COM415
Game Development

1. Introduction

Assessment

- Final Exam 50%
- Continuous Assessment 50%
- Google Classroom
  - Classroom Code: **o4dbkwn**

Definition of a game

- *Video* Game or *Computer* Game?
  - All commonly referred to as Video Games

Game Development Team

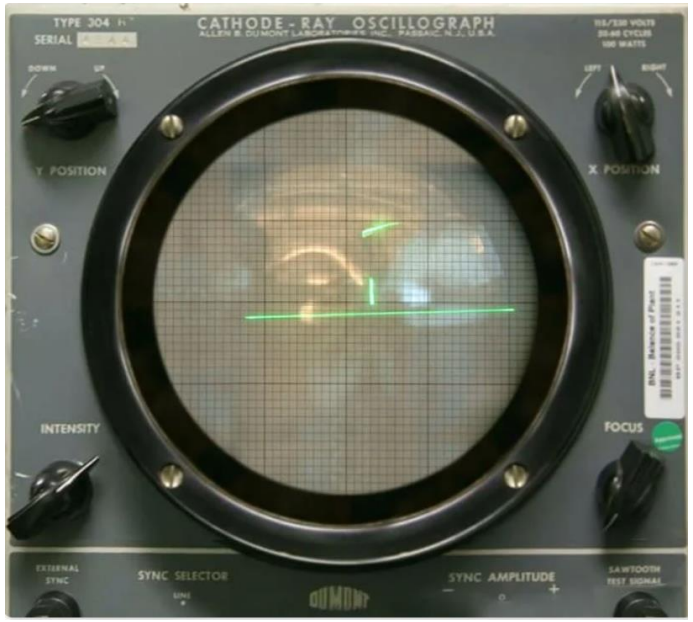
- Programmers (Engineer)
  - Runtime programmers
    - Work on the game engine
    - Work on the game
  - Tools programmers
- Artists
- Game designers
- Producers

Game Development Team

- Studios
  - Handle development of the game
- Publishers
  - Handle:
    - Marketing
    - Manufacturing
    - Distribution

Target hardware for games

- Tennis for Two (1958)
  - https://www.youtube.com/watch?v=6QYNlPLzj90 (Ultimate History of Video Games)



- Space War (1961)
  - https://www.youtube.com/watch?v=YZxSaXIHy_o (Video Game History Project)

Target hardware for games
Video Game Consoles

- Sony PlayStation Consoles

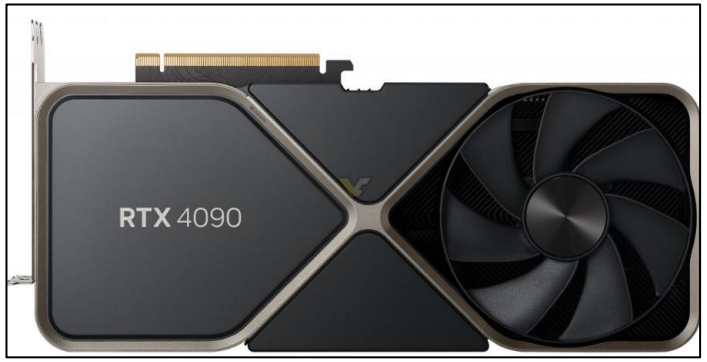
Target hardware for games
Video Game Consoles

- Microsoft Xbox Consoles

Target hardware for games
Video Game Consoles

- Nintendo Consoles

Target hardware for games
Person Computer (PC)



Target hardware for games
Handheld Gaming Devices

- Handheld Gaming Devices

Target hardware for games (a historical approach)

- Mobile Devices & Virtual Reality

Target hardware for games

The Definition of a video game

- Definition of a game
  - "*An interactive experience that provides the player with an increasingly challenging sequence of patterns which he or she learns and eventually masters*" (Koster, 2004 in Gregory, 2015: 8)
- Soft real-time interactive agent-based computer simulations
  - Mathematical models
  - Approximation and simplification are key in game development
  - Interactive temporal simulations
    - The virtual game model is dynamic
    - Response to unpredictable inputs from human players

Real-Time Systems

- Deadline
  - In video games a screen must update at least 24 times per second
    - Many games render the screen at 30 or 60
  - In soft real time systems, a missed deadline is not disastrous
- Numerical simulations
  - Generally Implemented by running calculations repeatedly
    - To Determine the state of the system at each discrete time step
  - Main game loop in video games
    - Run repeatedly
    - Game systems during each iteration update their state for the next time step
    - Results of each time step are rendered

References

Gregory, J. (2015). *Game Engine Architecture.* 2nd Edition. Boca Raton, FL: CRC Press.

Koster, R. (2015). *A Theory of Fun for Game Design.* Phoenix, AZ: Paraglyph.

Novak, J. (2012). *Game Development Essentials.* 3rd Edition. Clifton Park, NY: Delmar, Cengage Learning.