Introduction to Game Programming

Game Genres & Game History
Concept Development

• High concept

• Typically a single sentence description of the game that sounds interesting

• Example:

  • Ping-Pong on the computer (Pong)
  • A street racing game where you drive a getaway car for the mob (Driver)
  • An ordinary technician battles monsters after an accident at a secret research facility (Half-Life)
Genre

• High concept may fall into an existing genre or category
• It could be a hybrid combining elements from different categories
• It could be a genre yet unheard of

• What would be your choice?
Genre – Adventure Game

• Story-based game that usually relies on puzzle-solving for actions

• Can be text-based (Infocom’s Zork) or graphical (Sierra’s King’s quest)

• Can be told from a first-person (Seventh Guest) or third person perspective (Monkey Island)

• Usually not in real time – player usually takes his time between turns – nothing happens in the game world until she/he enters her/his command

• Usually mouse-based point-and-click in which player indicates what he wants by moving the mouse on screen

• Player expects a complex world and a good story
Genre – Action Game

• Real time games in which the player must react/act quickly to what’s happening on the screen

• Dominated by first person shooters (FPS) such as Quake, Unreal, and Halo

• Could be third person (Tomb Raider) as well
  • In which the gamer can see the heroine or hero as she/he moves through the environment and gamers have more to do than just shoot and kill

• Opponents could be computer generated artificial intelligence (AI) or other human player over a network (local or internet)
Genre – Action/Adventure Game

- Combination of the two mentioned game types
- Typically long-term obstacles
- Games focus on exploration
- Item gathering, puzzle solving, combat are features
- Don’t fit in either action or adventure category
- 79s Atari Adventure is example
- Stealth games (e.g. Amnesia) and survival horror (e.g. Resident Evil) are subtypes
Genre – Role Playing Game

• Gamer generally directs a group of heroes on a series of quests

• Gameplay revolves around gradually increasing abilities and strengths of the heroes (Ultima, Might and Magic, Final Fantasy)

• Players expect to be able to micromanage their characters, all the way down to the weapons they carry and specific armor for their bodies

• Combat is an important element by which the heroes gain strength, experience and money to buy new equipments

• Like adventure games, RPGs feature a huge world with a gradually unfolding story
Genre – Strategy Game

• Requires players to manage a limited set of resources to achieve a pre-determined goal

• Resource management frequently involves deciding which kinds of units to create and when to put them into action
  
  • Player has to continuously balance which kind of unit to build, how many resources to allocate towards offense and defense (Command and Conquer),...

• Usually turn-based – player may take his time to make a decision – computer reacts only when player indicates to be ready.

• Real time strategy (RTS) games set the computer AI in action without giving gamer open ended time

• AI opponents may be substituted by humans in the Internet
Genre – Simulation Game

• Simulations or sims are games that seek to emulate the real world operating conditions of complicated machinery such as jet fighters, helicopters, tanks and so on.

• The more serious the simulation the higher the premium that’s placed on accuracy and equipment controls.
  • Players expect to spend hours learning the intricacies of the machine and expect a manual as well to help them with finer points.

• Less serious sim games, known as arcade sims, have simplified controls, less to learn, and punished less often for mistakes.
Genre – Sports Game

- Sports games let players participate in their favorite sports as a player or as a coach.
- Must accurately reproduce the rules and strategies for the sport.
- Session may over an individual match, a short series, or an entire season.
Genre – Fighting Game

• Usually, two person games in which each player controls a figure on the screen using a combination of moves to attach his opponent and defend against opponents attacks

• Players expect to find a basic set of attacks and defense mechanisms and master those over time
Genre – Casual Game

- Traditional games such as chess, bridge, solitaire, poker etc.
- Players generally want to drop into and out of these games quickly
- Game rules should be emulated correctly
- Simple user interface
- Little learning curve
Genre – Puzzle Game

- Games for intellectual challenge of problem solving (Castle of Dr. Brain, Incredible Machine)
- Puzzles play the pivotal role and are an end in themselves (opposed to adventure games where puzzles are integrated into stories).
Genre – Education Game

- Those games that teach while they entertain (Oregon Trail, Reader Rabbit)
- Aimed at younger audience
- Designers have to work with subject experts to ensure that the content is appropriate for the target group
More Games

• **Rhythm** Games: music games, examples: DJ-Hero, Guitar-Hero, Rock band, AudioSurf, Dance Dance Revolution

• **Online** games: can include any game if it is played over a network (especially, the Internet).

• **Programming** games: player has no influence on game directly, needs to write a script/program instead.

• **Exergame**: ...get fit!

• ...

As the world of video games continue to evolve, we take a look back at popular consoles and video games that helped make Nintendo, Sony, and Microsoft the giants they are today.

1st Generation

1967
- Galactic Space Station, a video game by Ralph Baer and his coworkers, designed the first video game console that works on a standard television and stores "Brown Box" games, which can be loaded into the television using a disk.
- "Breakout": a popular video game by Apple cofounders Steve Jobs and Steve Wozniak that is considered to be one of the earliest commercial video games.

1972
- Atari releases "Pong" as the first home video game. The game is a simple table tennis game and is considered a success.

2nd Generation

1975
- Atari releases "Pentagon" as the first home video game that can be played by two players.

1976
- Atari releases "Space Invaders" as the first home video game that can be played by four players.

1977
- Nintendo releases "Donkey Kong" as the first home video game that can be played by six players.

3rd Generation

1981
- Sega releases "Phantasy Star" as the first home video game that can be played by eight players.

1984
- Nintendo releases "The Legend of Zelda" as the first home video game that can be played by twelve players.

4th Generation

1990
- Sega releases the Sega Genesis as the first home video game that can be played by twenty players.

1995
- Nintendo releases the "Super Mario 64" as the first home video game that can be played by twenty-five players.

Source: onlineeducation.net, 01/14/2015

http://www.museumofplay.org/about/icheg/video-game-history/timeline
https://prezi.com/_ujp_lp7bfc4/httpwwnonlineeducationnetvideogame_timeline/
1990
Notable Releases:
- Street Fighter II
- Tecmo Super Bowl
- Sonic the Hedgehog
- Sega CD

1991
Notable Releases:
- Final Fantasy
- Castlevania
- Contra
- Final Fantasy
- Phantasy Star
- Metroid: Samus Aran

1992
Notable Releases:
- Mortal Kombat
- NHL 94
- NBA's Dream Team
- Air Combat
- Police CD

1993
Notable Releases:
- Ridge Racer
- Star Fox
- Street Fighter Alpha: Viper
- Sonic the Hedgehog 3

1994
Notable Releases:
- Home Run
- Game Genie
- Turf Express
- Paperboy 2
- Super Mario World
- F-Zero

1995
Notable Releases:
- Chrono Trigger
- EarthBound

1996
- Nintendo releases the N64, the last significant cartridge-based home console was released in years, it sold 33 million units sold
- Other Releases:
  - Resident Evil
  - Crash Bandicoot
  - Sega Super GT

1997
- Nintendo releases the GameCube
- Other Releases:
  - Paper Mario: The Thousand-Year Door

1998
- Sony releases the PlayStation 2, 138 million units sold and is the best selling console to date
- Other Releases:
  - Perfect Dark
  - Chroma Cross
  - Sales of Arcadia

1999
- Sega releases the Dreamcast. Considered to be ahead of its time and the pioneer of online gaming, the Dreamcast sold 10.6 million units
- Other Releases:
  - Phantasy Star Online

2000
- Sony releases the PlayStation Portable
- Other Releases:
  - Final Fantasy IX
  - Metal Gear Solid
  - Xenogears

2001
- With their first venture into the video game console market, Nintendo releases the GameCube, 24 million units sold
- Other Releases:
  - Halo
  - Guitar Hero

2002
- Notable Releases:
  - GC: Gotham City
  - Splinter Cell
  - Medal of Honor

2003
- Microsoft releases its second console, the Xbox 360
- Other Releases:
  - Gears of War
  - Halo 2

2004
- Nintendo releases the Nintendo DS and Sony releases the PSP Go
- Other Releases:
  - Fable

Source: onlineeducation.net, 01/14/2015
This might be the world’s first video game
From the arcade boom to the rise of home consoles and PC gaming, the gaming industry quickly grew to rival and outpace film and television. Once mobile gaming took off, that wave of revenue became an ever-growing tsunami.

Here’s how the gaming market’s revenue wave has grown over time.
Platforms

Source: jesperjuul.net, 12/06/2012
Platform release history

Source: jesperjuul.net, 12/06/2012
Video games released per year per platform

https://imgur.com/SX8Xwb4, last access on 1/16/2020
Game Proposal Document

- High concept
- Genre
- Gameplay
  - Summarizes what the player does as she/he plays the game
- Features
  - Lists major selling points of the game (advanced graphics, new technology etc.)
• Setting
  • Describes the game world in a few paragraphs and explains why the game is interesting

• Story
  • Synopsis of the story if the game has a story

• Target audience
  • For whom is the game being developed? Kids? Sports fans? Mass market? ... 

• Target hardware platform
  • If it’s a PC game then memory, processor speed etc.
Game Proposal Document

- Estimated schedule
- Estimated budget
- Competition analysis
- The Team (credentials of members)
- Document summary (reiterate why this will be a great game)