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


- **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!

- ...
VIDEO GAME timeline

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.

1972
The world's first home video game console, the Magnavox Odyssey, sold 300,000 units in its lifetime.

1974
Gran Trak 10, the first racing arcade game, is released. It is the first arcade game to use RAM.

1974
Maze Wars is released. Considered to be the earliest first-person shooter.

1977
Nintendo releases Color TV Game 8, featuring 6 variations of "Tennis" (ping pong).

1979
Notable Release: Asteroids

1981
Notable Release: Galaga

1984
Notable Release: Donkey Kong

1986
Notable Release: Super Mario Bros.

1994
The Sega Genesis launches, becoming the most successful console in Japan and later released in the United States as the Nintendo Entertainment System, selling 62 million units sold.

1994
Nintendo releases the Family Computer in Japan, which is later released in the United States as the Nintendo Entertainment System, selling 62 million units sold.

1994
Notable Release: The Legend of Zelda

1995
Notable Release: Super Mario 64

1996
Notable Release: The Legend of Zelda

1997
Atari releases the Video Game Computer System (Atari 2600 or VCS). It is the most successful video game console of its time.

1999
Mortal Kombat releases the Mortal Kombat video game, a new game with 125 games during its lifetime.
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.)

Source: rohan.sdsu.edu
... Game Proposal Document

- 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)