Principles of Computer Game Design and Implementation

Lecture 2

Acknowledgement

- All of the materials of this module are inherited from Prof. Boris Konev.

We already knew

- The aims and learning outcomes of this module
- History of video game

Outline for Today

- Game platform
- player motivation
- game structure
- player-game model
- character archetype
- game genres

Platforms: Arcade

Mach 3
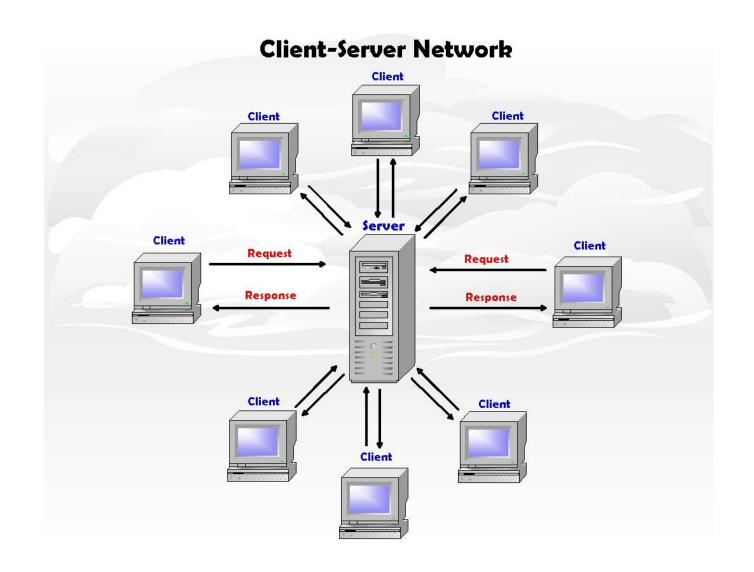
Platforms: Console
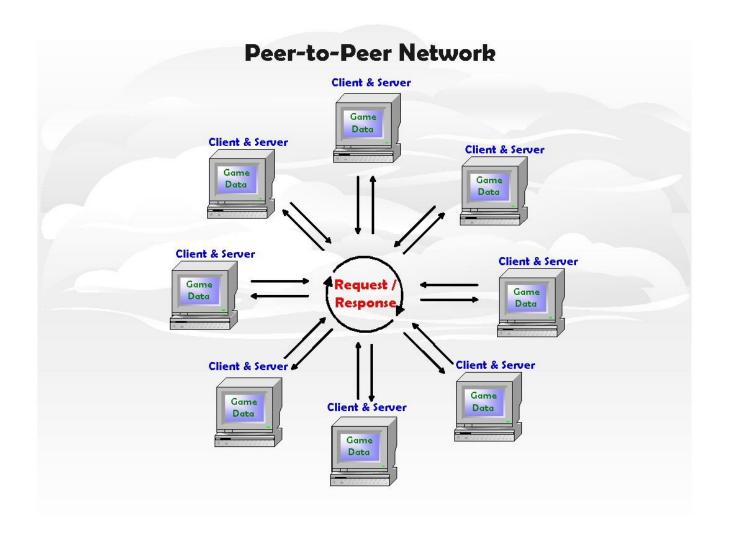
Sony playstation

Microsoft Xbox

Etc

Platforms: Computer

Platforms: Online (Multiplayer)

Client-Server Network

Platforms: Online (Multiplayer)

Youtube video: https://www.youtube.com/watch?v=fXgve-TfPkw

Platforms: Handheld

Game Boy Color   **Game Boy Advance**   **Game Boy Advance SP**

(Museum items)

Platforms: Mobile Devices

- Modern mobile devices are more powerful than 1st generation of game consols
- It is relatively easy to publish your app

Why Do People Play Computer Games?

Player Motivation

- Social interaction
- Physical seclusion
- Competition
- Knowledge
- Mastery
- Escapism
- Addiction
- Therapy

A matter of psychology research
- A learning or growth experience.
- Fantasy fulfillment and exploration
- Exercise
- A social function
- …

Most Importantly: Having Fun

- Physical fun
  - Sport games, quests, killing and gathering
- Social fun
  - Learn social skills, finding mates, showing off
- Mental fun
  - Puzzles, identifying, abstract thinking
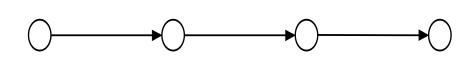
Overlap in many cases

Great Game

A series of interesting and meaningful choices made by the player in pursuit of a clear and compelling goal
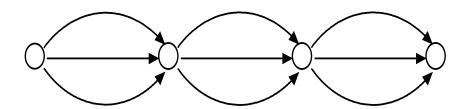
- Must have choice, or it is not interactive
- Must be a series of choices or it is too simple to be a game
- Must have a goal or it is a software toy
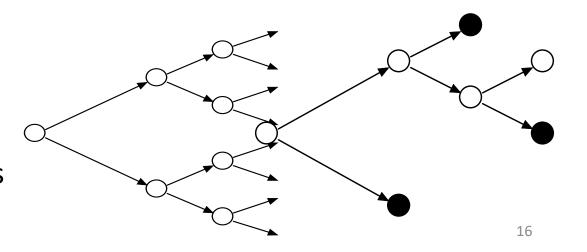- With *Sim City* and *The Sims* players may bring their own goals

Choices

- No choice
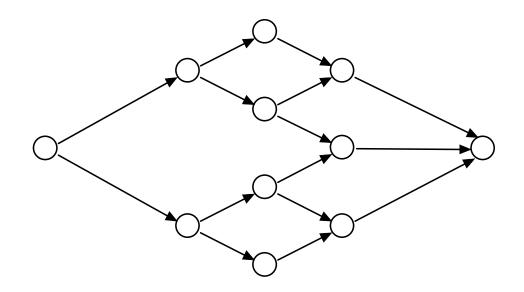
- Meaningless choices

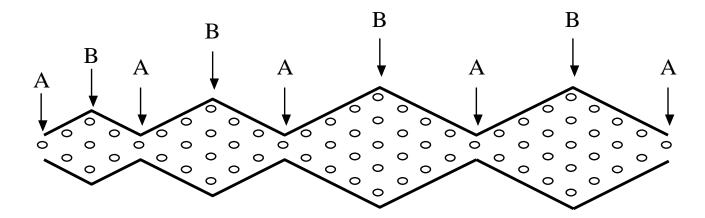- Infinite choices
  - Cut off branches

Classic Game Structure

- A convexity
- Starts with a single choice, widens to many choices, returns to a single choice

A Series of Convexities

- Many games are chains of convexities

- Points of limited choice (A) alternate with points of many choices (B)

The "Golden Path"

- The optimum path to experience most of the game
- Keeping on the golden path
  - Characters refuse to obey
  - Internal monologue
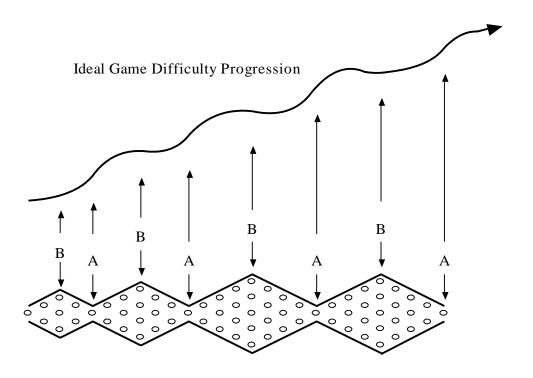 - Attractions on the way

Why Is This Structure So Good?

- Give the player choice but not an infinitely expanding set of choices
- Mix of some "any order" choices (B) and some in fixed order (A), blending freedom with linear storytelling
- Can be structured so players see most of the game, minimizing waste
- Can have difficulty go up in new levels

Psychological Advantages of Classic Structure

- Alternating intense learning (A) with time to practice (B) is the best way to master new skills
- Gradual learning and introduction of new skills at the heart of fun game play
- "Easy to learn, difficult to master"
- "Simple, Hot, and Deep"

Difficulty Increase Varies

Ideal Game Difficulty Progression
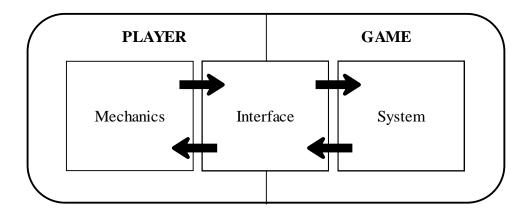
B   A   B   A   B   A   B   A

A = Rapid Difficulty Increase, B = Slower Increase

Game Design

- Computer games are an art form
- Game design practices can be taught
- Design is a technical discipline like music, film, poetry
- Design is the art of making dynamic models
- There's no `right' or `wrong' approach
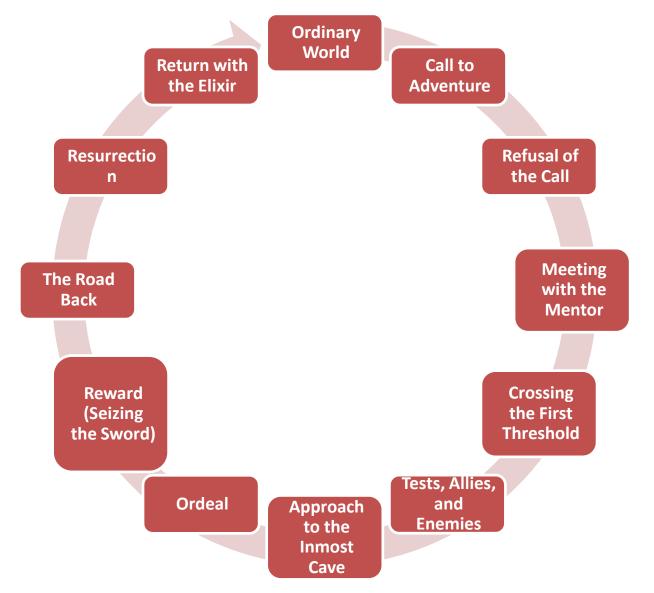 - But there are `typical' scenarios

A Player-Game Model

- A model of the player – game relationship

A `Typical Hollywood Act'

Beginning

Capture attention

Introduce problem

→

Middle

Provide tension

Present obstacles

→

End

Provide closure

Resolve problem

Hero's Journey

Character Archetypes

- Hero
- Shadow
- Mentor
- Ally
- Guardian
- Trickster
- Herald
- …

Game Genres

To name a few

Other resources from Youtube:
https://www.youtube.com/watch?v=_F6rnWGR-_w

What is a Game Genres?

Categories of games characterised by particular kinds of challenge, regardless of setting or game-world content

- Meant not to constrain your choices, but provide framework for design

Game Genres

- There are about a dozen or so different types of video games.
  - Each video game belongs to one or more of these genres.
- While games in the same genre can look vastly different, they share many of the same properties.
  - Similar design issues and problems.
  - In some cases, similar gameplay mechanics.

Action

- Typified by fast-paced combat and movement
- Spacewar, Pong, and Space Invaders helped define the genre

Platformer
(Donkey Kong)

Racing
(GravRally)

Fighting
(Tekken)

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Action (cont'd)

- Far less cerebral than adventure games.
  - Players are looking for fast-paced action.
  - Some action games, however, also add adventure or strategic elements for a different kind of experience.

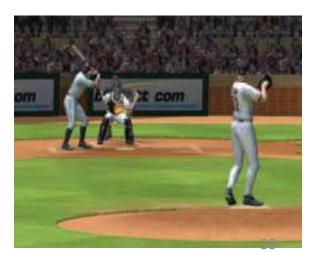First-Person Shooter [FPS]

Third-Person Shooter

Simulation

- Simulation
  - Based on the simulation of a system
  - *SimCity* and *The Sims* are example of "God" simulations where you control the lives of a town or a family
  - *Wing Commander* and *X-Wing* are popular space combat simulation games

Strategy

- Real-Time Strategy (RTS)
  - Typically, a game in which the goal is to collect resources, build an army and combat the other player or computer
  - Popularized by Westwood's *Dune 2* and *Command and Conquer* and Blizzard's *Warcraft*

Real-time strategy (RTS) *(Command & Conquer: Generals – Zero Hour)*

Strategy

- Turn-Based Strategy
  - Like real-time strategy games, but turn-based
  - *Civilization*, *X-COM*, *Master of Orion*, and *Jagged Alliance* are standouts of the genre

Turn-based strategy
(Civilization III)

Opponents can be computer generated, human players, or some combination of the two.

Real-Time V Turn-Based

Adventure Games

- Generally story-based games that rely upon puzzle solving to move the story along.
  - Can be text based (requiring a parser of some kind) or graphical (point and click).
  - Can be first, second, or third person.
  - Generally has a large, complex world with many interesting characters and a good plot.
- Generally not real-time games.
  - Can take as much time as wanted to take a turn; nothing else happens in mean time.
  - Action-adventure hybrids can be real-time.

Adventure Games

Zork I (Text Adventure)

Myst III: Exile (Graphical Adventure)

Tomb Raider (Action-Adventure)

Massively Multiplayer Role-Playing Game (MMORPG)

- An RPG set in a persistent virtual world populated by thousands of other players
- *Ultima Online* in 1997 was the first popular one
- *World of Warcraft* is currently the most popular one

Massively Multiplayer Online Games (MMOGs)

MMORPG
(EverQuest)

MMOFPS
(Planetside)

MMORTS
(Shattered Galaxy)

MMOPG
(Puzzle Pirates)

Genres

- Sports
  - Games that simulate the sporting experience
  - Breakouts include *John Madden Football* and *Tiger Woods' Golf*
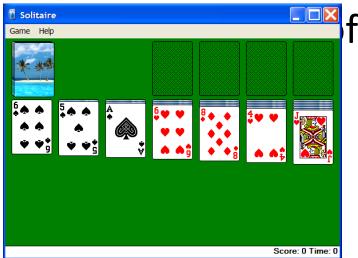

NHL 2003

Salt Lake 2002

Casual Games

- Casual games are easy-to-play, short session games with little or no learning curve.

- Players are already familiar with the rules of the game and expect them to be followed here.

- ant to of y.

God Games

- Games that do not have a real goal, other than to encourage players to fool around with them to see what happens.

The Sims

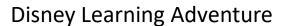Rollercoaster Tycoon

Black & White

Educational Games

Reader Rabbit

- Intended to teach while they entertain at the same time.
- These games are generally aimed at a younger audience than most other gaming ~~cts.~~

Disney Learning Adventure

Summary

- When designing a new game you should have a good idea why it would appeal to customers and how much fun it will be
  - Choose a genre
  - Be aware of social and psychological factors why people play games
  - Offer meaningful choice
  - Follow known design patterns