

Principles of Computer Game Design and Implementation

Lecture 2

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**

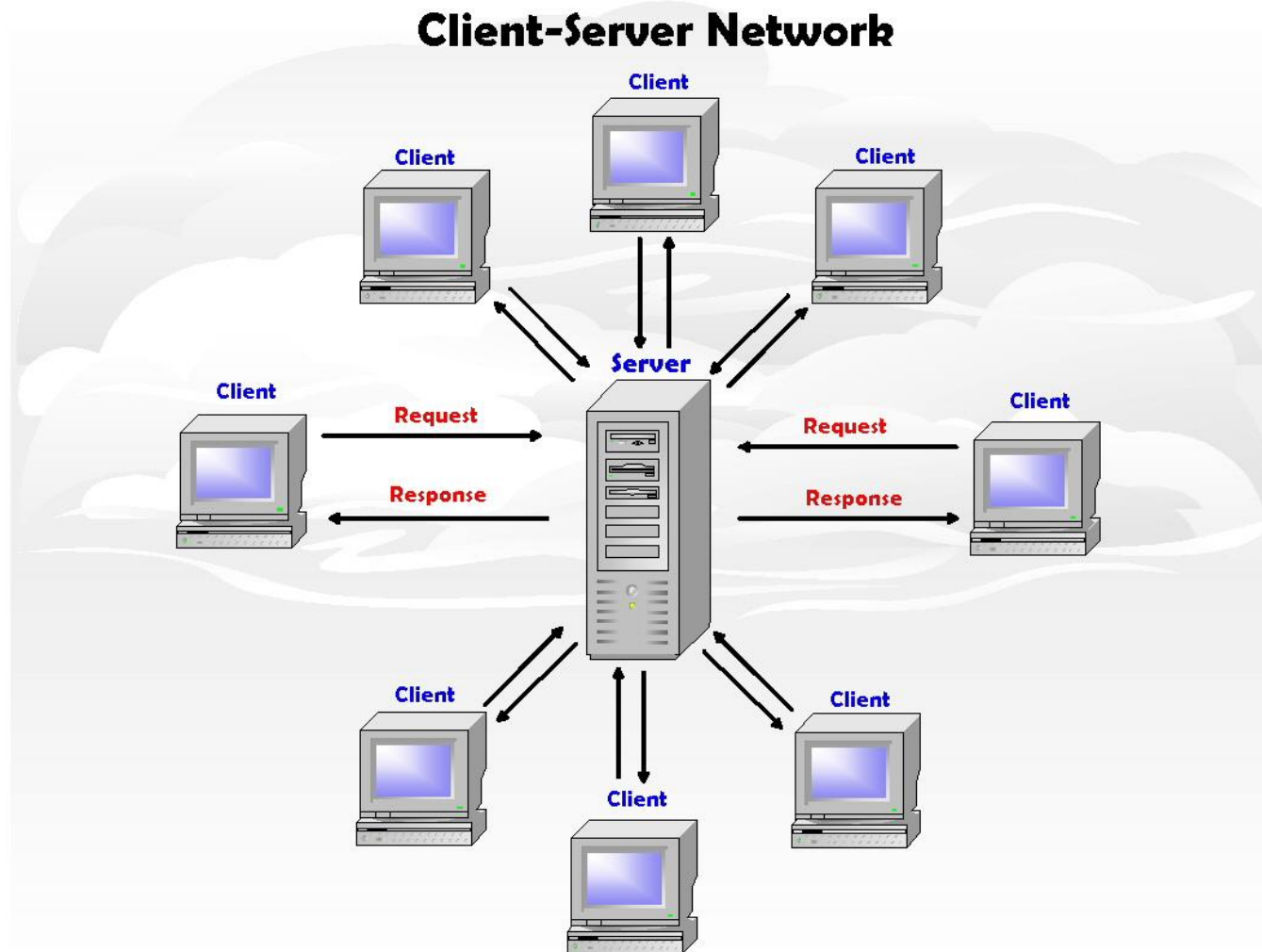


Etc

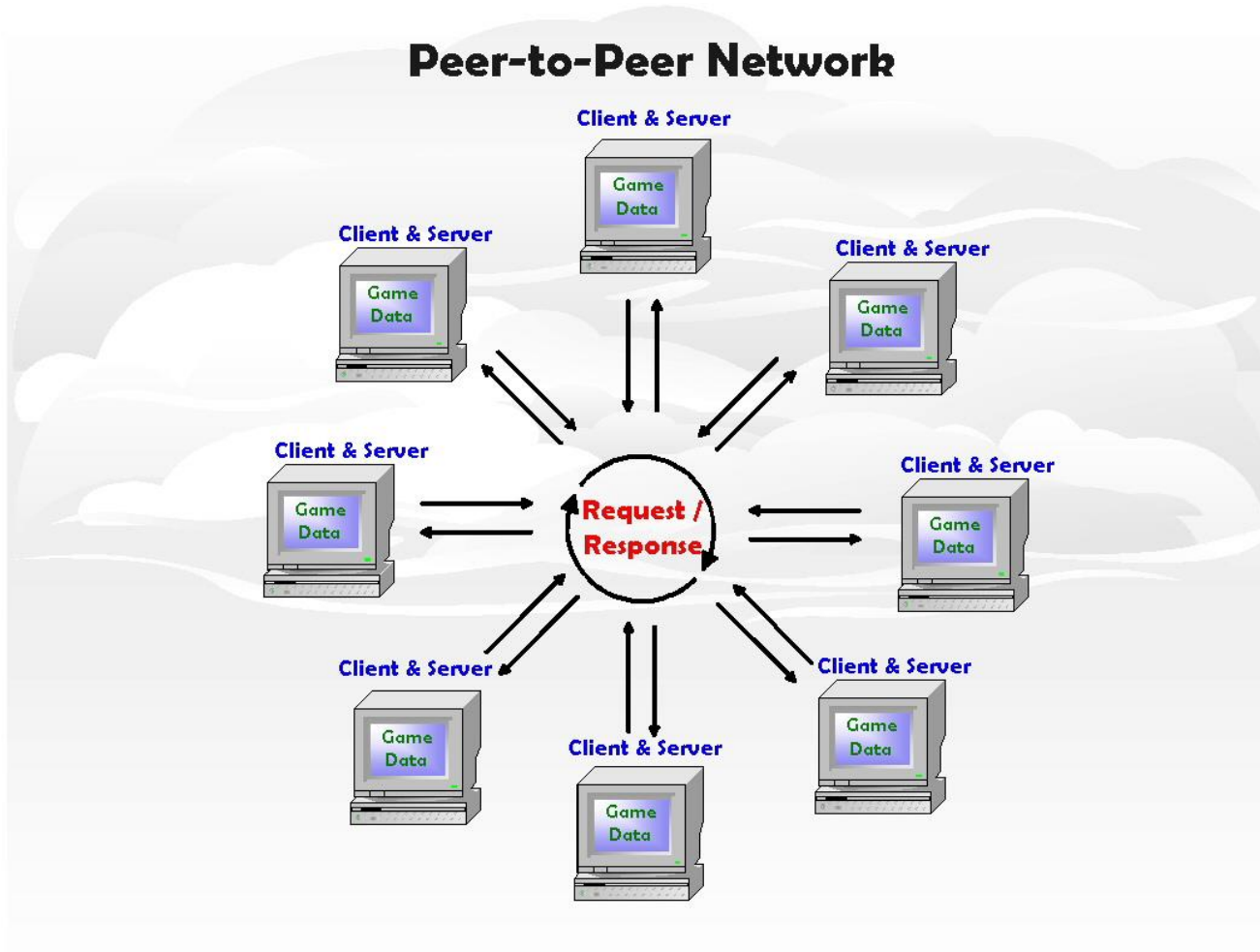
Platforms: Computer



Platforms: Online (Multiplayer)



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
- Exercise
- Creative expression

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

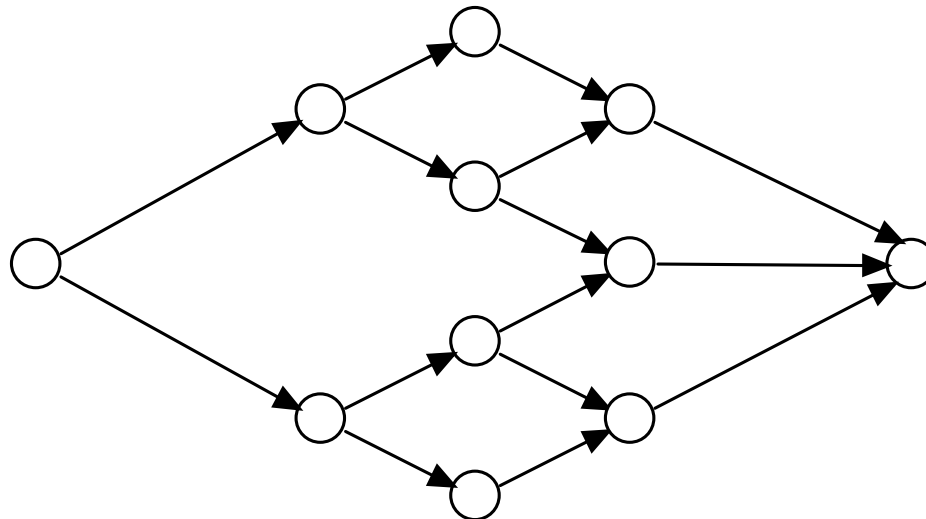
Great Game

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

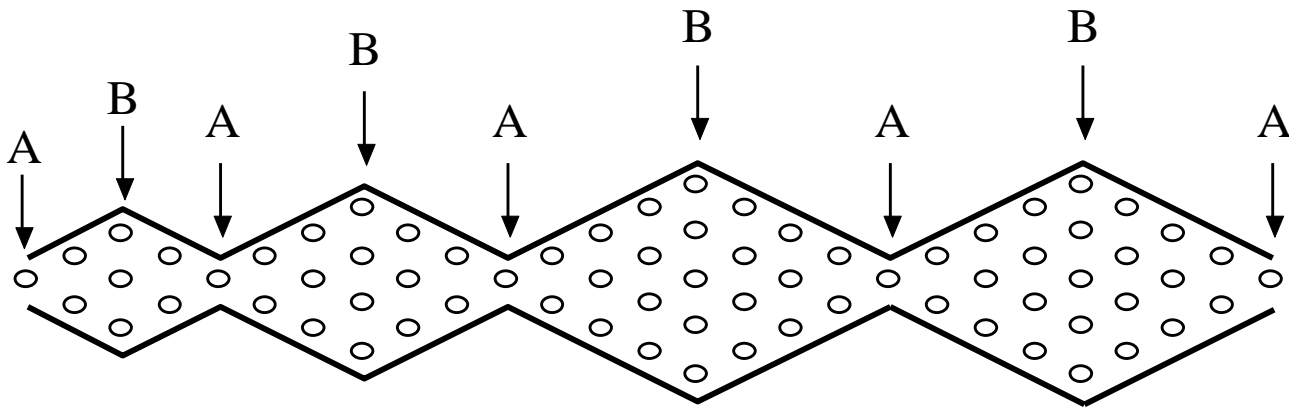
Classic Game Structure

- 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

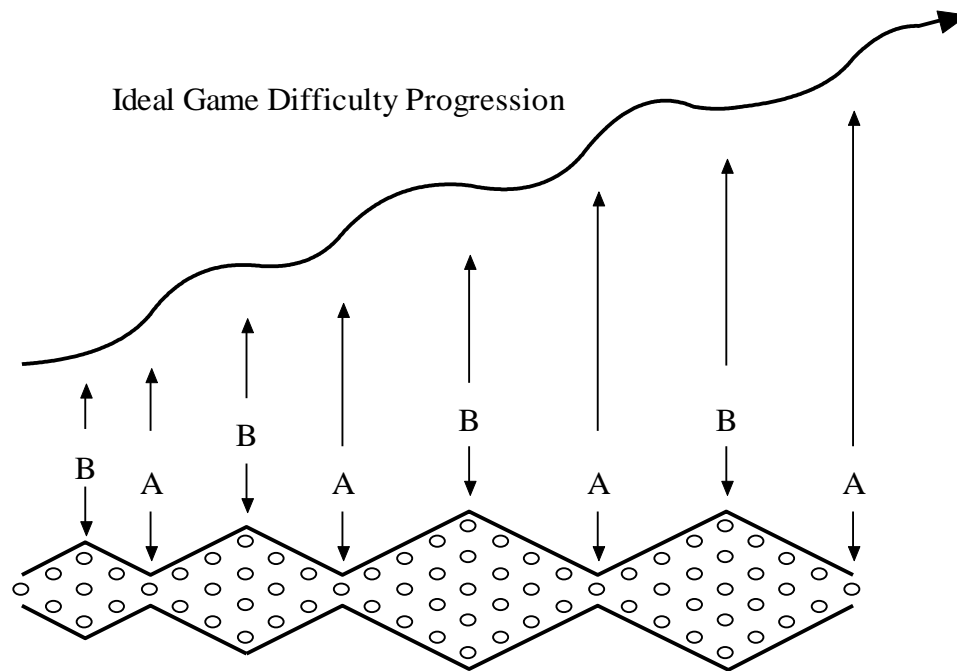
Why Is This Structure So Good?

- 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



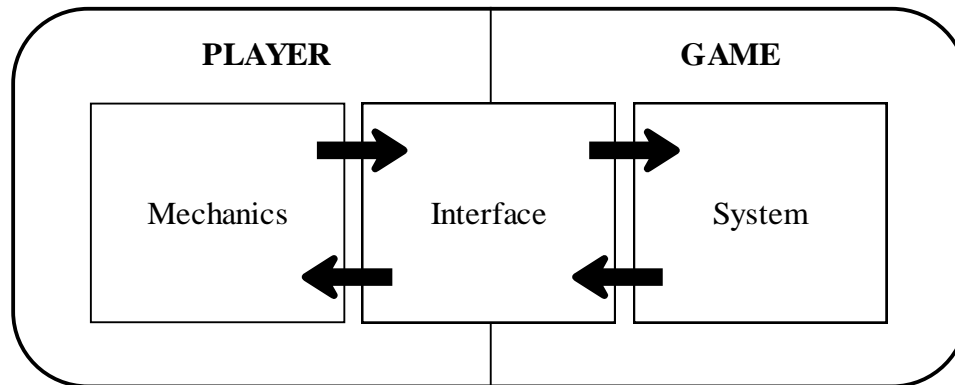
A = Rapid Difficulty Increase, B = Slower Increase

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

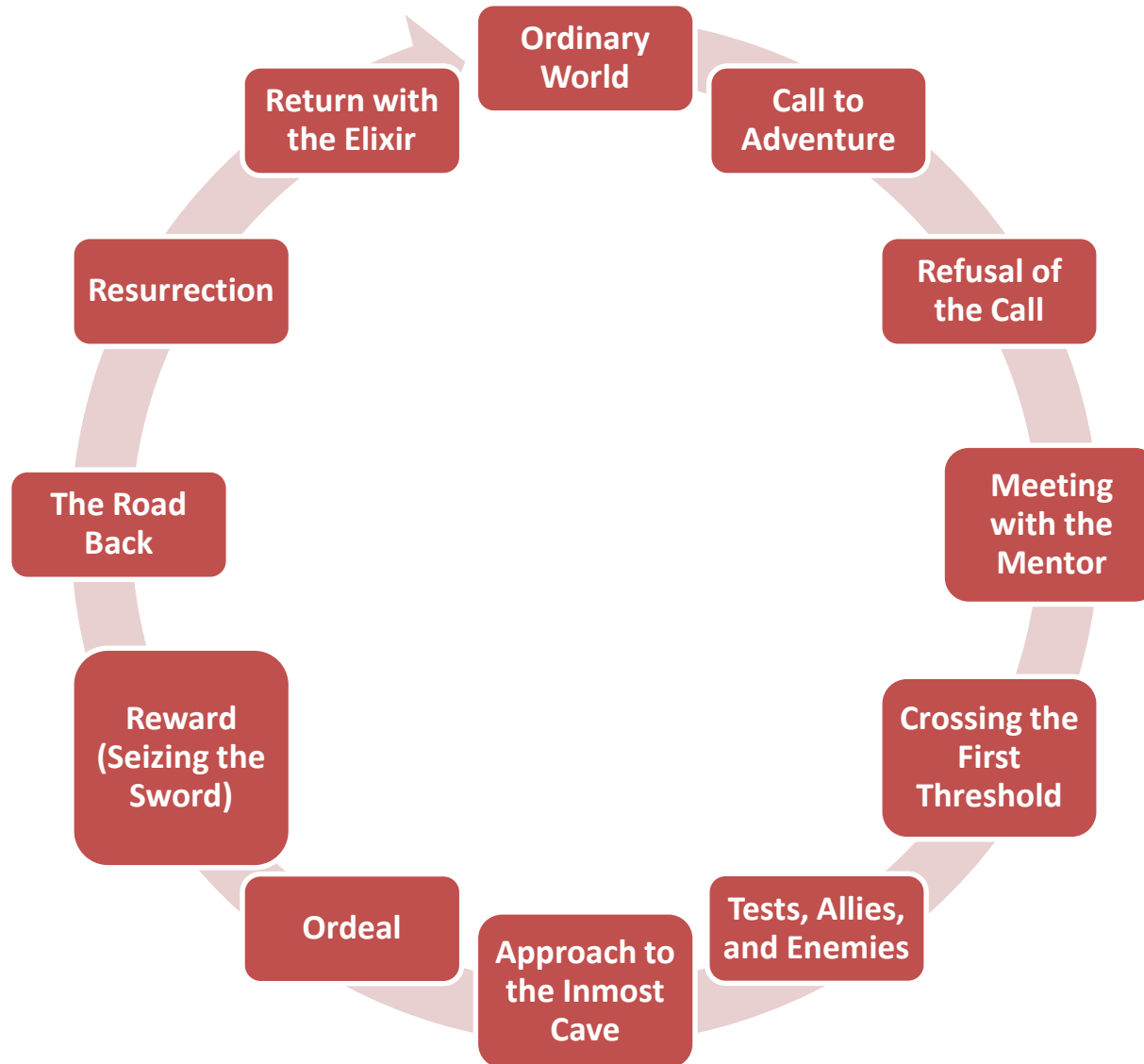
- A model of the player – game relationship



A 'Typical Hollywood Act'



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](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

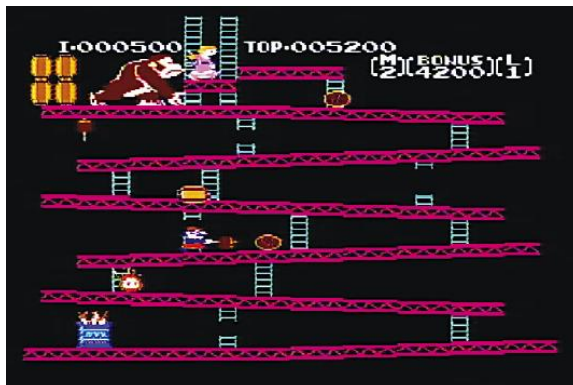
- Meant not to constrain your choices, but provide framework for design

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*)



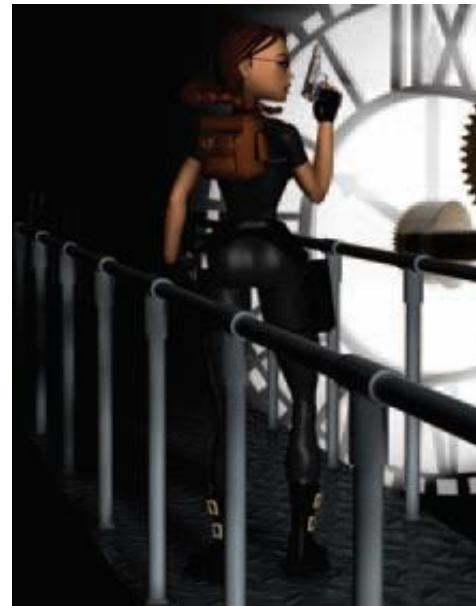
Fighting
(*Tekken*)

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

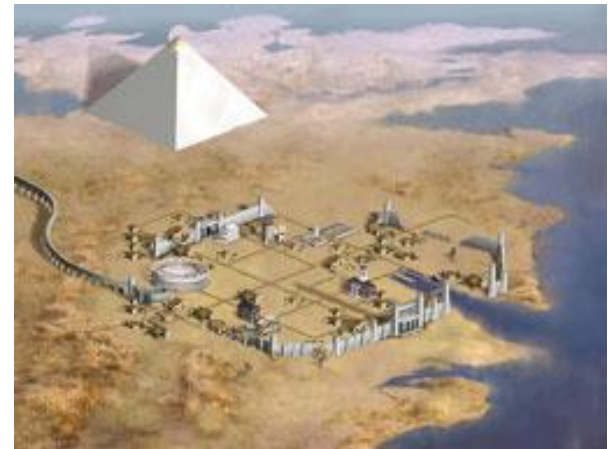
- Real-Time Strategy (RTS)
 - Typically, a game in which the goal is to collect resources, build an army and combat the other player or computer
 - Popularized by Westwood's *Dune 2* and *Command and Conquer* and Blizzard's *Warcraft*



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

```
West of House                               Score: 0           Moves: 2
ZORK I: The Great Underground Empire
Copyright (c) 1981, 1982, 1983 Infocom, Inc. All rights reserved.
ZORK is a registered trademark of Infocom, Inc.
Revision 88 / Serial number 840726

West of House
You are standing in an open field west of a white house, with a boarded front
door.
There is a small mailbox here.

>open mailbox
Opening the small mailbox reveals a leaflet.

>read leaflet
(Taken)
"WELCOME TO ZORK!

ZORK is a game of adventure, danger, and low cunning. In it you will explore
some of the most amazing territory ever seen by mortals. No computer should be
without one!"

>east_
```

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*



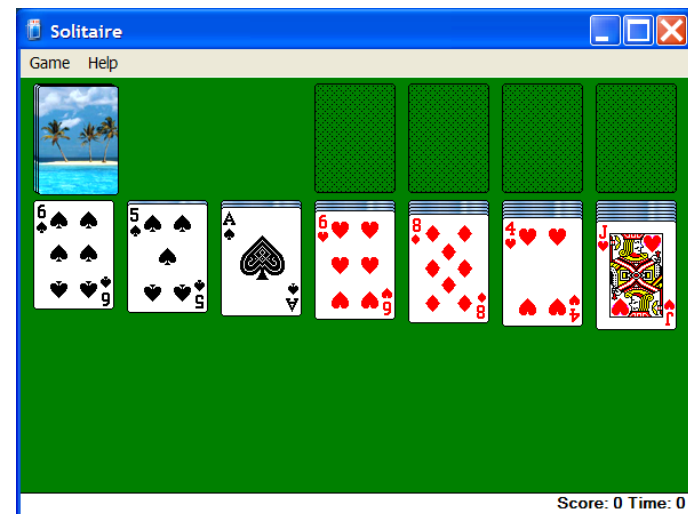
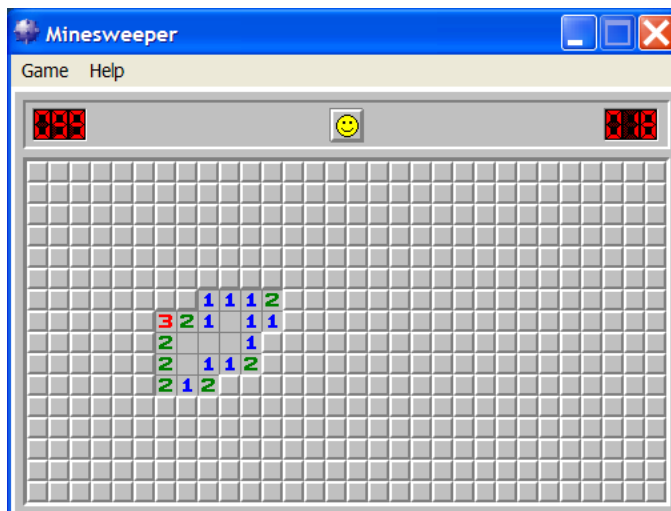
NHL 2003



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.
- Players generally want to drop into and out of these games quickly.



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 products.



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