Game Development for the Graphics Classroom

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https://goo.gl/iS7VYQ

Presentation outline

Current state of the gaming industry

Game Development careers

Software

Hardware

Available Resources

Curriculum and teaching considerations

A quick look at the video game industry

2322 development companies in 50 states

526 publishers in 44 states

65,000 employees directly employed by publishers and developers

$30.4 Billion spent in 2016

$24.5 billion spent on content

http://www.theesa.com/wp-content/uploads/2017/04/EF2017_FinalDigital.pdf

Growth by 2020

USA

Country data & commentary

Entertainment and Media market in USA† (US dollar millions)

Entertainment and Media in USA† ‡	2011	2012	2013	2014	2015p	2016	2017	2018	2019	2020	2015-20 CAGR
Business-to-business	75,528	77,143	80,901	83,377	85,575	88,194	90,816	93,538	96,519	99,795	3.122
Book publishing	34,263	34,521	35,055	36,516	37,814	39,091	40,323	41,464	42,583	43,689	2.930
Magazine publishing	30,384	30,579	30,496	30,509	30,534	30,563	30,622	30,670	30,697	30,747	0.139
Cinema	10,540	10,691	10,931	10,479	11,170	10,797	11,006	11,249	11,537	11,871	1.225
Internet access	78,885	91,307	102,793	115,591	128,455	140,689	152,404	163,698	173,076	181,680	7.179
Internet advertising	31,735	36,570	42,781	49,451	59,552	68,099	75,261	81,916	88,126	93,483	9.438
Newspaper publishing	33,591	33,297	32,885	32,105	31,287	30,469	29,630	28,736	27,858	26,999	-2.905
Out-of-home advertising	7,039	7,489	7,926	8,441	8,851	9,244	9,662	10,090	10,515	10,935	4.319
Radio	18,988	19,527	20,115	20,832	21,361	21,900	22,331	22,603	22,867	23,125	1.599
Music	14,873	14,892	14,914	14,903	15,183	15,549	16,078	16,736	17,369	18,041	3.510
TV advertising	59,967	64,795	65,554	68,784	69,902	73,003	74,674	76,538	78,526	81,746	3.180
TV and video	110,183	112,587	116,014	119,089	121,411	122,826	123,650	124,084	124,264	124,226	0.460
Video games	14,969	14,308	15,049	16,250	16,966	17,684	18,379	19,080	19,719	20,278	3.632
Total	520,946	547,707	575,415	606,326	638,060	668,107	694,836	720,404	743,657	766,615	3.739
Total without double counting	496,389	520,239	545,187	573,571	602,973	630,712	655,262	678,636	699,677	720,384	3.622

https://venturebeat.com/2016/06/08/the-u-s-and-global-game-industries-will-grow-a-healthy-amount-by-2020-pwc-forecasts/

Careers in Game Development

Creative director

Lead designer

Executive producer

Quality assurance

Lead quality assurance

Audio engineer

Video game producer

Senior software engineer

Game programmer

Lead programmer

Senior programmer

Technical director

Game artist

Game animator

https://www.internationalstudent.com/study-video-game-development/careers-in-video-game-development/

What software would I need?

Unity- Game Engine
https://unity3d.com/

Unreal Engine- Game Engine
https://www.unrealengine.com/en-US/what-is-unreal-engine-4

AutoDesk Media & Entertainment Suite- Animation and 3D modeling
https://www.autodesk.com/collections/media-entertainment/overview

Blender- Animation and 3D modeling
https://www.blender.org/

All of the above software is free for education

What kind of hardware do I need?

iMac or a PC

64-bit Intel® or AMD® multi-core processor

8 GB of RAM

(I currently run these products on 6 year old iMacs)

Here are a number of resources to get you started

https://unity3d.com/learn/tutorials

https://www.blender.org/support/tutorials/

https://docs.unrealengine.com/latest/INT/Videos/

https://store.unity.com/education

https://www.youtube.com/mayahowtos

https://www.youtube.com/user/3dsMaxHowTos

How do I justify courses in game development?

Skills shortages
- Technical Development

Current and Future Skills gaps
- Leadership and Management
- Sales and Marketing
- Business Skills

http://creativeskillset.org/creative_industries/games/about_the_industry

21st Century Skills

Learning Skills

- Critical Thinking
- Creative Thinking
- Collaborating
- Communicating

Literacy Skills

- Information Literacy
- Media Literacy
- Technology Literacy

Life Skills

- Flexibility
- Initiative
- Social Skills
- Productivity
- Leadership

https://k12.thoughtfullearning.com/FAQ/what-are-21st-century-skills
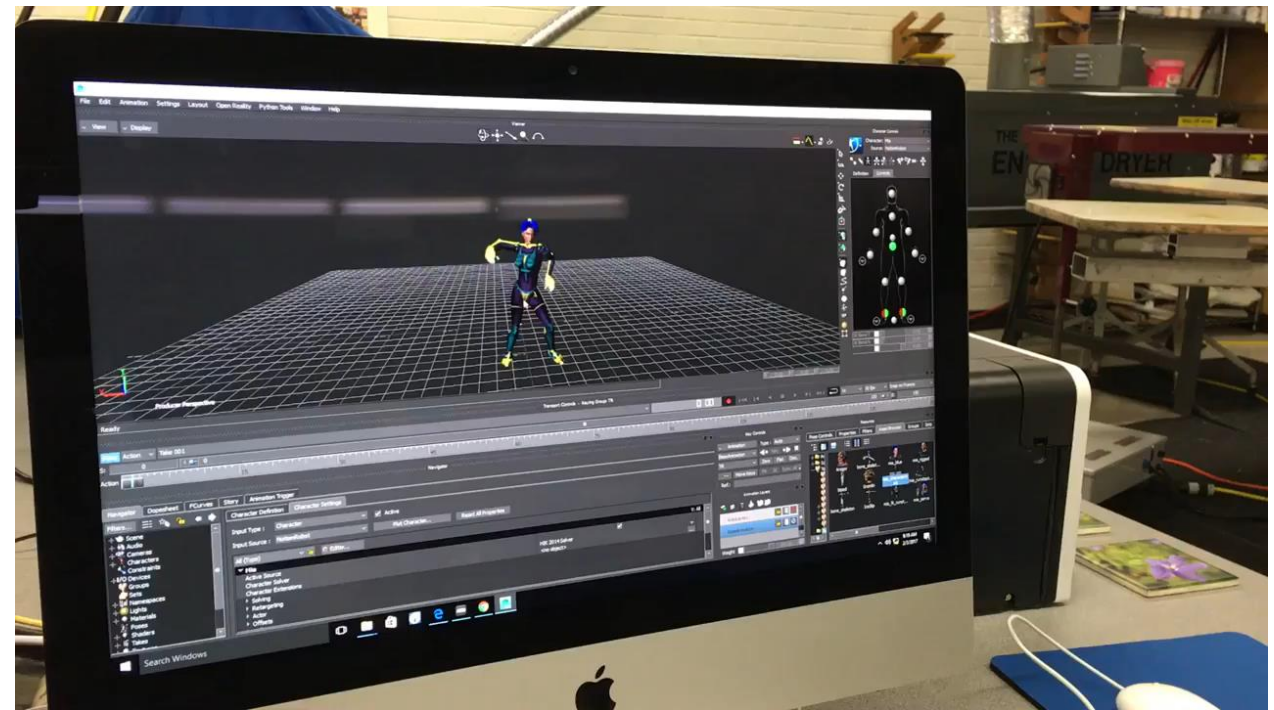
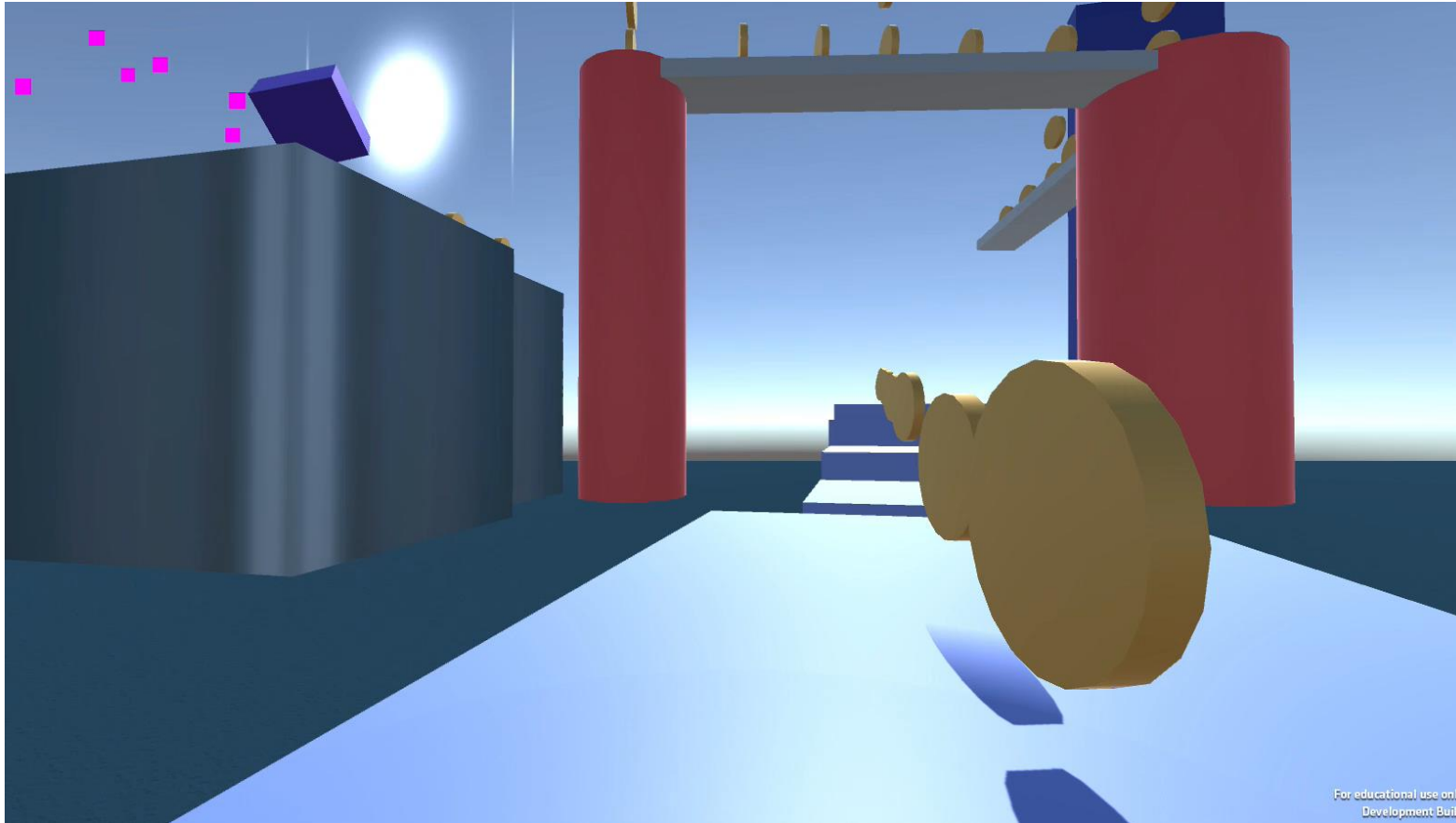# Don't just think of game development

Animation

Simulation

3D modeling

Programming

Multimedia art

A look at some game development student projects

What are the requirements of this project?

Work collaboratively

Develop a game design document

Develop a game flow chart

Generate all graphics and programming

Complete debugging and playtesting

Create a game trailer for their classmates to see

Present final game for critique and suggestions for improvement

What other courses are typically part of a game development curriculum?

Game Development/ Game Engine 1-4 courses

3D modeling 1-4 courses

Programming 1-4 courses

2D and 3D design courses

Computer Graphics 1-2 courses

Graphic Design 1-2 courses

Thanks!

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