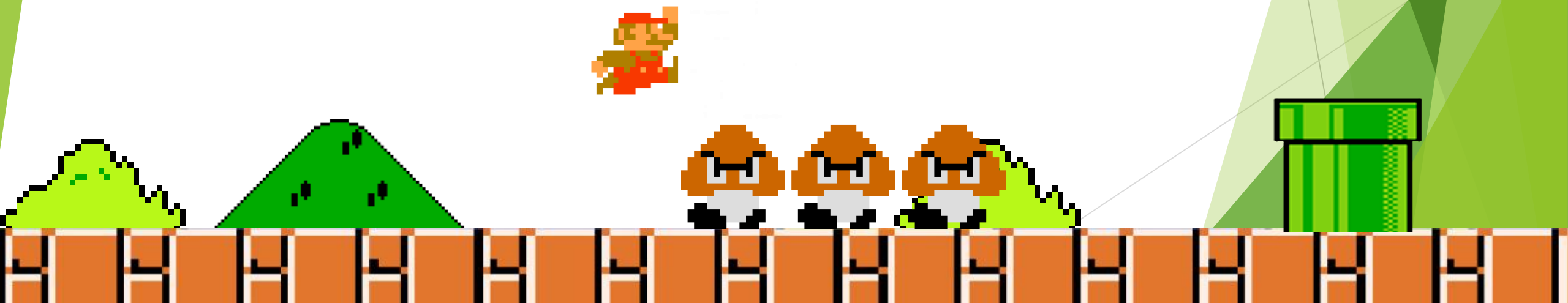


Digital Games

Lecture 25 - COMPSCI 111/111G SS 2019



What are Digital Games?

Commonly referred to as video games.

People who play video games are called gamers.

Rapidly growing industry.

- ▶ Generated close to USD 135 billion in revenue in 2018.

<https://www.gamesindustry.biz/articles/2018-12-18-global-games-market-value-rose-to-usd134-9bn-in-2018>



What do you need to play a digital game?

1. An input device
2. An output, typically video, device



Input Devices

Commonly used input devices:

- ▶ Keyboard and mouse
- ▶ Gamepad
- ▶ Touchscreen
- ▶ Motion controllers



Other input devices include steering wheels, joysticks, light guns, and rhythm game controllers



Output Devices

Screens

Speakers

Controllers

- ▶ Haptic feedback



Platforms

Personal computers

Consoles

- ▶ Home and handheld

Mobile devices

Arcade machines



Media

Cartridges

Optical discs

- ▶ CD, DVD, Blu-Ray, Proprietary

User-writable media

- ▶ Floppy discs, cassettes, memory cards

Digital downloads

- ▶ Steam, GOG, XBL, PSN



http://www.pcworld.com/article/197429/evolution_of_game_media.html

Genres - Platform Games

Primarily involve navigation through environments

- ▶ 2D or 3D
- ▶ Traversal from one platform to the next



Genres - Shooters

Combat oriented using ranged weapons

- ▶ First-person
- ▶ Third-person
- ▶ Light gun
- ▶ Shoot 'em ups



Genres - Fighting Games

Focus on close combat

- ▶ 2D or 3D

Usually involves 2 combatants

- ▶ Player vs. Player
- ▶ Player vs. AI
- ▶ AI vs. AI



Genres - Role Playing Games

Play the role of one or more characters immersed in a well-defined world

- ▶ Detailed lore
- ▶ Focus on narrative, exploration, and quest completion



Genres - Sports Games

Emulate real-world sports

- ▶ Degree of realism varies widely
- ▶ Realistic titles are referred to as sims
- ▶ Usually competitive - against AI or other gamers



Genres - Strategy

Outcome of combat determined by skilful thinking and planning

- ▶ Real-time vs. turn-based
- ▶ Strategy vs. tactics



Other Notable Genres

Massively multi-player online games

Casual games

Party games

Rhythm/music games

Puzzle games

Exergames

Educational games

Adventure games

Many games incorporate elements of more than one genre



The Game Industry

Developer

- ▶ Company specializing in video game development
- ▶ Multi-disciplinary - programming, art, testing etc.
- ▶ E.g. Crystal Dynamics, Rockstar Games, Rare, Naughty Dog



Publisher

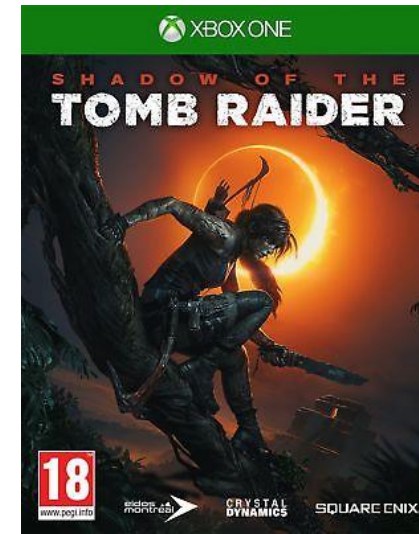
- ▶ Company responsible for funding, marketing, and distribution
- ▶ May also develop video games - internal team of developers referred to as a studio
- ▶ E.g. Electronic Arts, Activision Blizzard, Ubisoft, Take-Two Interactive



Business Models

“Packaged” games

- ▶ Purchase game for full access to its features
- ▶ Further monetary outlay is usually unnecessary



Subscription games

- ▶ Playing the game requires paying a subscription fee
- ▶ May require initial purchase as well
- ▶ “Pay-to-play”



Free-to-play games

- ▶ Core game is free
- ▶ Certain game content locked behind in-game currency that is difficult to obtain
- ▶ In-game currency can be purchased directly with real world money



Business Models

Microtransactions

- ▶ Ability to purchase in-game goods using real world money
- ▶ Often used in conjunction with free to play games - “Pay-to-win”



Downloadable content

- ▶ Additional content released for a game post-release
- ▶ Can include new modes, levels or aesthetic content



Gamer Demographics

Based on a study by the Entertainment Software Association (ESA) in the US in 2016:

- ▶ 59% of gamers are men. 41% are women
- ▶ The average age of a male gamer is 35. The average age of a female gamer is 44.
- ▶ The average gamer has been playing video games for 13 years.
- ▶ 63% of households have at least one gamer.

<http://essentialfacts.theesa.com/Essential-Facts-2016.pdf>



eSports

Organized video game competition

- ▶ Competitors typically professional
- ▶ Competitions are broadcast
- ▶ Prize money for winners

Genres associated with eSports:

- ▶ Real-time strategy games
- ▶ Fighting games
- ▶ First-person shooters
- ▶ Multiplayer online battle arena games



First established in South Korea

- ▶ Since 2000
- ▶ Now a global phenomenon with an audience of 226 million people in 2015
- ▶ <https://newzoo.com/insights/articles/global-esports-market-report-revenues-to-jump-to-463-million-in-2016-as-us-leads-the-way/>

Controversies

Negative behavioural effects:

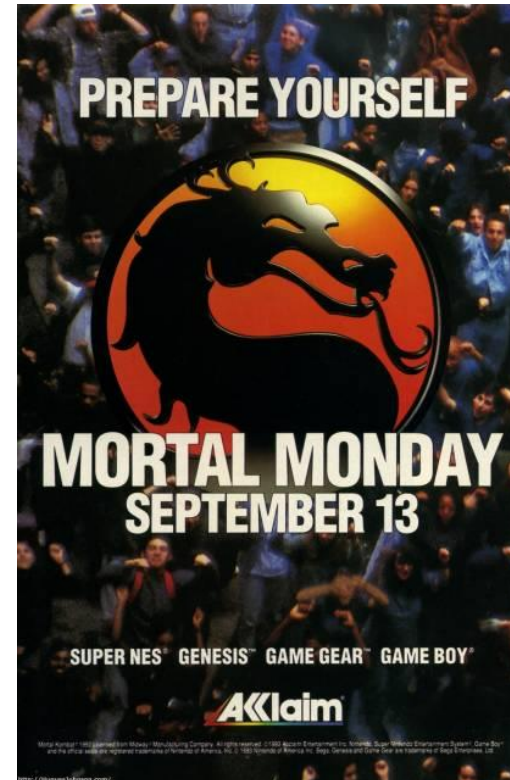
- ▶ Heightened aggression, lowered empathy
- ▶ Various studies performed - no consensus

Censorship and regulation

Portrayal of women and minorities

Online harassment

- ▶ Gamergate



Future

Virtual Reality

- ▶ Immerses user in a virtual environment
- ▶ User can look around, move and interact with environment
- ▶ Headsets for VR gaming recently released - Oculus Rift, HTC Vive



Augment Reality

- ▶ Real-world environment augmented with computer generated input - imagery, sound etc.

