectives 4.1 through 4.9 will be measured by the ability of the learner to create the database with proper field types and lengths. The exported file will contain two records one record will have the name Donald Duck, the other Mickey Mouse. Grading of the pre-test / post-test will be done by looking at the database structure and the exported file. By using the user account provided to the learner and the PHP MyAdmin program the instructor will check the database structure and the knowledge and skills will be assessed by the actual performance of the above test items.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project G

Instructional Strategy
Adding Simple Database and Online Form Functionality to EIU Faculty Websites (Beginner Level) – Unit 1

Overall Goal Statement for Units 1, 2, and 3:
College of Education and Professional Studies faculty of Eastern Illinois University with intermediate HTML skills will be able to create a basic online form as part of their website to collect data using available HTML, MySQL, and PHP technologies on the server known as io.cts.eiu.edu.

Revised Goal Statement for Unit 1:
College of Education and Professional Studies faculty of Eastern Illinois University with intermediate HTML skills will be able to create a MySQL database that will serve as a repository for data to be collected via an online form using available HTML, MySQL, and PHP technologies on the server known as io.cts.eiu.edu.

Unit 1 will be designed as a paper-based self-instructional unit that will require the use of a computer, Internet connection, HTML and MySQL accounts on the EIU server-io.cts.eiu.edu, available to all College of Education and Professional Studies faculty at Eastern Illinois University. An expository approach will be used to guide the learner through the process of obtaining the proper accounts through the actual creation of an online database. The expository approach is deemed necessary due to the paper-based delivery of instruction and the procedural nature of this unit. Unit 1 will be broken down into four sections as indicated for the prerequisite analysis of Project D.

Lesson Organization Plan
Note to Dr. Lai: This lesson will need to establish the greater lesson plan for three units of instruction. This complicates the design for this project but I am learning much more by struggling with these issues. For this project I am only considering Unit 1 but I will need to establish an overview of all three units that the learner will be completing. I have provided an overview introduction to the lesson that will include information about Unit 1, Unit 2, and Unit 3. This affects the design of the material and it will be included in the instructional materials with Unit 1 so I can set the stage for Unit 2 and Unit 3 that will be developed at a later date.

The material as a whole is technically complex and falls into the problem solving domain. Chunking of material will be used to simplify the presentation of material to the learner. A unit and section approach will be used throughout the instruction because learners are familiar with this method of chunking. Real world examples will be used to keep the learners attention and provide a tangible product that the learners can use upon completion of this instruction.
Overview of Unit 1, 2, and 3
I am including an overview section for this instruction to set the stage for the complete package of Units 1, 2, and 3. This is necessary because of the multi-unit format that will be the ultimate result of this instructional material.

Overview of Unit 1, 2, and 3
Overview - Introduction
Gain attention to lesson.
The learners for the intended units are self-motivated adult learners and will voluntarily participate and are intrinsically motivated. Congratulate the learner on accepting the challenge of learning this material. Give example(s) of the usefulness of knowing how to create online forms. The learners are interested in learning this material because it can help them with their professional duties as faculty members. The unit will be developed to give a real world example that will be of common value to all learners - how to create an online webliography (Section 4, TO 4), this is something that will be equally interesting to all faculty regardless of discipline. This gives faculty the motivation to become focused on the lesson from the beginning and know that there will be a “pay-off” at the end of all three units, this will also provide the learners with a product that they can use for their teaching and research duties. The example of the webliography will be continued through Units 2 and 3 so that once the instruction is completed the learner will have a working example of an online form that can capture webliography information from students submitting website reviews and can be used in the classes they teach.

Inform the learner of instructional purpose.
The goal statement for all three units will be given at the beginning of the lesson to inform the learner of what they are about to learn so that the learner knows what to expect from this instruction. Provide a disclaimer that this material requires the use of the learners own HTML and MySQL accounts as described in Unit 1 – Section 1. The reason we are using the learners account is because we want the learners to use real world applications so that once they complete the instruction they will have their very own online form working example. State the prerequisite knowledge and skill requirements for this instruction.

Overview of Unit 1, 2, and 3
Overview - Body
An explanation will be given that Unit 1 consists of 4 sections and that there are two additional units required to put all the necessary pieces together so that a faculty member can create their own online form for the collection of data. Unit 1 focuses on how to create a database that will hold information that will be collected from an online form. Unit 2 will focus on adding PHP to a HTML webpage and how to submit data to a database from an online form. Unit 3 will focus on how to display data from a database to a webpage once the data has been collected.
Project G focuses only on Unit 1, but because this is a multi-level project with the intention of being used in the real world the overview for Project G will include a small amount of information about Unit 2 and Unit 3 so that the learner is aware that there will be three units to complete the instructional material.

**Overview of Unit 1, 2, and 3**

**Overview - Conclusion**

Remotivation and closure.

Remind the learner that there are many applications for knowing how to collect data in a database using online forms. Give a couple of examples, help desk requests and collecting mailing addresses. Explain that any type of information the learner is currently using paper-based forms for can be adapted to an online form. The benefit of having an online database is that the information will be in electronic format that is easily accessible, easily analyzed, and can be shared with others using database and Internet technologies. Congratulate the learner on taking the first steps to learning this new material. Now let’s begin Unit 1!

**Unit 1 - Section 1**

**Introduction**

Gain attention to lesson.

Explain that at the end of Unit 1 the learner will have the knowledge and skills to create a MySQL database. Provide the goal statement for Unit 1. This establishes the purpose and provides motivation. With this knowledge the learner will be able to adapt skills learned to their own needs. (transfer)

Inform the learner of instructional purpose.

A statement at the beginning of Section 1 will be given that the learner will be required to have the following to complete the instruction for Unit 1: computer with Internet access, HTML and MySQL account on io.cts.eiu.edu

Section 1 will give instructions for obtaining the computer accounts if the learner does not already have them. The learner will be informed that they will **NOT** be able to complete the instruction for Unit 1 without obtaining the proper computer accounts describe in this section. Explain that this instruction is designed with a hands-on approach that will require the use of the computer, Internet access, and HTML and MySQL accounts. It is imperative that the learners apply for the HTML and MySQL accounts before they can begin Section 4 of Unit 1. Inform the learner that it usually takes 1 to 2 days turnaround time for Client Services to create new computer accounts and the learner should plan accordingly. The learner should apply for the HTML and MySQL accounts and can continue with Section 2 and 3 but will need the accounts before they can begin Section 4 of Unit 1.
Unit 1 - Section 1 Body
Stimulate recall of prior knowledge.
Inform the learner that they have previously received HTML and email accounts from Client Services and that the process is similar for obtaining a MySQL account.

Present information and examples.
Explain to the learner the need for HTML and MySQL accounts to process online forms. SO 1.1 Instructions will be given to the learner on the procedure for obtaining a MySQL account and a HTML account, if the learner does not already have one on the server io.cts.eiu.edu (some may already have an HTML account on this server). Screenshots may possibly be used as examples throughout this procedure. Explain to the learner that the HTML account and the MySQL account must to be located on the same server (io.cts.eiu.edu) and that only io.cts.eiu.edu has the necessary software loaded to process online forms. SO 1.2

Unit 1 - Section 1 Conclusion
Provide remotivation and closure.
Emphasize to the learner the requirement of a MySQL account for the upcoming Section 4 material. SO 1.1 Praise the learner for taking the first steps necessary for the learner to be able to create their very own online database that can store information collected from online forms! Remind the learner they will be receiving the new account(s) in a couple of days after they request them. SO 1.2, TO 1 Use a saying like, “The journey of a thousand miles begins with a single step.”

Unit 1 - Section 2
Introduction
Stimulate recall of prior knowledge.
Begin lesson with a reminder that the learner that has completed Section 1 should have already requested the required computer accounts from Client Services.

Gain attention to lesson.
I will use an analogy to begin Section 2 and explain that before you can collect data you must first have a storage location to store the data. Unit 1 will instruct how to create this online storage place called a database using MySQL. An example analogy may be picking apples from an apple tree. Harvesting apples from an apple tree can be compared to harvesting data from an online form. Apple pickers have a picking bag that they strap around their shoulders. The apple pickers pick apples and fill up their picking bag, once the bag is full they empty the picking bag into a bushel basket. This can be compared to completing an online form, the user fills out all the required fields of the online form and when the user presses the submit button after completing an online form the information needs to be stored somewhere. It is like the apple picker emptying the picking bag, if there is no basket for the apples to be stored the apples will just fall out all over the ground and will be lost; if there is no database to store the information when the user presses the submit button the information will also be lost.
Stimulate the learner’s attention. **Examples** of online forms and data collection (help desk, technology surveys) will be shared to demonstrate the wide variety of applications that this instruction offers. Examples should be chosen that are relevant to the learners or that the learners may have already participated in such as the CEPS Faculty Technology Survey that is conducted once per year by the CEPS Technology Committee. Emphasize to the learner the benefits of using online forms to collect data (no hand entering of data from paper-based forms, reduces the chances for data-entry error).

**Unit 1 - Section 2 Body**

Stimulate recall of prior knowledge. Refer back to the CEPS Faculty Technology Use survey that was mentioned earlier. Remind the learners that they already possess much of the knowledge necessary to create online forms. The learners already have the knowledge of how to create basic HTML webpages and they will be using this prior knowledge to incorporate PHP code into a webpage. Make the learner feel comfortable with this prior knowledge and remind them that their previous HTML experience will help them learn the new PHP and MySQL material.

Present information and examples.
Give the URL to the EIU Help Desk Service Request website: [http://www.eiu.edu/~itshelp/faculty/cservice.php](http://www.eiu.edu/~itshelp/faculty/cservice.php) This provides an example of an online form that faculty may use to submit computer problems to the Help Desk. Faculty may not be aware of this method of submitting help requests so this also serves as a real world and useful example of how online forms can be used to submit information.

Gain and direct attention.
State the four components necessary to process an online form. Emphasize the importance of understanding the process of submitting an online form. Use a real world example that will capture the learners attention.
**SO 2.1**

Guide or prompt use of learning strategies.
Several learning strategies will be used throughout Unit 1. A graphic will be designed to help learners visualize the processes necessary to capture data using an online form from start to finish for Section 2. This graphic will be accompanied by verbal instructions explaining the graphic for the four components necessary for submitting data to a database using an online form. **SO 2.2** The graphic will be accompanied by verbal information explaining the process and use the “think-backward” approach, that is start with an example online form and have the learner think what happens when the submit button is pushed. Each component required (web server SO 2.2.1, HTML SO 2.2.2, MySQL 2.2.3, and PHP Scripting Language 2.2.4) will be discussed and the explanation for what each component does and why each component is necessary will be provided. **TO 2**
Unit 1 - Section 2 Conclusion
Provide summary and review. List the four components and give a brief recap of the instruction. TO 2

Remotivate and close.
Mention to the learner that they already have experience using HTML and web server technologies so they are already half way there to knowing how to incorporate the addition of an online form with their web page. Explain to the learner that Unit 1 will focus on how to use MySQL technology, a new topic that they have not learned before, and that Unit 2 and Unit 3 will focus on web server, HTML, and PHP Scripting technologies and they will learn more about these later.

Unit 1 - Section 3 Introduction
Gain attention to lesson
Draw the attention of the learner specifically to the MySQL database portion of forms processing that was discussed in the previous section – provide a brief overview stating the four components required to process an online form.

Inform the learner of instructional purpose.
Inform the learner that Section 3 instructs the learner on how to identify and classify basic database fields required to store data collected via the online form. TO 3

Stimulate the learner’s attention.
Explain to the learner that at the end of Section 3 the learner will have the necessary skills to identify/classify fields from any example paper-based or online form. The learner will then be able to use the knowledge from Section 3 and apply it in Section 4 to actually create an online database using their very own MySQL account. This draws attention and interest of the learner because they know that this is a real exercise and they will be using their own account to learn the material.

Unit 1 - Section 3 Body
Stimulate recall of prior knowledge.
Give an example of a database and have the learner recall the basic terminology of table, field, field type, and record. Use a library book example of subject, author, title, location number, and description as all learners are familiar with this example. Give formal definitions to the database terms. SO 3.1

Present information and examples.
Present an example of a paper-based form that we would like the learner to hypothetically put online. Ask the learner how many fields would be required to store the data, explain that for every question on the form we must have a field to store the data into. Instruct the learner how to deconstruct the form and match each entry of the form to a database field of proper type. Provide example with the 4 different types, char, varchar, tinyint, and date. Describe the characteristics of each type. SO 3.2
Gain and direct attention.
Direct the attention of the learner to what kind of information is to be stored into the database. Is it text, is it a number, is it both? Give an explanation of the field types char, varchar, tinyint, and data to the learner and when each should be used. SO 3.3

Guide or prompt use of learning strategies.
Since the field types are concepts I will use examples and non-examples to explain the four types of fields required. Give an example of a form that could be converted into an online form. Walk through the example with the learner by identifying and classifying the required field types from the examples. Use the example and instruct the learner with how to identify field types. SO 3.3 Next, have the learners classify the online form fields by field type with other examples. SO 3.3.1, 3.3.2, 3.3.3, 3.3.4

Elicit response.
Use another example of a form and have the learner fill in the blanks as to what type of field is necessary to store the data for each field in the form. Because this is paper-based instruction there is not an opportunity for live interaction with the learner. I can however pose questions to the learner as the material is presented to get the learner to think about why the learner is doing a particular procedure (self-questioning). It is important for the learner to be able to think their way through the procedure and know why each step is necessary. For Section 3 it is important for the learner to be able to identify/classify database fields by proper type. SO 3.2, 3.3, 3.3.1 -3.3.4 Examples will need to be given for each field type. I will build in a self-quiz to quiz the learner after the instruction is given.

Provide feedback.
Direct interactive feedback is not possible with paper-based material, however once again an example answer may be provided to a previous question that the learner can study to seek understanding of the question from the example answer. Answers to the above quiz will be given (perhaps at the end of the unit so the learner will not see the answers next to the quiz items in the instructional material). Provide the answer to the fill in the blank questions posed above at the end of Section 3. SO3.3, 3.3.1, 3.3.2, 3.3.3, 3.3.4 TO 4
**Unit 1 - Section 4 Introduction**

Gain attention to lesson
Stimulate the learner’s attention.
Provide an overview.

This section will use a real world example. Inform the learner that they will be using the phpMyAdmin program to administer and create a database that will be capable of storing information from an example online webliography form. SO 4.1 An example of a webliography will used for Section 4 of Unit 1 to explain the procedure for creating a database. SO 4.2 The learner will be given an example of an online webliography form and the learner will have to deconstruct the form and determine the number and type of database fields required to meet the objective of collecting and storing information that is submitted from the form. SO 4.3, 4.4 The learner will then use the phpMyAdmin program to create a database with appropriate field types to store the data. The learner will also learn how to insert, browse, edit, and delete data once the database is created.

SO 4.5, 4.6, 4.7, 4.8

An example of the online webliography will be shared. This gives the learner the final product as an example and will motivate the learner to create their very own webliography that they will have complete control over and can add, edit, and delete records of their own choosing.

Inform the learner of instructional purpose.
Explain to the learner that this webliography example will be used throughout Unit 2 and Unit 3 so that at the end of the instruction of all units they will have a working example of an online webliography form and backend database capable of storing submissions from the online form.

**Unit 1 - Section 4 Body**

Gain and direct attention.
Inform the learner that they will be using their own MySQL account to create the backend database necessary to store information from the online webliography example and they will need the userid and password given to them by Client Services. They need to follow directions carefully as the product of this instruction will be used in Units 2 and 3 to complete the example online webliography form. When the learner has completed Section 4 they will have the backend database necessary to store information from the future online form that they will create.

Present information and examples.
Explain the function of phpMyAdmin and how it will make the learners job easier, phpMyAdmin uses a point and click interface. SO 4.1 Explain that it is possible to create a MySQL database without phpMyAdmin, but we would have to know the SQL language and issue commands at the command line. If we did not use phpMyAdmin we would have to learn how to program in SQL, phpMyAdmin provides an easy way for the learner to create and administer a database with little programming knowledge. (Shows the learner that we are using appropriate easy to use tools for this job).
Present information and examples.
Provide the learners with the example webliography online form.

Stimulate recall of prior knowledge.
Remind the learners that they already know how to deconstruct a form and identify proper field types from example forms given from Section 3 of Unit 1.

Deconstruct the example webliography form and identify and classify the number of database fields required to store information from this form. Make a list of fields required to store information from the form. Instruct the learner how to determine the length of each field. The learner will need to make sure that the field length is long enough to store information that may be entered from the example online webliography. SO 4.3

Guide or prompt use of learning strategies.
This section is largely procedural, screenshots of the phpMyAdmin program will be given with step-by-step instructions for the learner to follow along with. Give the URL to logon to phpMyAdmin GUI. Show a screenshot of phpMyAdmin once a user has logged in and give a brief overview of its features. SO 4.1 Each of the objectives SO 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, and 4.9 will have screenshots showing the learner how to complete each objective. Explain to the learner that once they learn the interface to phpMyAdmin it becomes very easy to create databases and browse, insert, edit, delete, and export information from the database. All the subordinate objectives 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, and 4.9 will be instructed using the online webliography example.

Detailed information will be provided to guide the learner with each step. Screenshots with verbal instructions will be provided for:
SO 4.2 - database name will be provided along with an explanation of legal field names based upon MySQL standards.
SO 4.3 - the number of fields, field type, and field length will be provided
SO 4.4 - field names, field type, and field length will be provided along with an explanation of legal field names based upon MySQL standards.
SO 4.5 - example data will be provided to insert into the database
SO 4.6 - the learner will be instructed how to browse the database once data is entered
SO 4.7 - the learner will be instructed how to edit data already entered into the database
SO 4.8 - the learner will be instructed how to delete records
SO 4.9 - the learner will be instructed how to export a database to an excel spreadsheet for later analysis – excel is a program the learners are already familiar with.
TO 4
Present information and examples.
Explain to the learner that once they have data entered into the online database as they have just completed that it is possible to export the data to a Microsoft Excel spreadsheet that they are already comfortable in using. Show a screenshot and give a verbal explanation of how to export data using the phpMyAdmin GUI and save the file to the hard drive. SO 4.9

Elicit response – Practice.
Quiz - Provide a small form with three fields and have the learner create the database and insert a four records of data into the database from provided information. Have the learner delete one record and then export the database to an excel spreadsheet format. TO 4

Provide feedback and remediation.
Provide a screenshot of the completed database in phpMyAdmin, show a screenshot of the data in browse mode. Instruct the learner to refer back to the instructional material if they did not fully understand how to complete a step. An optional example (in an appendix) will be given for remediation purposes if the learner would like additional practice.

**Unit 1 - Section 4 Conclusion**
Provide summary and review.
Providing a summary review is critical for Section 4 as the knowledge and skills learned from this unit are equally applicable to any online form that the learner would like to create. Briefly review the three other sections of Unit 1 to pull the information together.

Enhance transfer.
Once again go over the possible uses for online forms. Try to pick examples of online form uses that will be applicable to the intended audience. Pose a question to the learner challenging them to think of a personal need they may have to collect data (reflection) and encourage them to pursue using the knowledge and skills gained from this instruction to implement their ideas.

Provide remotivation and closure.
Congratulate the learner on completing Unit 1 and explain to them they have now accomplished one-third of their goal of knowing how to create an online form that they now know how to store data in an online database. The learners now have the knowledge and skills to create an online database that will serve as a repository for the information they will collect from an online form. Explain to the learner that creating a database to store online form data is necessary before they can collect information from an online form. Refer back to the apple picker analogy. If the learner tried to submit information from an online form without having a place to store the information they would be unsuccessful. This is why you create the database before coding in PHP as will be discussed in Unit 2. Field names must be identified before programming PHP.
Note: This closure is for Unit 1 and deliberately leads into our next topic of Unit 2 which will be the Introduction and Overview of PHP. Again, due to time restraints and the complexity of the multi-unit format this project only considers Unit 1. Units 2 and 3 will be further developed to complete the instructional material at a later date.

**Assessment**

*(Note: Dr. Lai commented this section as written is formative assessment, this should have been focused on the Assessment of Learners. Our CIMT620 class did not have examples for guidance.)*

An entry skills assessment will first be given to try-out learners. A pre-test will also be given to determine if the learners already possess the skills of the instructional material. A post-test will be given upon completion of Unit 1 and analyzed to determine the effectiveness of the paper-based instructional material.

The evaluator will take notes as the evaluator gives the entry-level, pre-test, and post-test. The evaluator will also record observations as the try-out learners go through the instructional material for the first time, noting areas that give the learners difficulty.

The post-test will be administered and compared with the pre-test. An interview with the try-out learners will be conducted after the try-out learners have completed the material and have completed the post-test to ascertain what difficulties the learner had with understanding the material.

At the completion of the unit a questionnaire will be given to determine overall satisfaction of the learning experience by the learners. The formative evaluation will then be analyzed to determine overall effectiveness of the instruction and determine if there should be any revision(s) of the instructional material for improving the instruction.

If post-test results show an area of weakness the learner will be asked to identify areas of non-understanding and the instructional material will be revised to compensate for deficiencies if warranted.
Lesson Delivery Strategies
The lesson will be chunked into related units and delivered in a paper-based format using the Unit and Section approach. The Units will require the use of a computer with Internet access, and MySQL and HTML accounts as indicated in the instructional materials. This instruction is in the problem solving domain and is largely procedural. A hands-on approach will be used with screenshots of relevant screens for Section 4 objectives. The first three units consist of declarative knowledge and concepts that will be used in Section 4. Since this is self-instruction learners will not do any group work – individual learners will learn the material at their own pace. Packets of material can be given to the learners at anytime and the learners may study the paper-based instructional material at their own pace. Material will be maintained by CEPS Instructional Technology staff and will be advertised for availability through CEPS technology newsletters. The advantage of the paper-based material is that it is easily transported to the location of where the learner will be doing the lesson. The learner can study the material at any time without the need of a computer.

(Other-Organizational Strategies)
Many examples will be used with real world applications that the learner is familiar with. Graphics will be used as part of Section 2 objectives to visualize the components required to process online forms. Analogies will be used where appropriate such as Section 2 in describing the process of submitting a form. The analogy will use a concrete example of an apple picker dumping a picking sack into a bushel basket analogous to the user clicking the submit button on the online form. Mental imagery of this example should be effective in painting a picture in the learners mind of the processes involved when an online form is submitted. Examples will be used that will draw upon previous knowledge of this group of learners such as searching the library database for a book. Example forms will be chosen that are to be relevant to this group of adult learners and take advantage of the intrinsic motivation of this group. These strategies are distributed throughout the lesson.

Lesson Management Strategies
This is a self-contained instructional unit and the learner will be able to complete the material at their own pace at any time of day with the necessary pre-requisites of computer with Internet access, HTML, and MySQL accounts. The material lists the requirements of for completion and instructions are given for how to obtain the necessary accounts. Learners must meet the above requirements to complete the hands-on portion for Section 4. For the database programming portion of activities all the learner needs is an Internet browser.

This paper-based instructional material will also be converted to an Adobe Acrobat PDF file and placed online for faculty members to access electronically or print out if they so choose. This provides a convenience for the learner so that they can access the material anytime they are ready for the instructional material. Having an alternative electronic format can also reduce copying and storage costs. It also allows for the updating of material electronically and avoids unnecessary waste of having to stock pile multiple copies of the instruction that may become out-of-date before they are used. This on-demand method offers many benefits yet maintains paper-based qualities.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project H

Instructional Materials
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Self-instructional material for EIU faculty members interested in learning how to create their own online forms using Internet technologies.

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December 5, 2003
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Prerequisites:

Users of the following self-instructional material should already be familiar with creating and editing their own web pages. This material expects the user to be familiar with HTML creation and uploading and downloading web pages to EIU servers. Users should also have a basic understanding of database concepts. If you are not familiar with how to create your own web page or are not familiar with basic database concepts it is suggested that you attend one of the beginning HTML and/or beginning level database classes offered by Booth Library or TECnet before you begin this material.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Overview

Congratulations on taking the first steps for learning how to create your very own online forms! Completing this set of self-instructional material will give you the knowledge and skills necessary to create your own online forms using Internet technologies to collect data that is applicable to your needs as a faculty member here at Eastern Illinois University.

Knowing how to create your own online forms offers many benefits. Online forms are used to collect data using widely available Internet technologies. Anything that you currently are using to collect data via paper-based methods can be adapted to an online format. The benefits of online forms include:

1) No double-entry of data. (saves you time)
2) Less chance of data re-entry errors. (improves accuracy)
3) Ability to query data in the database for analysis.
4) Sharing data electronically with others.
5) Easy to update.
6) Easy to use.

This self-instructional material consists of three units. **Unit 1** – provides information about the components necessary for putting a form online along with instructions for how to create an online database. **Unit 2** – provides instruction on the PHP scripting language and how it is combined with HTML web pages to capture data from an online form and store information collected from the online form into a database. **Unit 3** – provides instruction on how to display the information once it is stored in the database back to a webpage on your website. This set of instructional materials requires the use of your own HTML and MySQL accounts. Information on how to obtain HTML and MySQL accounts is provided in Unit 1 – Section 1.

Units 1, 2, and 3 all use a common example of a **webliography** throughout this instruction. A webliography is an adaptation of a bibliography that is used to collect hypertext links of Internet sites and provides a brief explanation about the website, many times a rating system is also used to rate the quality of the website reviewed. Faculty can use webliographies as an assignment for students to research appropriate websites about a particular field of study. By the end of Unit 3 you will have a fully functioning online form that will collect webliography information submitted by students that can be shared with your classes!
Online forms have a variety of uses and you are already familiar with online forms from an end-user perspective. Each year the CEPS Technology Committee requests your participation in a faculty technology use survey that uses an online form to collect data. Information Technology Services uses online forms for users to submit requests for new computer accounts. The Help Desk uses an online form for users to submit computer problems. Booth Library uses an online form for students to request assistance from a Librarian (see Figure 1).

![Booth Library “Ask a Librarian” Online Request Form.](http://www.eiu.edu/~booth/services/email_lib.html)

Converting existing paper-based forms to online forms can save you time, increase accessibility, and the data collected is easily analyzed and can be shared with others.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Unit 1

Unit 1 - Section 1

**Purpose:** At the completion of Section 1 you will have acquired HTML and MySQL accounts from Client Services on the server known as io.cts.eiu.edu that will be necessary to complete Units 1, 2, and 3.

This unit requires that you obtain both HTML and MySQL accounts for the server known as io.cts.eiu.edu to complete this set of self-instructional material. The server io.cts.eiu.edu is also known as www.eiu.edu and is the main server Eastern Illinois University uses as the web server for campus. Accounts requested from Client Services will be in your name and the information you learn throughout this instruction can be adapted to your own individual needs.

A HTML (Web Page) account is necessary on the server io.cts.eiu.edu because this is the server that will process the information submitted from an online form as part of your website. The MySQL account is necessary because MySQL is the database technology that will be used to store data that is submitted from an online form. We will learn more about the components necessary to process an online form in Section 2. Currently the two accounts are required to be on the same server (io.cts.eiu.edu) because of the current server configuration setup by Information Technology Services.

You may already have a HTML account on the io.cts.eiu.edu server if you have a web page you are using for the course(s) you teach. If your existing web site has a web address with www.eiu.edu as part of the web address you already have the necessary HTML account on this server and will not need to request another one unless you want a separate website for learning this material. If your web page has www.ux1.eiu.edu as part of the web address or if you do not currently have a web page you will need to request a HTML account on io.cts.eiu.edu using the following procedure:
Go to the following Information Technology Services webpage and complete the requested information to acquire a HTML account on io.cts.eiu.edu: https://www.eiu.edu/~itshelp/group/index.php (see Figure 2).

Figure 2. Information Technology Services Group/E-mail Request Form. (https://www.eiu.edu/~itshelp/group/index.php)

Once you submit your request for this Group E-mail/Web (HTML) account please allow 1 to 2 business days for Information Technology Services to process the information. You will be notified via email with the HTML account user name and password. If you experience problems or delays you may call Vicki Phillips of Client Services at (217) 581-5171.
You will also need a MySQL account on io.cts.eiu.edu. The MySQL account is required so that you can create a database that can store information processed by an online form. It is important that the HTML and MySQL accounts both be located on the io.cts.eiu.edu server because of the way the servers are currently configured. Obtaining a MySQL account is similar to obtaining a HTML account. Go to the following Information Technology Services webpage and complete the requested information to acquire a MySQL account on io.cts.eiu.edu https://www.eiu.edu/~itshelp/group/index.php (see Figure 3).

Figure 3. Information Technology Services MySQL Database Request Form. (https://www.eiu.edu/~itshelp/group/index.php)

Once you submit your request for this MySQL account please allow 1 to 2 business days for Information Technology Services to process the information. You will be notified via email with the MySQL account user name and password. If you experience problems or delays you may call Vicki Phillips of Client Services at (217) 581-5171.

The journey of a thousand miles begins with a single step. Congratulations on completing Section 1 of Unit 1, the first step for creating your very own online forms! Be on the lookout for your new account(s) information.

**Note:** The MySQL account will be required to complete Section 4 of Unit 1. The HTML account will be required for Unit 2 and Unit 3.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Unit 1 - Section 2

**Reminder:** Be sure that you have requested HTML and MySQL accounts on io.cts.eiu.edu from Information Technology Services as instructed in Section 1.

**Purpose:** *At the completion of this section you will be able to explain and describe the four components necessary for gathering data via an online form.*

Let’s use an analogy to explain the process of collecting information from an online form. Processing an online form can be compared to harvesting apples from an apple tree (see Figure 4). Apple pickers have a picking bag (online form) that they strap around their shoulders. An apple picker picks apples (data) and fills up their picking bag, once the bag is full they empty the picking bag (submit) into a bushel basket (database). This can be compared to completing an online form, the user fills out all the required fields of the online form and when the user presses the submit button after completing an online form the information needs to be stored somewhere. It is like the apple picker emptying the picking bag, if there is no basket for the apples to be stored the apples will just fall out all over the ground and will be lost; if there is no database to store the information when the user presses the Submit button the information will also be lost. The remainder of Unit 1 focuses on the database technology MySQL and how to create a database that can store data from online forms.

![Figure 4. Harvesting data from an online form.](image)
Let’s step back a moment and reflect on what is required to process an online form. The example of the “Ask a Librarian” online form (Figure 1) used earlier in Section 1 requires a web page that displays the online form itself, a web server that process the HTML code to display the online form, a scripting language (PHP) to process the online form once the Submit button has been clicked on by the user, and a database that will store the information once the information has been processed.

The four basic components that are necessary to process an online form are:

1) Web Server
2) HTML Web Page
3) MySQL Database
4) PHP Scripting Language

Now let’s look at a detailed description of what each of the components does.

**Web Server** – the purpose of the web server, in this case io.cts.eiu.edu also know as [www.eiu.edu](http://www.eiu.edu), is to serve HTML web pages to an end-user using a browser like Internet Explorer. Every time a user requests a web page from a web server by typing in the web address of a web page in your browser the browser retrieves the web page from the web server, the web server processes the HTML code (and any PHP code if present) and then delivers this processed code to the end-user’s browser where it is displayed on the screen.

**HTML Web Page** – the purpose of the HTML (Hypertext Markup Language) web page is to display information being served by the web server to the end-user’s browser. HTML is the industry standard for creating web pages.

**MySQL Database** - MySQL is an open-source database program that provides the tools necessary to create an online database to store information. SQL stands for Structured Query Language and is a common database standard used in the industry. Section 4 of this unit will provide instructions for creating a MySQL database.

**PHP Scripting Language** - PHP is a scripting language that can be embedded within HTML code to process online forms. When PHP code is combined with HTML code the web server interprets the PHP code embedded within the HTML code and processes the instructions and then delivers the web page to the end-users browser. PHP is a very powerful scripting language that acts as a “middle man” between HTML web pages and a MySQL database. You will learn more about the PHP scripting language in Unit 2 and Unit 3.
EIU Help Desk Computer Service Request Form

Let’s look at another example. Figure 5 shows an example of the EIU Help Desk Computer Service Request form. You may know that you can call 581-HELP (581-4357) to submit a service request to the Help Desk but you may not know about an online form that can also be used to report problems. This online form is another way for you to submit work requests to the Help Desk. The online form is located at: http://www.eiu.edu/~itshelp/faculty/cservice.php

The EIU Help Desk Computer Service Request form is an example of a simple online form. The form consists of six fields for a computer user to enter information about a problem they may be experiencing. Once the user has entered the required information in the form the user clicks the Submit button. When the Submit button is activated a PHP script takes over and sends the information to the web server. The information is processed by the web server, the PHP code is interpreted by the web server and the information is stored in a MySQL database. This “magic” all happens behind the scenes and the end-user never knows what happens to the data other than knowing a service technician will be dispatched to fix the problem they may be experiencing.
From the above example we see that we need the **HTML web page** that displays the online form, a **web server** that processes information submitted by the end-user, some type of **scripting language (PHP)** that the web server uses to process the information so that the information can be submitted and stored into a **MySQL database**. These four components are required to process any online form on the machine known as io.cts.eiu.edu. Figure 6 displays a graphic representation of the four processes necessary to process information submitted from an online form.

The good news is that you are already familiar with web servers and how to create your own web pages. You will now need to learn how to use the PHP scripting language in combination with HTML and learn how to create a database using MySQL technology. Unit 2 provides instruction on the PHP scripting language. Our next section will provide a review of basic database terminology and Section 4 will provide instructions for creating your very first MySQL database.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Unit 1 - Section 3

Purpose: At the completion of this section you will be able to describe the basic structure of a simple database and identify/classify database field types given an example form.

The previous section described the four components necessary to process online forms; a web server, HTML web page, MySQL database, and the PHP scripting language. Section 3 and Section 4 focuses on the MySQL database server technology. The knowledge you will gain from Section 3 will be used in Section 4 to create a database using phpMyAdmin and MySQL.

Database Review:
Let’s take a moment to review the basic structure of a simple database. For the purposes of this instruction we will only consider a “flat file” database. If you have used other database software like Microsoft Access you may be familiar with relational databases. To keep things simple for this course we will only use the flat file database to learn the basics of processing online forms. A flat file database contains only one table while relational databases contain two or more tables linked together by a key field.

A database is simply a storage place for data. A database consists of one or more tables that stores information (data), in our case we will be using only one table for this instruction. A database table is the unit that holds blocks of data called fields. A database field is the smallest unit in a database and is used to store data, fields can be of different types depending upon what type of data we would like the database to store. A record consists of one or more related database fields. A database can contain many records and each record can have many different fields.

An example you are familiar with is the use of a database for your research activities. Booth Library offers many searchable online databases that allow you to find information by author name, subject, book title, description, location number, and year published. Each of the previously mentioned fields can be searched for independently of the others and this is why databases are so powerful. Before computer technology became widespread libraries used card catalogs to organize information about the books they housed. Today it is easy to lookup a book using Internet technologies that are tied to backend databases similar to MySQL. Database technology allows for powerful searching of data by breaking data down into individual fields that can be queried and analyzed.
Identifying and Classifying Field Types:
Before you can create a database you must first determine the type of information you want to collect. The information should be broken down into individual units called fields. Each field can be of a different type depending upon what the field will be used for. Will the information to be stored in the field be alphabetic, numeric, or alphanumeric? Will the field hold date information?

The decisions made in choosing proper field types greatly influence the performance of a database, so it is wise to have a detailed understanding of these concepts. We will look at four basic field types, CHAR, VARCHAR, TINYINT, and DATE as part of this instructional material to learn the basics.

CHAR
The CHAR field type is used to represent fixed length strings (alphanumeric data). A CHAR string can range from 1-255 characters. You should only use the CHAR field type when the data collected is always of known fixed length such as the two letter abbreviations for the States (IL, IN, WA, etc…). By keeping database field sizes small you will increase the efficiency of the database when you begin querying the data. Use CHAR when the data you want to store is of fixed length.

VARCHAR
VARCHAR field type is a more flexible form of the CHAR field type. It also represents data of type String (alphanumeric), yet stores this data in variable length format. Again, VARCHAR can hold 1-255 characters. VARCHAR is usually a wiser choice than CHAR, due to it's variable length format characteristic. Keep in mind that CHAR is much faster than VARCHAR, sometimes up to 50% faster but the majority of field types you create will probably be of type VARCHAR. Most fields you will use to store data will probably be of variable length.

(A CHAR field type stores the whole length of the declared variable, regardless of the size of the data contained within, whereas a VARCHAR field type only stores the length of the data, thus reducing size of the database file.)

DATE
DATE stores date related information. The default format is 'YYYY-MM-DD', and ranges from '0000-00-00' to '9999-12-31'. MySQL provides a powerful set of date formatting and manipulation commands that are too numerous to be covered as part of this instruction.

TINYINT
A very small integer. The signed range is -128 to 127. The unsigned range is 0 to 255.
Note: There are many other field types that MySQL supports, we only consider the four basic types of CHAR, VARCHAR, DATE, and TINYINT for this set of instructional materials. One can find these functions covered in detail within the MySQL documentation.

Example Forms:
Now let’s look at a couple of examples of a paper-based form that we would like to convert to an online form. First we will need to determine the number and types of fields required to store the data into an online database.

Example Form #1:
Last Name:
First Name:
Email Address:

We can see from the above example that we will need to have a total of three fields to hold the information we wish to collect to be stored in a database. All of the fields listed above can be of variable length depending upon who will be filling the form out. We should use the VARCHAR field type for Last Name, First Name, and Email Address because all the fields will be of variable length.

Example Form #2:
Last Name:
First Name:
Age:

For Example Form #2 we can see that the Last Name and First Name fields will be of variable length and we should select the VARCHAR field type. For the Age field we can use the TINYINT field type and use a length of 3 because this will be a number. By using a length of 3 we can record ages all the way up to 127 (the maximum value of the TINYINT type). We will never likely record an age this old but we might need to record the age of a person over 100 years of age. It is always best to err on the side of greater length to ensure that the field can hold any value of data that could reasonably be collected.

Self-Quiz for Section 3:
Now it is your turn. Given the following form identify and classify the field types necessary to store the data to be collected from the example form below:
Last Name:
First Name:
Age:
Mailing Address:
City:
State (two letter abbreviation):
Answers are given on the next page.
Answers to Self-Quiz for Section 3:

Last Name: VARCHAR
First Name: VARCHAR
Age: TINYINT
Mailing Address: VARCHAR
City: VARCHAR
State (two letter abbreviation): CHAR
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Unit 1 - Section 4

**Purpose:** At the completion of this section you will be able to create a MySQL database using the phpMyAdmin Graphical User Interface (GUI) by completing an example online webliography form.

We are now ready to do a real world example and create your very first MySQL database. Section 4 will use the example of an online **webliography** that we wish to collect information from students about websites they review and rate. The webliography will have the following fields:

- **Name of Website:**
- **Web Address (always begin with http://):**
- **Description of Website:**
- **Name of Reviewer:**
- **Website Rating (on a scale from 1 to 5, 1 being poor and 5 being terrific):**
- **Date Reviewed:**

This information will be collected via an online form. Before we create the online form we must first have a place to store the data (bushel basket). You will need to have a MySQL account user name and password that you requested earlier in Section 1.

We could login to the MySQL server and create the above fields using the command line but we would have to know the MySQL commands. Because you are all very busy we will create the MySQL database the easy way! We will use a program called phpMyAdmin that is a Graphical User Interface (GUI) that will make your job a lot easier.

phpMyAdmin acts as a “middle man” between the web browser and the MySQL database server. Because it is a graphical user interface it uses a mouse to point and click to get things done. This is much easier than having to hand code MySQL commands. Once you get the hang of how phpMyAdmin works it becomes very easy to manipulate a MySQL database.
Step 1 – Accessing phpMyAdmin
To access phpMyAdmin type in the following web address in your browser:
(Notice this web address begins with https)

https://www.eiu.edu/phpMyAdmin

You will use the web address listed above anytime you need to login to phpMyAdmin. You will see a login window and be prompted for your MySQL User name and Password, see Figure 7.

Note: The web address begins with https. The “s” means that we are entering a secure website that will encrypt our information to keep it from the prying eyes of hackers. Also note that your MySQL User name and Password is different than your HTML User name and Password. When you login to phpMyAdmin you are using your MySQL account. If you are planning to use your database to collect sensitive or confidential material like social security numbers, grades, or salary information you need to take extra steps to protect the information. If you need a secure database please contact Vicki Phillips of Client Services at 581-5171.

Figure 7. Login screen to MySQL using phpMyAdmin.

Type in your MySQL User name and Password that you received from Client Services. Click OK to login.

Note: Because this set of self-instructional materials uses my own MySQL account the remaining instructions and screenshots are for my own MySQL user name csgtg. You will need to substitute your MySQL user name in place of csgtg throughout the remainder of the instructions. phpMyAdmin is a very powerful program that can do many different things, the remainder of the instructions will cover the basics of phpMyAdmin to create the database for our webliography example.
Step 2 – Create a New Database

Since this is the first time you have logged into phpMyAdmin you will need to create a new database. In the create new database field (see arrow in Figure 8) type in the following name csgtg_webliography (substitute your MySQL user name in place of csgtg, use the Backspace key to remove the three periods and replace the three periods with the underscore character followed by the name you wish to give the database, use all lower case letters with no spaces, in my case csgtg_webliography. All databases should begin with your MySQL user name followed by an underscore and then the name of the database with no spaces because of the way MySQL is setup on the server. Once you have the database name typed in correctly you may click on the Create button located to the right of the new database name to create the database. Figure 8 is a screenshot of the phpMyAdmin screen that allows you to create a new database.

![Figure 8. phpMyAdmin screenshot for creating a new database.](image)

**Note about database and field names:** Database names and also field names should be kept relatively short (under 25 characters long). Names should be descriptive and relevant to the intended use. This will make your job easier later on when you begin programming PHP scripts. Another helpful tip is to always use **ALL lower case letters** when naming databases and field names. Do not use special characters in database and/or field names like $, ?, ; & \ % : = < @ + > / " * some servers do not accept special characters as part of a database/field name and Unix reserves these characters for special use. Never use **spaces** in database and/or field names. If you want to simulate a space you may substitute the underscore character ( _ ) in place of the space for database and field names as we did in the above example, csgtg_webliography. These are just a few tips that will make your life easier later on in Unit 2 and Unit 3 when you begin working with PHP scripts so it is best to get into good habits now.
Step 3 – Create a New Table for the Database

Now that we have created our first database we need to create a table so we can define what field types we need for storing our data. After you create the new database a phpMyAdmin screen automatically appears asking you to create a new table for database csgtg_webliography and asks how many fields you would like to create. Notice that in the screenshot below that it says “No tables found in database” on the left side of the screen. This is because we have not created a table yet. Looking at our example webliography form we can see that we will need 6 fields to store the information. For lack of a better name for this table let’s call this table table1 (all lower case letters, no spaces). You can leave the database comment field blank, click on the Go button to create table1. (see Figure 9).

![Figure 9. phpMyAdmin screenshot for creating a new table.](image)

Step 4 – Create the fields for the table.

You will now see a screen similar to Figure 10 on page 19, but before we fill out the information illustrated in Figure 10 let’s take a look at the field types and field lengths required for our example webliography form.
Look at the example webliography form again. The webliography will require the following fields:

**Name of Website:**
**Web Address (always begin with http://):**
**Description of Website:**
**Name of Reviewer:**
**Website Rating (on a scale from 1 to 5, 1 being poor and 5 being terrific):**
**Date Reviewed:**

First, we need to identify and classify the fields and give them a name. We have already decided that it will take 6 fields to store the information. We need to determine the field type for each field. In determining field names it is best to keep field names short (under 25 characters) and use all lower case letters; this will help make our job of programming the PHP code easier for Unit 2 and avoid unnecessary programming errors due to having MiXeD CaSe field names. Do not use spaces for names, use an underscore character to represent a space if needed. For the webliography form above I will use the following field names, length, and type. Let’s make a table to help us organize the information we will need. (See Figure 10 on page 19 for a screenshot example of the field names)

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Length</th>
<th>Field Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>website_name</td>
<td>150</td>
<td>VARCHAR</td>
</tr>
<tr>
<td>web_address</td>
<td>255</td>
<td>VARCHAR</td>
</tr>
<tr>
<td>description</td>
<td>255</td>
<td>VARCHAR</td>
</tr>
<tr>
<td>reviewer_name</td>
<td>75</td>
<td>VARCHAR</td>
</tr>
<tr>
<td>rating</td>
<td>1</td>
<td>TINYINT</td>
</tr>
<tr>
<td>date_reviewed</td>
<td>default</td>
<td>DATE</td>
</tr>
</tbody>
</table>

Lengths of database fields should be appropriate for the information we wish to collect. The maximum value for the VARCHAR field type is 255 and should be used for fields that may be up to 255 characters long. The website_name should be limited to 150 characters, this is a reasonable length that is appropriate. We should use the VARCHAR field type for information that will be of variable length. TINYINT will be used for our rating scale and the DATE field type will be used to record the date_reviewed field.
Now we can transfer the information about the field types determined above to table1 and create the database fields in phpMyAdmin. Figure 10 shows a screenshot of the phpMyAdmin table1 already filled in. Go ahead and fill in the field names, length values, and field type (use the pull down menu).

phpMyAdmin even has a place for a default value for fields, for our example we will place http:// in the default value for the web_address field since nearly every web address begins with http://. This is a convenience for the end user so the user will not have to type http:// on the online form. Leave the date_reviewed Length/Values* field blank, anytime you leave a field blank phpMyAdmin will use the default value based upon the type of field (in the case of the DATE field the default is YYYY-MM-DD). You can ignore all the other fields, just leave them blank as illustrated in Figure 10. Click the Save button when you are finished.

![Figure 10. phpMyAdmin screenshot of field names for table1.](image-url)
Once you click on the **Save** button you should see the results similar to those illustrated in Figure 11.

![phpMyAdmin screenshot of the results of creating table1](image)

Figure 11. phpMyAdmin screenshot of the results of creating table1.

Congratulations on creating your first MySQL database (**cshtag_webliography**-substitute your MySQL user name for cshtag), your first database table (**table1**), and creating your first database fields (**website_name, web_address, description, reviewer_name, rating, and date_reviewed**). That is all there is to creating a basic database using MySQL and phpMyAdmin!

We now have the container (the bushel basket) that we can store data in from our example webliography form.

Now that we have created a basic database, table, and added fields to the database let’s look at how we can enter data into the database using phpMyAdmin.
To add data to our newly created database click on the **Insert** tab as illustrated in Figure 11.

Figure 11. phpMyAdmin screenshot, **Insert** tab.
When you click on the **Insert** tab a screen will appear similar to Figure 12. Notice that the Insert tab is a different color (dark gray) when the Insert tab is selected. Go ahead and fill in the Values for the fields as illustrated in Figure 12. Click the **Go** button when finished.

Figure 12. phpMyAdmin screenshot of the **Insert** screen.

If you see an unfamiliar screen be sure to check the tabs near the top of the screen. You can click on the **Insert** tab anytime you want to add more data.
Once you click on the **Go** button you will be taken back to a screen similar to the one illustrated in Figure 13. Notice that the **Browse** button is now active because we now have data to look at.

![Figure 13. phpMyAdmin screenshot of the Table screen.](image)

Click on the **Browse** tab to view the data you just entered in the previous step.

**Note:** The red colored **Empty** and **Drop** tabs in Figure 13. Be careful! If you click on the **Empty** tab it will empty the database of ALL data. If you click on the **Drop** tab it will drop the database table and all the information it contains (field names and data). Do not ever use the **Empty** and **Drop** tabs unless you really do want to empty or drop a table and throw away all of your hard work. These tabs are dangerous and may cause you to lose all of your data!
Once you click on the **Browse** tab you will see a screen similar to the one illustrated in Figure 14. The arrows in Figure 14 show the **Edit** and **Delete** buttons.

![Figure 14. phpMyAdmin screenshot of the Browse feature. Notice how the Browse tab is a different shade of gray indicating you are in Browse mode.](image)

Since we have entered our first record of data it is now possible to edit or delete this record. Click on the **Edit** button we will be taken back to a screen similar to Figure 12 where you can edit the data as we wish. Make any edits needed and click on the **Go** button so that any edits you make are saved.

To delete this record click on the **Delete** button, you will be prompted asking if you really want to delete this record, if so click OK if you do not then click Cancel. Be careful because it is very easy to delete records, always make sure you are deleting a record you no longer want.
**Practice:** Click on the **Insert** tab and add 3 more records. You can make up your own data. After you insert 3 more records click on the **Browse** tab to view the data. Edit one of the records for practice and delete one of the records for practice. Refer back to the instructions above if you need help. Figure 15 shows a screenshot of Table1 in Browse mode after 3 additional records have been added to the database.

Figure 15. phpMyAdmin screenshot of **Browse** tab after 4 records have been inserted into the database.
One last step that you may find beneficial is knowing how to export the data out of the database into an Excel spreadsheet format, something which you are already familiar with. You can then use Excel to sort and analyze your data. Click on the Export tab near the top of the phpMyAdmin screen. You will be taken to a screen similar to Figure 16.

Click on the CSV for Ms Excel data radio button as indicated by the black arrow in Figure 16 and place a check mark in the Save as file box indicated by the other black arrow in Figure 16 and then click Go.

Figure 16. phpMyAdmin screenshot of the Export tab for CSV for MS Excel data.
When you click **Go** you will be prompted to Save the file on your hard drive as illustrated in Figure 17.

![File Download]

Figure 17. Save As dialog box from the **Export** function of phpMyAdmin.

Click on the **Save** button and save the file somewhere on your hard drive. Once you have saved the file click on the **Open** button and MS Excel will be automatically opened and your data will be displayed in the MS Excel spreadsheet if you have Microsoft Excel loaded on your computer. You may have to adjust the column width of the date_reviewed field in MS Excel if the column is not wide enough to display the dates. Close the MS Excel program when you are finished viewing the results.

**If you ever get lost in phpMyAdmin:**
Look at Figure 15 (p. 24) again, notice that the black arrow is pointing to the database name and the circle is around table1. If you ever get lost in phpMyAdmin you can look at these two areas to get your bearings. If you have more than one database created you will need to pay particular attention to these two areas. To change to a different database all you need to do is click on the database name area (where the black arrow is pointing in Figure 15) and a drop down menu will appear listing all the databases you have created using phpMyAdmin. The **Home** button located in the upper left corner of the screen under the phpMyAdmin logo will take you back to where we started this section (Figure 8). You can click on the **Home** button when you are ready to create another database and begin the whole process over when you are ready to create another database.
Practice:
Now it’s your turn.
Let’s look at another example of a form that we would like to put online. We will need to create the database, add a table, add the fields of proper type and length and then enter some practice data.

The following is a form we would like to use to collect data, you can name the database contact_information if you would like:

**Contact Information Form**
**Last Name:**
**First Name:**
**Email Address:**

To get you started we will return to the Home of the phpMyAdmin program by clicking on the **Home** button indicated by the black arrow in Figure 18.

![Figure 18. Home page for the phpMyAdmin program.](image)
You are now ready to start the process from scratch by creating a new database, adding a table, adding the fields of proper type and length and then entering some practice data that you can make up on your own. Since you will now have two databases to manage be sure to pay attention to which database you are working on by noting the database name under the Home button. To switch to another database click on the database name under the Home button and click on the name of the database you want to switch to using the pull down menu that will now be available because you have more than one database created.

You will find information about each step on the following page numbers to help you refresh your memory if needed:

**Creating a basic database** (p. 16) You can name the database contact_information if you would like.

**Creating a table** (p. 17) Let’s use table1 for the table name. We will leave the table name and field names for you to figure out on your own. You can enter your own practice data to experiment with this practice database.

**Adding fields** to the database (p. 18-19)

**Adding (Insert) data** to the database (p. 20-21)

**Browsing** data (p. 23)

**Editing** data (p. 24)

**Deleting** data (p. 24)

**Exporting** data (p. 26-27)

Once you are finished practicing you are ready to exit the phpMyAdmin program.

**To exit phpMyAdmin simply close your browser.**

That’s it! You can now create your very own online database customized to your needs. If you experience difficulty with this instruction Tom Grissom, the Instructional Support Specialist for the College of Education and Professional Studies (581-3823) is available for assistance if needed. For technical questions about MySQL or user accounts please contact Vicki Phillips of Client Services at 581-5171.

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**phpMyAdmin Reminder:**
To access phpMyAdmin type in the following web address in your browser:
(Notice this web address begins with https).

**https://www.eiu.edu/phpMyAdmin**

You will use the web address listed above anytime you need to login and use phpMyAdmin. You will be prompted for your MySQL User name and password.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Conclusion for Unit 1

You have come a long way on this journey to create your own online forms. Earlier we used the example of harvesting apples to that of collecting data from online forms. You now have the knowledge and skills necessary to create the database (bushel basket) that will store data collected from an online form. You have learned much on this journey.

You learned that you need to have four basic components to process an online form. You need a web page that displays the online form itself, a web server that will process the HTML code to display the online form, a scripting language (PHP) to process the online form once the Submit button has been clicked on by the user, and a database that will store the information once the information has been submitted and processed.

The four basic components that are necessary to process an online form are:

1) Web Server
2) HTML Web Page
3) MySQL Database
4) PHP Scripting Language

You also learned about the procedures to create a new database, add a table, add database fields of proper type/length, and insert, browse, edit, delete, and export data once it is entered into a database. The phpMyAdmin program made your job a little easier by providing a graphical user interface that served as the “middle man” between your web browser and the MySQL database server.

Now that you have the basic skills down for creating and editing an online database we will turn our attention to how we can get information submitted by a user from a web page into the webliography database you just created. You are already one-third of the way to your goal of putting your own forms online. For your next lesson you will need to learn about the PHP scripting language and how it is used in combination with HTML. Unit 2 will cover the basics of the PHP scripting language.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project I

Formative Evaluation
Formative Evaluation

I. Plan and Procedure of Formative Evaluation

An entry skills assessment will first be given to try-out learners. A pre-test will then be given to determine if the learners already possess the skills of the instructional material. A post-test will be given upon completion of the Unit 1 instructional material and results will be analyzed to determine the effectiveness of the paper-based instructional material.

The evaluator will take notes as the evaluator gives the entry-level, pre-test, and post-test. The evaluator will also record observations as the try-out learners go through the instructional material for the first time, noting areas that give the learners difficulty and recording observations and reactions of the learners to the materials.

The post-test will be administered and compared to the pre-test to measure the effectiveness of the instruction. An interview with the try-out learners will be conducted after the try-out learners have completed the post-test and questionnaire to ascertain what difficulties the learner had with understanding the material.

At the completion of the Post-test the Instructional Assessment questionnaire will be given to determine overall satisfaction of the learning experience by the learners. The formative evaluation will then be analyzed to determine overall effectiveness of the instruction and determine if there should be any revision(s) of the instructional material for improving the instruction.

If Post-test results show an area of weakness the learner will be asked to identify areas of non-understanding and the instructional material will be revised to compensate for deficiencies if warranted.

The Entry Skills Assessment, Pre-test, Post-test, and the Instructional Assessment questionnaire can be found in the Appendix A of this section.
II. Attributes of Target Audience

All of the intended learners are adults. Ages range from the mid-twenties through the sixties. In general, all are in good health and have no disabilities that would inhibit their ability to master the material being considered. The group of learners are from both sexes, the majority are female, with approximately 70 percent of the group being female.

The target audience are faculty members in the College of Education and Professional Studies at Eastern Illinois University who have Ph.D.’s and Master Degrees in specialized fields and, in general, are of above average intelligence and have successfully managed their own website. This audience has completed many years of schooling and all are successful former students, about half have doctoral degrees, the remainder have master degrees. Their verbal and quantitative skills are above average having met the admission and completion requirements for graduate and doctoral programs. The potential learners are instructors with considerable knowledge about teaching and learning.

The try-out learners meet all the requirements of the target audience. All three try-out learners are faculty members in the College of Education & Professional Studies. One has a Master’s Degree, and the other two have Ph.D’s. All are female and one is an Assistant Professor, one is an Associate Professor, and one if a Full Professor.

According to the needs analysis the intended audience is interested in applying new technologies into their teaching repertoire and have successfully managed their own website. The target audience is expected to have intermediate HTML skills. All intended learners have an intermediate to advance skills with word processing programs. The learners have successfully managed their own website and nearly all know how to transfer HTML files to the web server using the WS-FTP program. Many of the intended learners have taken workshops on web page development that are routinely offered at EIU. The learners are familiar with completing online forms and all have submitted surveys by completing online forms and are familiar with the process as a submitter. All have taken statistics classes and are familiar with the concept of databases and spreadsheets and have analyzed data as part of their former studies in higher education.
III. Information about Try-Out Learners

Try-out Learner #1

Name: Mary Greenlaw
Nationality: American
Age: 53
Sex: Female
Status: Associate Professor
Highest Degree: Ph.D.
College: College of Education & Professional Studies
Eastern Illinois University

Test Time: Thursday - December 4, 2003 from 1:00pm – 2:50pm

Test Environment: Faculty member’s office.
The test was carried out in Dr. Greenlaw’s office. This was near the end of the semester and a very busy time for faculty. The environment was authentic as most faculty members will be learning this self-instructional material in their offices. There were stacks of papers and projects waiting to be graded. Dr. Greenlaw had access to a computer with Windows 98 and Internet access. We were interrupted 4 times throughout the testing period.

Materials: Entry Skills Assessment, Pre-test, Instructional Material, Post-test, and the Instructional Assessment questionnaire were given to the try-out learner as a package. An answer sheet to the Pre-test and Post-test with screenshots of the practice database were available to the observer (Tom Grissom). For the sake of turn around time for obtaining a new MySQL account the learner was provided with a practice account cfabc3 and the learner did not submit for a new MySQL account from Client Services.

Pre-test Score: 1/15
Post-Test Score: 15/15
Observations:
General Overview
Dr. Greenlaw was interrupted a couple of times by phone calls during the period of testing. Dr. Greenlaw made several comments as she went through the instructional material. The following are a few example quotes:
“I have been wanting to do this.”
“You are giving me a lot of ideas.”
“I was thinking about practicum applications, I can think of a lot of others.”
“So this is where I can go to get a new account?”
“Yes, this is really good, it has a lot of uses.”
“Hey, I did it!”
“When will the other units be finished, I would like to see them when you get done with them.”

Detailed Observations:
The following is the time log and notes for the observations for Dr. Greenlaw’s try-out learner session:
1:00pm I arrive in Dr. Greenlaw’s office and we discuss what we are about to do. I go over the packet of materials with her and explain the process we are about to do.
1:05pm Dr. Greenlaw begins the Entry Skills Assessment
1:07pm Dr. Greenlaw finishes the Entry Skills Assessment and turns it in to me.
1:08pm begins the Pre-test. After looking over the Pre-test for a couple of minutes she says she does not know where to begin. (The Pre-test and Post-test are performance tests)
1:10pm finishes pre-test and turns it in to me, she cannot complete the pre-test she answers the first question with Information Technology Services after looking on her wall for a flyer that ITS puts out but she cannot specifically name Client Services.
1:11pm begins Instructional Material – starts Overview section.
1:14pm finishes Overview section and begins Section 1 nods her head in agreement as she reads. Makes the comment “So this is where I can go to get a new account?”
1:18pm finishes Section 1 and begins Section 2 (p. 6)
1:20pm makes the comments “You are giving me a lot of ideas.”
“I wonder where you came up with that analogy” “Harvesting apples, that’s good.” “I was thinking about practicum applications, I can think of a lot of others.”
1:22pm Interruption by phone, some committee business
1:24pm Hangs up phone returns to Section 2 reading
1:33pm Ends Section 2 reading and begins Section 3 (p.10)
1:38pm smiles and comments “I didn’t know there was such a thing as TINYINT.”
1:43pm ends Section 3 and begins Section 4 (p. 14)
1:45pm turns around to her computer and types in the web address for phpMyAdmin
The screen is a little different because she is using Windows 98 but she has no problems, she did not act like she even noticed. She logins in using the practice account I supplied cfabc3 to MySQL successfully.
1:46pm begins p. 16 – looks at her screen and the example screen given.
1:47pm Successfully created her first MySQL database – looks at screen and compares to the screenshot in the instructions.
1:48pm Interrupted by another faculty member- faculty member asks her “Are you learning?”  Mary replies “Yes, this is really good, it has a lot of uses.”
1:49pm gets back to work and creates her first table, table1
1:52pm p.18, begins typing field names in phpMyAdmin – uses pull down menu successfully, no help needed.  Asks “Do I need to put the word default in or just leave it blank?”  I told her to leave it blank.
1:55pm types in http:// and clicks Go.
1:56pm she is successful in adding the fields and she compares her screen to that in the screenshot.  She comments, “Looks good.”
1:57pm  p. 21 Compares her screen to the instructions, types in the information except she types in her name in place of Tom Grissom which is perfectly acceptable.  I think she did this because she had been substituting her MySQL account name in place of mine throughout the previous set of instructions.
1:59pm Interruption from student turning in an assignment. Goes right back to work.  She notices she made a typo when entering the data and she clicks on the Edit button all by herself and makes the correction without reading the instructions (demonstrates how intuitive phpMyAdmin really is)
2:01pm p.23 starts entering her own data, looks around and thinks about it for a minute and then locates a paper with webpages and she begins typing in the information.  Clicks the Insert tab again and enters more data.
2:09pm  Clicks on the Export tab and fills out this screen, she needed to scroll down a little to see all the information but she did so on her own with no problems.
2:10pm clicks on the Save As dialog box and then saves it and then opens it in Excel.  The DATE field came up with ##### but she knew to expand the column width to display the data correctly.  Asks a question, “So if I setup a database and collect the information I can export it to Excel?”  Told her yes and that this is what I did with the online faculty technology use surveys to analyze the data.  Shakes her head in agreement.
2:15pm Clicks on Home button (p.26)  types in the name for the practice database, does so correctly, she started to type in upper case letters but corrected herself.  Looks around her office and finds a directory, begins typing in the information in her practice database successfully.
2:20pm adds three more records successfully, she goes ahead to the Export tab on her own and exports the practice database to Excel successfully.
2:21pm  p. 27 makes a comment about how to logout and sees it in the instructions (I may want to bold this sentence so it is easier to see)
2:23pm Finishes the Instructional Material and says “Hey, I did it!”
2:24pm begins Post-test  answers first two questions correctly and begins the performance part and creates a database adds a table and adds the 7 fields to the database all correctly.
2:27pm begins inserting the data for the Post-test.
2:28pm Interruption – phone call 10 minutes
2:38pm returns to Post-test, asks about a different DATE format eager to learn more
2:45pm completes performance Post-test successfully, she successfully did every part correctly.
2:46pm  begins Instructional Assessment instrument.  Says she really does not have any comments or suggestions for improvement.  It was all clear to her, the only thing she would change is the screenshot on p.23 so the wording is on the same page as the
screenshot. Seemed very pleased with the experience. She asks “When are you going to get the other two units completed?” We went on to discuss some of the potential uses for collecting data online, she came up with many ideas of her own and said this is something she has been wanting to do for a long time.

2:50pm End of Try-out Learner session. I thanked her for her time and leave.

Try-out Learner #2

Name: Pat Fewell
Nationality: American
Age: 50
Sex: Female
Status: Full Professor
Highest Degree: Ph.D.
College: College of Education & Professional Studies
        Eastern Illinois University

Test Time: Friday - December 5, 2003 from 11:00pm – 12:15pm

Test Environment: Faculty Member’s office.
The test was carried out in Dr. Fewell’s office. This was near the end of the semester and a very busy time for faculty. The environment was authentic as most faculty members will be learning this self-instructional material in their offices. There were stacks of papers and projects waiting to be graded. Dr. Fewell had access to a newer computer with Windows XP and Internet access. We were interrupted 3 times throughout the testing period with phone calls.

Materials: Entry Skills Assessment, Pre-test, Instructional Material, Post-test, and the Instructional Assessment questionnaire were given to the try-out learner as a package. An answer sheet to the Pre-test and Post-test with screenshots of the practice database were available to the observer (Tom Grissom). For the sake of turn around time for obtaining a new MySQL account the learner was provided with a practice account cfabc4 and the learner did not submit for a new MySQL account from Client Services.

Pre-test Score: 2/15

Post-Test Score: 15/15

Observations:
General Overview
Dr. Fewell was interrupted 4 times by phone calls during the period of testing. She tried working through the material as she talked on the phone. Dr. Fewell made several
comments as she went through the instructional material. The following are a few example quotes:
“Geesh, there are a lot of choices here.”
“You may want to put a note on p.18 that lets us know that the screenshot for this table is coming up on the next page.”
“Cool, alright”
“Done! Looks good.”
“When are you going to get the other two units completed?”

Detailed Observations:
The following is the time log and notes for the observations for Dr. Fewell’s try-out learner session:
11:00am I arrive in Dr. Fewell’s office and we discuss what we are about to do. I go over the packet of materials with her and explain the process we are about to do.
11:06am Dr. Fewell begins the Entry Skills Assessment
1:08am Dr. Fewell finishes the Entry Skills Assessment and turns it in to me.
1:08am Dr Fewell beings the Pre-test.
11:11am she finishes the Pre-test says she cannot do the MySQL database part because she never has used MySQL.
11:12am begins Instructional Materials. Begins Overview
11:14am begins Section 1 (she is a very fast reader)
11:16am asks a question, “Who administers the MySQL Server?” I told her Vicki Phillips
11:17am asks “Do you prefer Internet Explorer or Netscape?” I told her it did not matter but I prefer Internet Explorer.
11:18am begins Section 2 (p. 6) shakes her head up and down in agreement with what she is reading or that she understands what she is reading.
11:19am begins p. 7 asks “How long has PHP code been around?” I told her around 5 years or so and that they are on Version 4.
11:20am begins p. 9
11:21am begins Section 3 (p.10)
11:22am begins p. 11 shakes her head up and down raises her eyebrow, comments “Also a CHAR field could be used for a yes or no answer too”
11:24am begins p. 12
11:25am completes Section 3 begins Section 4 (p. 14)
11:26am goes to her computer and types in the phpMyAdmin web address and successfully logs in with the practice account I provided cfabc3
11:27am begins p.16
11:28am begins p. 17
11:29am successfully creates a new database and adds table1
11:29am begins p. 18
11:30am says “Whoa, CaSe SenSiTive that looks weird” also says “In other words you want us to use an underscore instead of a space.”
11:31am (p.18) asks “So we are not going to use anything on this right side?” told her no, leave everything blank except for what is illustrated in the screenshot. Started filling in fields comments “You may want to put a note on p.18 that lets us know that the
screenshot for this table is coming up on the next page.” Makes another comment, “Geesh, there are a lot of choices here.”
11:34am begins p. 20 comments “OK, that looks the same.”
11:35am she is typing in the example data and asks “Do I put my name here or yours?”
told her it did not matter.
11:36am begins p. 23 asks “What does the Empty and Drop tabs do?”
11:38am begins p. 24 She pressed the Enter key which is the same thing as clicking the go button, she is reading very fast. She realizes her mistake and clicked on the Edit button to get back to the screen she was at.
11:40am comments “It would be good if I paid attention to what I was doing.”
11:41am asks “Why did it take me to the SQL screen?” She clicked on the Insert tab and was back on task.
11:42am begins Export (p. 25)
11:44am comments “Might want to mention to close the MS Excel once you are successful exporting the data.”
11:44am Interruption – phone
11:46am end of phone conversation, “Sorry, about that”
comments, “Now I have to go back and re-read where I was at.”
11:47am asks “Do you have a name you want me to call this database?” I told her no, just make one up. She looks back through the pages to see how to make a table, looks a bit confused as she shuffles through the pages trying to find something. (Might be helpful here to put a review with page numbers of each objective so the learner can quickly go back to the correct objective without having to fumble through several pages.)
she makes up her own field names and lengths, starts to use a question mark as part of a field name, I correct her here and say that the ? may not work because Unix does not like certain special characters. (Need to consider putting a section about proper database names and field names to remind learners about this.)
11:52am Finishes Section 4 begins Conclusion to Unit 1
asks “Do I get to keep these instructions?” told her yes comments “Oh good”
11:53am begins Post-test
11:54am logs in to phpMyAdmin successfully
11:55am counts the fields to the practice form comments “Oh, good it is numbered, hello?”
11:56am Interruption – phone rings, she answers continues working
11:58am hangs up phone, continues working, names the fields of proper type and length, comments “You may want to mention something about special characters in field names.”
12:00pm phone rings – continues working
12:01pm hangs up – continues working on Post-test
12:07pm Finishes Post-test says “Cool, alright” and starts Instructional Assessment questionnaire
12:09pm finishes questionnaire, says “Done! Looks good.”
12:10pm We have a brief discussion of the material and talk about suggested improvements that she mentioned on the questionnaire also ask when the other two units would be done.
12:15pm I thank her for her time and leave.
Try-out Learner #3

Name: Teresa Freking
Nationality: American
Age: 37
Sex: Female
Status: Assistant Professor
Highest Degree: M.S.
College: College of Education & Professional Studies
Eastern Illinois University

Test Time: Friday - December 5, 2003 from 2:30pm – 4:00pm

Test Environment: Faculty Member’s office.
The test was carried out in Ms. Freking’s office. This was near the end of the semester and a very busy time for faculty. The environment was authentic as most faculty members will be learning this self-instructional material in their offices. Ms. Freking’s office was neat with only a few stacks of papers waiting to be graded. There were a lot of students coming and going down the hallway throughout the testing period. Ms. Freking had access to a computer with Windows 2000 and Internet access. We were interrupted a couple of times throughout the testing period.

Materials: Entry Skills Assessment, Pre-test, Instructional Material, Post-test, and the Instructional Assessment questionnaire were given to the try-out learner as a package. An answer sheet to the Pre-test and Post-test with screenshots of the practice database were available to the observer (Tom Grissom). For the sake of turn around time for obtaining a new MySQL account the learner was provided with a practice account cfabc5 and the learner did not submit for a new MySQL account from Client Services.

Pre-test Score: 1/15
Post-Test Score: 15/15
Observations:
General Overview
Ms. Freking was interrupted one time by phone call and one time by a faculty member during the period of testing. She tried working through the material as she talked on the phone. Ms. Freking made several comments as she went through the instructional material. The following are a few example quotes:
“I really do need to know how to do this, so I am glad.”
“What if they write more than 255 characters of stuff?”
“Can I keep this?”

Detailed Observations:
The following is the time log and notes for the observations for Ms. Freking’s try-out learner session:
2:30pm I arrive in Ms. Freking’s office and we discuss what we are about to do. I go over the packet of materials with her and explain the process we are about to do.
2:39pm Ms. Freking begins the Entry Skills Assessment
2:41pm end of Entry Skills assessment she turns it in to me and begins Pre-test.
2:43 Interruption – faculty member walks in 2 minute discussion about student teaching
2:45pm she goes back to work on the Pre-test.
2:46pm she says she cannot do any more on the Pre-test turns in Pre-test to me
2:46pm Begins Instructional Material p.1
2:47pm comments “I really do need to know how to do this, so I am glad.”
Ms. Freking reads everything very thoroughly, uses her pencil to follow the words as she reads.
2:49pm begins Section 1 (p. 3)
2:50pm (p. 4) Applies for an account - I give her the practice account of cfabc5 so we can do all of this material today without having to wait for Client Services to create an account
2:52pm (p. 6) Begins Section 2
2:53pm (p. 7)
2:55pm (p. 8)
2:55pm (p. 9) she goes through the graphic very methodically
2:56pm she gets up and closes her door due to outside noise in hallway, says she can’t concentrate. Goes on to p. 10 concentrating on the different types of fields.
3:01pm begins p. 12
3:03pm begins Self-quiz – writes the answers in the instructional material provided, she misses one on the self-quiz and goes back to review the CHAR field type that is the answer for the STATE field.
3:05pm begins Section 4 (p. 14)
3:06pm goes to her computer opens a browser, she does not type https and gets a page not found message, tries again same result. I told her to carefully look at the web address and she notices the https. (May want to give a better heads up to this, she never did get past the URL to the explanation about the https)
3:10pm begins p. 16
3:11pm creates her first MySQL database successfully
3:12pm begins p. 17 notices missing quote mark in the instructional material, I need to fix this typo.
3:13pm creates her first table successfully
3:16pm begins typing in field names and lengths
3:17pm clicks on Save button to save field names and lengths
3:18pm begins p. 20 hesitate clicking on the edit button because it says “If you click”
Clicks on Insert tab
3:19pm begins p.22
3:22pm begins p. 24 inserts more data
3:27pm Interruption – phone rings 1 minute interruption
3:29pm goes back to work
3:35pm finishes Section 4 begins Conclusion to Unit 1 (p. 29)
3:37pm begins Post-test asks “What if they write more than 255 characters of stuff?” I told her the information would be cut-off at 255 characters and anything after that would be lost. Continues working on Post-test – completes all questions successfully.
3:55pm finishes Post-test begins Instructional Assessment questionnaire
3:57pm finishes questionnaire – we discuss material and say she thinks she can create her own database but will need this instructional material to help her. Asks “Can I keep this?” I told her yes. She also wanted to know when the other units would be done.
4:00pm I thank her for her time and leave.

IV. Instructional Assessment Questionnaire

**********************************************************************
Adding Simple Database and Online Form Functionality to EIU Faculty Websites
Try-out Learner #1: Mary Greenlaw
Instructional Assessment – Unit 1

On a scale of 1 to 5, with 5 being of highest satisfaction and 1 being of lowest satisfaction, please rate the following:

1) Overall, this instruction met my expectations for learning how to create an online database.

5 4 3 2 1

2) Overall, after completing this instruction I am comfortable creating a new database from an example online form.

5 4 3 2 1

3) Overall, I found this material useful and relevant for my future needs to create an online form as part of my webpage.

5 4 3 2 1
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Try-out Learner #2: Pat Fewell

Instructional Assessment – Unit 1

On a scale of 1 to 5, with 5 being of highest satisfaction and 1 being of lowest satisfaction, please rate the following:

1) Overall, this instruction met my expectations for learning how to create an online database.

5  4  3  2  1

2) Overall, after completing this instruction I am comfortable creating a new database from an example online form.

5  4  3  2  1

3) Overall, I found this material useful and relevant for my future needs to create an online form as part of my webpage.

5  4  3  2  1

What portion of the instruction was least clear to you?
When having to flip back and forth between the pages.

What portion of the instruction did you enjoy most?
Actually putting data into the database.

What suggestions do you have for future improvement of this instruction?
When giving previous examples include page numbers – also verbage and screen capture need to be on the same page.

Other comments/suggestions?
None.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Try-out Learner #3: Teresa Freking

Instructional Assessment – Unit 1

On a scale of 1 to 5, with 5 being of highest satisfaction and 1 being of lowest satisfaction, please rate the following:

1) Overall, this instruction met my expectations for learning how to create an online database.
   5 4 3 2 1

2) Overall, after completing this instruction I am comfortable creating a new database from an example online form.
   5 4 3 2 1

3) Overall, I found this material useful and relevant for my future needs to create an online form as part of my webpage.
   5 4 3 2 1

What portion of the instruction was least clear to you?
The exporting part.

What portion of the instruction did you enjoy most?
Data Entry.

What suggestions do you have for future improvement of this instruction?
None.

Other comments/suggestions?
None.

Entry Skills Assessment Results

The results of the Entry Skills Assessment confirmed that all try-out learners met the pre-requisites required of this instruction. All three try-out learners scored a perfect eight out of eight points (8/8) on the Entry Skills Assessment making them ideal candidates for try-out learners.
V. Distribution of Scores on the Pre-test and Post-test

The Pre-test and Post test for the most part were “hands-on” activities designed to measure the proficiency of the learners to actually apply the concepts and procedures they learned from the instruction. Because the try-out learners did not have any experience with mySQL the Pre-test results reflected this. All learners successfully completed the Post-test with 100% proficiency and all were satisfied with the results of the instruction. Table 1 provides a summary of the Pre-test and Post-test results. Initials were used to identify the try-out learners for the purpose of this table to conserve space: MG=Mary Greenlaw, PF=Pat Fewell, and TF=Teresa Freking.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Organization</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2 1&lt;sup&gt;st&lt;/sup&gt; of 4 components</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>3 2&lt;sup&gt;nd&lt;/sup&gt; of 4 components</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>4 3&lt;sup&gt;rd&lt;/sup&gt; of 4 components</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>5 4&lt;sup&gt;th&lt;/sup&gt; of 4 components</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>6 Create database</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>7 Create table</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>8 Identify # of fields</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>9 Create fields</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>10 Add data</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>11 Edit data</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>12 Delete data</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>13 Export data</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>14 correct field type</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>15 correct field length</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Score (Out of 15 total)</strong></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

From the above results it is clear that this instruction was effective. All three try-out learners were successful in completing the Post-test tasks that were performance based and designed to measure the ability of the learners to successfully create and maintain a MySQL database.
VI. Analysis of the Data and Revision of the Instruction

Pre-test Analysis:
All three try-out learners got the first question correct. Only Pat Fewell got 1 of the 4 components correct regarding requirements for having an online form. All three learners could not go any further on the Pre-test when given a MySQL account. None of the learners knew what to do with the account and could not finish the remainder of the Pre-test. This seemed to frustrate try-out learner #2 and try-out learner #3 really took her time trying to know what to do, try-out learner #1 was very quick to accept that she did not know how to do the Pre-test and quickly moved to the instruction.

Instruction:
There were a few areas that could be improved upon analyzing the detailed notes recorded during the try-out learner phase of instructional design (See detailed observations above). The biggest thing that I noticed was with try-out learner #2 using a question mark ? for a field name, I explained to her that this is not a good idea because many special characters are reserved for system use by Unix servers and that if she used special characters in a database of field name it may cause problems later on. Another common observation of the three try-out learners was that all three were hesitant making up their own database and field names. Upon these two observations I have decided to add a section about naming database and field names and give the learners information about the dangers of using special characters in database and field names. This will be added on page 16 after discussing database names.

Try-out learner #2 asked about the Empty and Drop tabs. These are very dangerous because they can cause the user to lose all of their data. I will put a note in on page 22 explaining the dangers of these two tabs. I will also add a comment to ignore all the other fields when the learners are filling in the example illustrated in Figure 10, try-out learner #2 made the comment that there were a lot of fields to be filled out here, we will ignore all of them except what is illustrated in Figure 10.

Try-out learner #3 noticed I missed a quotation mark on page 17. I will correct this typo.

Try-out learner #3 was a bit confused on page 23 because it says “If you click on the Go button” I want the learner to click on the Go button so I will remove the words “If you” and just say “Make any edits as needed and click on the Go button…”

Try-out learner #3 also had trouble typing in the web address of phpMyAdmin, I will revise this paragraph and draw the learners attention to the https:// before I have the learner type in the web address to avoid confusion.

All three learners had difficulty following the wording from page 22 to 23 because the screen shot was on the next page. I will move the test that goes with Figure 15 on p. 23 to p. 24, the same page as Figure 15. This seemed to be the biggest complaint about all of the instruction. Try-out learners also had difficulty following the flow of p. 17 and p. 18, I will move break apart p. 18 so there is not so much information on the page and have it
flow into p. 19. Some of the text from p 18 will flow over to p. 19 and will allow for only one screenshot. This will cause the remainder of the pages to be renumbered but will make the instruction clearer to the learner and the screenshots will be on the appropriate pages.

The three try-out learners had three different operating systems, Windows 98, Windows 2000, and Windows XP. Some of the screenshots did not match up exactly with that on the try-out learners machines because of the different operating systems but this did not cause any of the try-out learners difficulty, they all adapted quite well and did not complain or make any comments about this. Some of the time the try-out learner had to use the scroll bar to see the rest of the screen as illustrated in the screenshots but again all three adjusted accordingly.

Two of the three try-out learners made comments about what they should call the practice database. I will give a suggested name of contact_information on p. 27 to take this decision out of the learners hands.

All three learners fumbled through the pages during the practice database looking for the screenshots for how to do a particular part. I will add a paragraph on p. 28 listing page numbers for the learners to reference back to if they do not know how to create a table for instance. This will be a little more convenient for the learner. This was suggested by try-out learner #2.

I will bold the text explaining how to log out of phpMyAdmin on p. 28 to make it clearer for the learner.

The learners made other comments throughout the try-out experience (see detailed observations) like asking how long has PHP been around? At this time adding material to address these questions is not deemed necessary.

These changes will cause for page renumbering in Section 4 and I will also revise the Table of Contents to reflect the changes.

**Post-test Analysis:**
All three of the try-out learners were successful in completing all parts of the Post-test and all three try-out learners were 100% proficient in answering all questions and performing all tasks correctly. The learners took the Post-test immediately after finishing the instruction and all the information was fresh in their minds.

**Instructors Answer Sheet – Appendix B for Project I**
The Pre-test and Post-test are performance test. Screenshots of a database similar to the one learners are asked to create is provided as a convenience to the instructor for grading assistance. A competent instructor will be able to grade the Pre-test and Post-test without the screenshots but this is a nice aide for the instructor.
**Instructional Assessment questionnaire:**
All three try-out learners ranked this instruction as 5 out of 5 regarding the usefulness of this instruction to the learners future needs of adding online forms to their faculty website. The learners did not provide much in the way of open ended comments but valuable information was gained from an interview at the conclusion of the questionnaire along with the detailed notes during the observation of the try-out learners. This material is technically complex and a lot of information for the learner to absorb but none complained about this being too much. I was a bit disappointed that I did not receive any written open-ended comments but this may have been due to the fact that I received a lot of information and comments during the actual observation of the instruction.

**Summary:**
Overall this project is judged to be highly effective instruction. All learners completed the Post-test with 100% proficiency. All learners asked about when future units would be available and commented that this was useful to their needs. This was a very busy time of year for the try-out learners and all were diligent try-out learners. There were several interruptions during the try-out period but this is the same type of environment that the learners will be using this instruction in so this really was an authentic assessment of the learning experience.
Appendix A
for Project I
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Entry Skills Assessment
Please answer the following:

1. Information in a database can be ________?
   a. viewed only
   b. viewed and changed
   c. viewed, changed, and printed

2. Have you ever used an online form to submit data using the Internet?
   a. yes
   b. no

3. Do you know how to open a file in Microsoft Excel?
   a. Yes
   b. No

4. Do you know how to tell the difference between a character and a number field in a database?
   a. Yes
   b. No

5. Do you currently have and manage your own webpage?
   a. Yes
   b. No

6. In your own words explain the difference between a database table, a database field, and a database record.

7. Databases can contain fields that can be of different types: ___ True ___False

8. Have you ever used an online database to do research at the Library?
   a. Yes
   b. No
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Pre – Test
This is a performance test, learners will need a computer with Internet access and a MySQL account that has been provided. Please answer the following:

What organization on campus would you go to get a HTML and MySQL database account?
____________________________

List and describe the four components necessary to process an online form:
__________________________________________________
__________________________________________________
___________________________________________________
___________________________________________________

Below is an example of a paper-based form that we would like to put into an online format. You have been provided with the necessary MySQL account to create the database structure required to store the information requested from the example form below. You are to create a MySQL database with the appropriate fields of proper type and length that will store the data that will be processed from the example form below and stored into an online database. This exercise should take approximately 20 minutes to complete.

Example Form:
***********************************************************************
1. Date Completed: (YYYY-MM-DD): _______________
2. Last Name: ______________________
3. First Name: ______________________
4. What state do you live in (two letter abbreviation)? __
5. Number of years employed in your current job (whole number): __
6. What do you like most about your current job? ______________________________
   _______________________________________________________________________
7. What do you like least about your current job? ______________________________
   _______________________________________________________________________
***********************************************************************/
Now that you have created the database please follow the instructions below to add some data to the database.

Please add THREE records to the database with the data listed below from three example forms: (data to be entered is in **bold text**):

Record #1
1. Date Completed: (YYYY-MM-DD): **2003-10-15**
2. Last Name: **Grissom**
3. First Name: **Tom**
4. What state do you live in (two letter abbreviation)? **IL**
5. Number of years employed in your current job (whole number): **7**
6. What do you like most about your current job? **I like the variety if work.**
7. What do you like least about your current job? **I do not like the long hours.**

Record #2
1. Date Completed: (YYYY-MM-DD): **2003-10-14**
2. Last Name: **Mouse**
3. First Name: **Mickey**
4. What state do you live in (two letter abbreviation)? **FL**
5. Number of years employed in your current job (whole number): **67**
6. What do you like most about your current job? **I like the working with children.**
7. What do you like least about your current job? **I do not like the heavy lifting required of this position.**

Record #3
1. Date Completed: (YYYY-MM-DD): **2003-10-20**
2. Last Name: **Jones**
3. First Name: **Charlie**
4. What state do you live in (two letter abbreviation)? **IN**
5. Number of years employed in your current job (whole number): **18**
6. What do you like most about your current job? **I like the pay.**
7. What do you like least about your current job? **I do not like working weekends.**
Edit record #1 and change the first name from Tom to **Donald** and the last name from Grissom to **Duck**. Change the State field from IL to **CA**, change number of years employed from 7 to **55**.

Delete the Charlie Jones Record.

Export the data in MS Excel CSV format to a file on the hard drive called: **c:\jobs.csv**

What field type did you select for question #6 of the example form?
   a) tinyint
   b) char
   c) varchar
   d) date

What field length did you select for question #4 of the example form? (SO 4.3)
   e) 80
   f) 50
   g) 2
   h) 8

End of Pre-test.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Post – Test
This is a performance test, learners will need a computer with Internet access and a MySQL account that has been provided. Please answer the following:

What organization on campus would you go to get a HTML and MySQL database account?
_____________________________________

List and describe the four components necessary to process an online form:
_____________________________________
_____________________________________
_____________________________________
_____________________________________

Below is an example of a paper-based form that we would like to put into an online format. You have been provided with the necessary MySQL account to create the database structure required to store the information requested from the example form below. You are to create a database with the appropriate fields of proper type and length that will store the data that will be processed from an online form and stored into an online database. This exercise should take approximately 20 minutes to complete.

Example Form:
***********************************************************************
1. Date Completed: (YYYY-MM-DD): _______________

2. Last Name: ______________________

3. First Name: ______________________

4. What state do you live in (two letter abbreviation)? __

5. Number of years employed in your current job (whole number): __

6. What do you like most about your current job? ______________________________
   _______________________________________________________________________

7. What do you like least about your current job? ______________________________
   _______________________________________________________________________
***********************************************************************
Now that you have created the database please follow the instructions below to add some
data to the database.

Please add THREE records to the database with the data listed below from three example
forms: (data to be entered is in **bold text**):

Record #1
1. Date Completed: (YYYY-MM-DD): **2003-10-15**
2. Last Name: **Grissom**
3. First Name: **Tom**
4. What state do you live in (two letter abbreviation)? **IL**
5. Number of years employed in your current job (whole number): **7**
6. What do you like most about your current job? **I like the variety if work.**
7. What do you like least about your current job? **I do not like the long hours.**

Record #2
1. Date Completed: (YYYY-MM-DD): **2003-10-14**
2. Last Name: **Mouse**
3. First Name: **Mickey**
4. What state do you live in (two letter abbreviation)? **FL**
5. Number of years employed in your current job (whole number): **67**
6. What do you like most about your current job? **I like the working with children.**
7. What do you like least about your current job? **I do not like the heavy lifting required of this position.**

Record #3
1. Date Completed: (YYYY-MM-DD): **2003-10-20**
2. Last Name: **Jones**
3. First Name: **Charlie**
4. What state do you live in (two letter abbreviation)? **IN**
5. Number of years employed in your current job (whole number): **18**
6. What do you like most about your current job? **I like the pay.**
7. What do you like least about your current job? **I do not like working weekends.**
Edit record #1 and change the first name from Tom to Donald and the last name from Grissom to Duck. Change the State field from IL to CA, change number of years employed from 7 to 55.

Delete the Charlie Jones Record.

Export the data in MS Excel CSV format to a file on the hard drive called: c:\jobs.csv

What field type did you select for question #6 of the example form?
   i) tinyint
   j) char
   k) varchar
   l) date

What field length did you select for question #4 of the example form? (SO 4.3)
   m) 80
   n) 50
   o) 2
   p) 8

End of Post-test.
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Instructional Assessment – Unit 1

On a scale of 1 to 5, with 5 being of highest satisfaction and 1 being of lowest satisfaction, please rate the following:

1) Overall, this instruction met my expectations for learning how to create an online database.
   5 4 3 2 1

2) Overall, after completing this instruction I am comfortable creating a new database from an example online form.
   5 4 3 2 1

3) Overall, I found this material useful and relevant for my future needs to create an online form as part of my webpage.
   5 4 3 2 1

What portion of the instruction was least clear to you?

What portion of the instruction did you enjoy most?

What suggestions do you have for future improvement of this instruction?

Other comments/suggestions?
Appendix B
for Project I

Answer Sheets
For Instructor Use
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Pre – Test
This is a performance test, learners will need a computer with Internet access and a MySQL account that has been provided. Please answer the following:

What organization on campus would you go to get a HTML and MySQL database account?
**Client Services- Information Technology Services**

List and describe the four components necessary to process an online form:

- **Web Server**
- **HTML Web Page**
- **MySQL Database**
- **PHP Scripting Language**

Below is an example of a paper-based form that we would like to put into an online format. You have been provided with the necessary MySQL account to create the database structure required to store the information requested from the example form below. You are to create a MySQL database with the appropriate fields of proper type and length that will store the data that will be processed from the example form below and stored into an online database. This exercise should take approximately 20 minutes to complete.

Example Form:
***********************************************************************
1. Date Completed: (YYYY-MM-DD): _______________
2. Last Name: ______________________
3. First Name: ______________________
4. What state do you live in (two letter abbreviation)? __
5. Number of years employed in your current job (whole number): __
6. What do you like most about your current job? ______________________________
   ______________________________________________________________________
7. What do you like least about your current job? ______________________________
   ______________________________________________________________________
***********************************************************************
Now that you have created the database please follow the instructions below to add some data to the database.

Please add THREE records to the database with the data listed below from three example forms: (data to be entered is in bold text):

Record #1
1. Date Completed: (YYYY-MM-DD): 2003-10-15
2. Last Name: Grissom
3. First Name: Tom
4. What state do you live in (two letter abbreviation)? IL
5. Number of years employed in your current job (whole number): 7
6. What do you like most about your current job? I like the variety if work.
7. What do you like least about your current job? I do not like the long hours.

Record #2
1. Date Completed: (YYYY-MM-MM-DD): 2003-10-14
2. Last Name: Mouse
3. First Name: Mickey
4. What state do you live in (two letter abbreviation)? FL
5. Number of years employed in your current job (whole number): 67
6. What do you like most about your current job? I like the working with children.
7. What do you like least about your current job? I do not like the heavy lifting required of this position.

Record #3
1. Date Completed: (YYYY-MM-MM-DD): 2003-10-20
2. Last Name: Jones
3. First Name: Charlie
4. What state do you live in (two letter abbreviation)? IN
5. Number of years employed in your current job (whole number): 18
6. What do you like most about your current job? I like the pay.
7. What do you like least about your current job? I do not like working weekends.
Edit record #1 and change the first name from Tom to Donald and the last name from Grissom to Duck. Change the State field from IL to CA, change number of years employed from 7 to 55.

Delete the Charlie Jones Record.

Export the data in MS Excel CSV format to a file on the hard drive called: c:\jobs.csv

What field type did you select for question #6 of the example form?
   a) tinyint
   b) char
   c) varchar
   d) date

What field length did you select for question #4 of the example form? (SO 4.3)
   e) 80
   f) 50
   g) 2
   h) 8

End of Pre-test.
Pre-test screenshots for instructor use:

<table>
<thead>
<tr>
<th>Database cfabc3_posttest running on localhost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table</strong></td>
</tr>
<tr>
<td>posttest</td>
</tr>
<tr>
<td>119 tables</td>
</tr>
</tbody>
</table>

- Print view
- Data Dictionary
- Database comment

Create new table on database cfabc3_posttest:
- Name:
- Fields:

- Edit PDF Pages
- Import doc/SOL Files
### Database cfabc2_posttest - Table posttest running on localhost

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Attributes</th>
<th>Null</th>
<th>Default</th>
<th>Extra</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>last_name</td>
<td>varchar(75)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>Change, Drop Primary Index, Unique, Fulltext</td>
</tr>
<tr>
<td>first_name</td>
<td>varchar(75)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>Change, Drop Primary Index, Unique, Fulltext</td>
</tr>
<tr>
<td>student_id</td>
<td>char(7)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>Change, Drop Primary Index, Unique, Fulltext</td>
</tr>
<tr>
<td>post_in_job</td>
<td>tinyint(2)</td>
<td>No</td>
<td></td>
<td>0</td>
<td></td>
<td>Change, Drop Primary Index, Unique, Fulltext</td>
</tr>
<tr>
<td>like_most</td>
<td>varchar(255)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>Change, Drop Primary Index, Unique, Fulltext</td>
</tr>
<tr>
<td>like_least</td>
<td>varchar(255)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>Change, Drop Primary Index, Unique, Fulltext</td>
</tr>
<tr>
<td>date</td>
<td>date</td>
<td>No</td>
<td></td>
<td>2000-01-01 00:00:00</td>
<td></td>
<td>Change, Drop Primary Index, Unique, Fulltext</td>
</tr>
</tbody>
</table>

#### Indexes (Documentation)
No indexes defined.

#### Space usage:
- Data: 36 Bytes
- Index: 1,024 Bytes
- Total: 1,060 Bytes

#### Row Statistics
- Statements: Data: 1
- Rows: 1
- Row length: 50

### Query Window

**Run SQL queries on database cfabc2_posttest [Documentation]**

Insert:

```
SELECT * FROM posttest WHERE 1
```

Show this query here again.
### Database cfabc3_posttest - Table posttest running on localhost

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Function</th>
<th>Null</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>last_name</td>
<td>varchar(75)</td>
<td></td>
<td></td>
<td>Mouse</td>
</tr>
<tr>
<td>first_name</td>
<td>varchar(15)</td>
<td></td>
<td></td>
<td>Mickey</td>
</tr>
<tr>
<td>state_ine</td>
<td>char(2)</td>
<td></td>
<td></td>
<td>FL</td>
</tr>
<tr>
<td>years_web</td>
<td>tinyint(2)</td>
<td></td>
<td></td>
<td>67</td>
</tr>
<tr>
<td>like_most</td>
<td>varchar(255)</td>
<td></td>
<td></td>
<td>I like working with children</td>
</tr>
<tr>
<td>like_least</td>
<td>varchar(255)</td>
<td></td>
<td></td>
<td>I do not like the heavy lifting required of this position</td>
</tr>
<tr>
<td>date</td>
<td>date</td>
<td></td>
<td></td>
<td>2003-10-14</td>
</tr>
</tbody>
</table>
### Instructor Answer Sheet

#### Database cfabc2_posttest - Table posttest running on localhost

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Function</th>
<th>Null</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>last_name</td>
<td>varchar(255)</td>
<td></td>
<td></td>
<td>Duck</td>
</tr>
<tr>
<td>first_name</td>
<td>varchar(19)</td>
<td></td>
<td></td>
<td>Donald</td>
</tr>
<tr>
<td>state_iva</td>
<td>char(2)</td>
<td></td>
<td></td>
<td>CA</td>
</tr>
<tr>
<td>years_in</td>
<td>tinyint(2)</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>like_most</td>
<td>varchar(255)</td>
<td></td>
<td></td>
<td>I like the variety of work.</td>
</tr>
<tr>
<td>like_least</td>
<td>varchar(255)</td>
<td></td>
<td></td>
<td>I do not like the long hours.</td>
</tr>
<tr>
<td>date</td>
<td>date</td>
<td></td>
<td></td>
<td>2003-10-15</td>
</tr>
</tbody>
</table>

- Save
- Or
- Insert as a new row
- And...
-插入另一行新行
- Go back to previous page
- Or
- Insert another new row
- Go
- Reset
### Database cfabc3_posttest - Table posttest running on localhost

**SQL-query:** Edit [Explain SQL] [Create PHP Code]

**SELECT**

**FROM** `posttest` **LIMIT** 0, 10

<table>
<thead>
<tr>
<th>last_name</th>
<th>first_name</th>
<th>state</th>
<th>years_in_job</th>
<th>like_most</th>
<th>like_least</th>
<th>date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duck</td>
<td>Donald</td>
<td>CA</td>
<td>66</td>
<td>I like the variety of work.</td>
<td>I do not like the long hours.</td>
<td>2009-10-15</td>
</tr>
<tr>
<td>Mouse</td>
<td>Mickey</td>
<td>FL</td>
<td>67</td>
<td>I like working with children.</td>
<td>I do not like the heavy lifting required of this position.</td>
<td>2000-10-14</td>
</tr>
</tbody>
</table>
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Post – Test
This is a performance test, learners will need a computer with Internet access and a MySQL account that has been provided. Please answer the following:

What organization on campus would you go to get a HTML and MySQL database account?
Client Services- Information Technology Services

List and describe the four components necessary to process an online form:
Web Server
HTML Web Page
MySQL Database
PHP Scripting Language

Below is an example of a paper-based form that we would like to put into an online format. You have been provided with the necessary MySQL account to create the database structure required to store the information requested from the example form below. You are to create a database with the appropriate fields of proper type and length that will store the data that will be processed from an online form and stored into an online database. This exercise should take approximately 20 minutes to complete.

Example Form:
***********************************************************************
1. Date Completed: (YYYY-MM-DD): _______________
2. Last Name: ______________________
3. First Name: ______________________
4. What state do you live in (two letter abbreviation)? __
5. Number of years employed in your current job (whole number): __
6. What do you like most about your current job? ______________________________
   ______________________________________________________________________
7. What do you like least about your current job? ______________________________
   ______________________________________________________________________
***********************************************************************
Now that you have created the database please follow the instructions below to add some data to the database.

Please add THREE records to the database with the data listed below from three example forms: (data to be entered is in **bold text**):

Record #1
1. Date Completed: (YYYY-MM-DD): **2003-10-15**
2. Last Name: **Grissom**
3. First Name: **Tom**
4. What state do you live in (two letter abbreviation)? **IL**
5. Number of years employed in your current job (whole number): **7**
6. What do you like most about your current job? **I like the variety if work.**
7. What do you like least about your current job? **I do not like the long hours.**

Record #2
1. Date Completed: (YYYY-MM-DD): **2003-10-14**
2. Last Name: **Mouse**
3. First Name: **Mickey**
4. What state do you live in (two letter abbreviation)? **FL**
5. Number of years employed in your current job (whole number): **67**
6. What do you like most about your current job? **I like the working with children.**
7. What do you like least about your current job? **I do not like the heavy lifting required of this position.**

Record #3
1. Date Completed: (YYYY-MM-DD): **2003-10-20**
2. Last Name: **Jones**
3. First Name: **Charlie**
4. What state do you live in (two letter abbreviation)? **IN**
5. Number of years employed in your current job (whole number): **18**
6. What do you like most about your current job? **I like the pay.**
7. What do you like least about your current job? **I do not like working weekends.**
Edit record #1 and change the first name from Tom to **Donald** and the last name from Grissom to **Duck**. Change the State field from IL to **CA**, change number of years employed from 7 to **55**.

Delete the Charlie Jones Record.

Export the data in MS Excel CSV format to a file on the hard drive called: `c:\jobs.csv`

What field type did you select for question #6 of the example form?

a) tinyint  
b) char  
c) **varchar**  
d) date

What field length did you select for question #4 of the example form? (SO 4.3)

a) 80  
b) 50  
c) **2**  
d) 8

End of Post-test.
Post-test screenshots for instructor use:

Database cfabc3_posttest running on localhost

- Print view
- Data Dictionary
- Database comment
- Create new/modify database cfabc3_posttest:
  - Name:
  - Fields:
- Export PDF Pages
- Import docSQL Files
<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Function</th>
<th>Null</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>last_name</td>
<td>varchar</td>
<td></td>
<td></td>
<td>Mickey</td>
</tr>
<tr>
<td>first_name</td>
<td>varchar</td>
<td></td>
<td></td>
<td>Mickey</td>
</tr>
<tr>
<td>state_in</td>
<td>char</td>
<td></td>
<td></td>
<td>FL</td>
</tr>
<tr>
<td>years_in</td>
<td>int</td>
<td></td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>like_most</td>
<td>varchar</td>
<td></td>
<td></td>
<td>I like working with children.</td>
</tr>
<tr>
<td>like_least</td>
<td>varchar</td>
<td></td>
<td></td>
<td>I do not like the heavy lifting required of this post.</td>
</tr>
<tr>
<td>date</td>
<td>date</td>
<td></td>
<td></td>
<td>2003-10-14</td>
</tr>
</tbody>
</table>
Database cfabc2_posttest - Table posttest running on localhost

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Function</th>
<th>Null</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>last_name</td>
<td>varchar(79)</td>
<td></td>
<td></td>
<td>Duck</td>
</tr>
<tr>
<td>first_name</td>
<td>varchar(19)</td>
<td></td>
<td></td>
<td>Donald</td>
</tr>
<tr>
<td>state_mva</td>
<td>char(2)</td>
<td></td>
<td></td>
<td>CA</td>
</tr>
<tr>
<td>years_in_web</td>
<td>tinyint(4)</td>
<td></td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>like_most</td>
<td>varchar(255)</td>
<td></td>
<td></td>
<td>I like the variety of work.</td>
</tr>
<tr>
<td>like_least</td>
<td>varchar(255)</td>
<td></td>
<td></td>
<td>I do not like the long hours.</td>
</tr>
<tr>
<td>date</td>
<td>date</td>
<td></td>
<td></td>
<td>2003-10-15</td>
</tr>
</tbody>
</table>

Select the action:
- Save
- Insert as a new row
- Go back to previous page
- Insert another new row
### Database cfabc2_posttest - Table posttest running on localhost

Showing rows 9 - 12 (total, query took 0.0013 sec)

**SQL-query** (Edit | Explain SQL | Create PHP Code)

```
SELECT * FROM posttest LIMIT 30
```
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Project J

Cost Analysis
Project J

CIMT 620
Tom Grissom
December 6, 2003

Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Cost Analysis

<table>
<thead>
<tr>
<th>Project</th>
<th>Time</th>
<th>Dollar Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours</td>
<td>Minutes</td>
</tr>
<tr>
<td>Proposal</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>C</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>28</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>F</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>G</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>H</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td>I</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>J</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
<td>120</td>
</tr>
</tbody>
</table>

Total Hours: 126.00

The instructional design rate was calculated as $25.00 per hour. This is a reasonable fee for this type of contract work. Corporations will pay similar rate or even higher rates than $25.00 per hour. Businesses also have to pay for fringe benefits of employees adding to overhead costs and therefore contract rates for consultants can sometimes be over $100.00 per hour for someone that really knows what they are doing.
The above hours in the table are an accurate reflection of the time it took me to complete the projects. This was very much a learning experience for me and therefore I had to learn along the way. I did go back and revise Project D, E, and F and this took an extra amount of time to get my pre-requisite analysis correct. Project D is absolutely critical in having the rest of the projects go well. If Project D is not correct then every project after D will not be correct. Because I was learning along the way this slowed me down until I was satisfied project D was correct. Project G and H also took a lot of time. I put a lot of effort into making the material clear and concise as well as attractive. I know I could save 20 to 30 hours off the completion time now that I have had this experience. Even with the experience I have gained, this project would take me close to 100 hours to complete.

In order for this instructional material to pay for itself this material will have to be delivered to 63 faculty members. If each faculty member takes about 2 hours to complete the material this is equivalent to 126 hours of instructional time in a one-on-one setting. This would be the equivalent savings for having someone sit down one-on-one and assist the faculty 63 different times. The other benefit of the self-instructional material is that it is available at any time, day or night, whenever faculty have the need to learn it. Faculty also will learn the material with their own accounts and be able to customize the application to meet their own needs.

There are, however, opportunity cost savings associated with faculty knowing how to create their own online forms. Time savings through efficiency gains and less paperwork by faculty should be considered in justifying the expense for creating this self-instructional material. If we can save 100 hours of faculty time due to increased efficiency of work by faculty we can save over $5000.00 in productivity of faculty if the going rate for faculty time is $50.00 per hour.

There is also a possibility for improvement of services to students as well as possible improvements for sharing information between students. The webliography example gives faculty a tool for students to review websites and share with fellow classmates. This can result in an improved learning environment for students.

It will be in the combination of savings due to not having to provide an instructor for faculty to learn this material, cost savings due to improved faculty productivity, and the benefits of an improved learning environment that the expense to produce this instructional material can be justified.

$$$

$$$
Best of all the instructional material created for this project is:

*Effective, Efficient, & Appealing*

Total Project Time: 126 Hours

Total Cost @ $25.00/hour = $3150.00
Adding Simple Database and Online Form Functionality to EIU Faculty Websites

Reflections about this Project
Reflections about this Project
Tom Grissom
December 6, 2003

I thought I would take a few moments and reflect back on this project while it is still fresh in my mind. First of all, this was a lot of work! It was a time consuming process because I was learning as I went along. I did make a few mistakes along the way and as they say, experience is the best teacher. I painstakingly went through Project D over and over because of the importance of it to the rest of the project. Project D directly impacted the writing of the objectives so once I finally got it right it was easy to write the objectives. It took me several tries to get my flowchart right as I did not fully understand the bottom up pre-requisite analysis the first few times I tried it. This seems so simple to me now but we only had one example to look at and I did not understand it at first.

Project G and H were also time consuming. A lot of mental energy went into the creative process of the instructional strategies and in the actual creation of the instructional material. Because I have spent so much time on this project, I wanted it to look good and be effective. It was rewarding to see all three try-out learners fail the Pre-test and have all three try-out learners pass the Post-test with perfect scores!

What I would change:
I would try to do a better job on all the assessment tools, particularly the Pre-test and Post-test. I would number my Pre-test and Post-test and organize it in a better way to score it when the try-out learners take the Pre-test and Post-test. I would arrange the questions so each one is worth one point. Because this was a performance test I was mainly worried what I wanted the learner to be able to do and grading/scoring of the tests was an after thought when I originally created them. If possible, I would do a “fake” run thru of the Pre-test and Post-test as the expert to make sure the test are reasonable since this was a performance test based on doing and will affect the writing of objectives. Because we were limited with revisions I could not go back and rewrite the Pre-test and Post-test. I would also redesign the instructional questionnaire to be a little more complete.

I took on a very technical topic and intend to develop this as three units of instruction in the future. This multi-unit approach complicated the design but it really forced me to think about the arrangement of the instruction. This multi-unit approach complicated Project G and took longer than a stand-alone unit would have.

In Project G I would do a better job of assessing the learner. I misunderstood the assessment part to be formative evaluation so it reads that way.

Overall, this is not a perfect project. It is however, I believe, more complete than it would have been had I not gone through the instructional design process. It was a lot of work but it was also enjoyable, especially now that it is done. The next project will take less time now that I understand the basic processes of instructional design.

☺

tg