Ludology

The Psychology of Fun

CSC404/DFI3006 2019 Games

- **Aimless Manor** – Pandy Ma (OCADU)   pandyma@gmail.com
  - Trapped within a manor with shifting rooms. There's no discernible way out as the doors open to a different room each time.

- **Barrely Fishing** – Robert Staskiewicz (UofT) bob.staskiewicz@mail.utoronto.ca
  - A fishing survival game. Floating in a barrel on the ocean with only a fishing rod and bait you must survive by fishing. Defend against sharks, whales, and squids by crafting weapons and fortifying your barrel with fish parts. Upgrade your fishing rod to catch bigger fish. Close the barrel when a storm appears, or when a squid tries to grab you.

- **Create and Hide** – Zack Law (OCADU) 3148987@student.ocadu.ca
  - A multiplayer game where you create your own disguise and try to be the last one found

- **Fangs and Friends** – Alessia Ianni-Palarchio (OCADU) 3148537@student.ocadu.ca
  - A co-op, action/puzzle game hybrid, where two unlikely allies - a vampires, and a mage - need to work together to escape the monster hunters that captured them. With their own individual weaknesses, only together can they get out with their lives!

- **Flame Keeper** – Samantha Fothergill (OCADU) 3157419@student.ocadu.ca
  - A top down, level based puzzle platformer, where the player takes control of a small character who possesses a flame, and the object of the game is to carry the flame safely to the end of the level in order to light a lantern. The player will have to avoid any obstacles that can put out their flame, as well, they will have a finite amount of flame they can use in order to burn down obstacles. However, every time the flame is used, the amount left to light the lantern at the end will go down, so the player must make sure they preserve enough flame to light the lantern in order to move on to the next level.

- **Frugal Hero** – Bill Gan (UofT)   bill.gan@mail.utoronto.ca
  - A dungeon game where you're cheap, so you only bought one throwing weapon. You have to retrieve your only throwing weapon every time you use it. You can obtain items to help you retrieve your weapon more easily.

- **Grayball** – Vinit Jogani (UofT)   vinit.jogani@mail.utoronto.ca
  - A frustrated color-blind scientist tries to rid the world of color. In this VR paintball game, you use unique powers of different colors (e.g. blue makes things float, red makes things heat up) to defeat him and his army.

- **Invisible War** – Yunlang Xu (OCADU)   xunyunlang@hotmail.com
  - Invisible war is a 2 player 3rd person shooting game where the player avatar is invisible, you have to detect the other player by listening to the sound of footsteps and observing the movement of objects such as door opening/closing. you risk being seen every time you pick up an item, but items are crucial to winning as you can set up traps that help you to win the game.

- **Maestro** – Jonathan Boyes (UofT) jonathan.boyes@mail.utoronto.ca
  - An RPG game in which the player must utilize music, rhythm, and music composition to defeat enemies and solve puzzles.

- **Meld** – Ana Damnjanovic (UofT) ana.damnjanovic@mail.utoronto.ca
  - A two-player co-operative shooter game where you pilot a giant robot with your partner to defeat all enemies while synchronizing your motions. The players control opposite halves of the robot and rely on each others' actions to move, reload, shield, and perform different attacks.

- **Takebacksies** – Adham Husseini (UofT) adham.husseini@mail.utoronto.ca
  - "Takebacksies" is a fighting game where each player has the ability to reverse time during the course of a match. Just get bodied? Well why don't you undo all of that and get a second chance to get bodied again! (Would limit ability usage in some way)

- **Unite and Grow** – Vinay Komaravolu (UofT) vinay.komaravolu@mail.utoronto.ca
  - The player must jump, wall jump, wall glide, avoid obstacles to get to the end. However if the player touches any part of the walls/ground they will accumulate in size, making them unable to enter certain areas. This forces the player to speed run, the game for certain items or to access certain areas.

Ludology: The psychology of fun

- The fundamental purpose of games is to make a "fun" experience.
- How do we identify the fun elements in existing games?
- How do we take an idea for a game and make it "fun"?

Objectives For Today

- Learn to identify what makes a game fun for your audience.
    - Also, what can make it less enjoyable for certain players.
- Use game mechanics to create a core game experience.
- Add layers of fun to enhance this core game experience.

Step #1: Finding the Fun

Game Player Cognitive Bias

- To start, we need to address the biggest issue that students in this course struggle with:

> Playing video games does not make a person an authority on making them.

- Also known as: "Eating food does not make you a good cook"
  - It barely qualifies you as a food critic.

The value of producers

- **Producers** are responsible for understanding what will make a game distinctly fun.
  - Understanding the game's subject matter.
  - Knowing the gamers.
  - Player psychology.

- Let's start with some basic game analysis exercises….

Case Study #1: Angry Birds

Case Study #2: Pokémon Go

How do producers succeed?

- **Not everybody is meant to be a producer.**
  - Need to have a vision (which understands and incorporates the way people think).
 - Need to communicate that vision, while also incorporating the ideas of others on the team.

Understanding "fun" games

- In this course, we present simple principles and guidelines that will help you identify features and avoid biases.
  - Basic psychology and HCI principles.
- From there, we move to evidence-based and empirical approaches to evaluate game ideas.
  - Focus groups.
  - Case studies.
  - Expert analysis.
  - Empirical research.

That being said…

Nobody sets out to make a bad game.
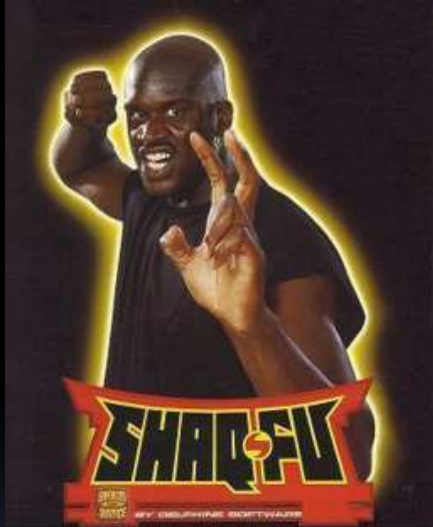
(↑ go to shaqfu.com)

- Sometimes bad games happen anyway.
  - "Games are never finished, just released"

Games pictured here: ET: The Extre-Terrestrial, Fallout 76, Sonic the Hedgehog (2006), Pac-Man (Atari 2600)

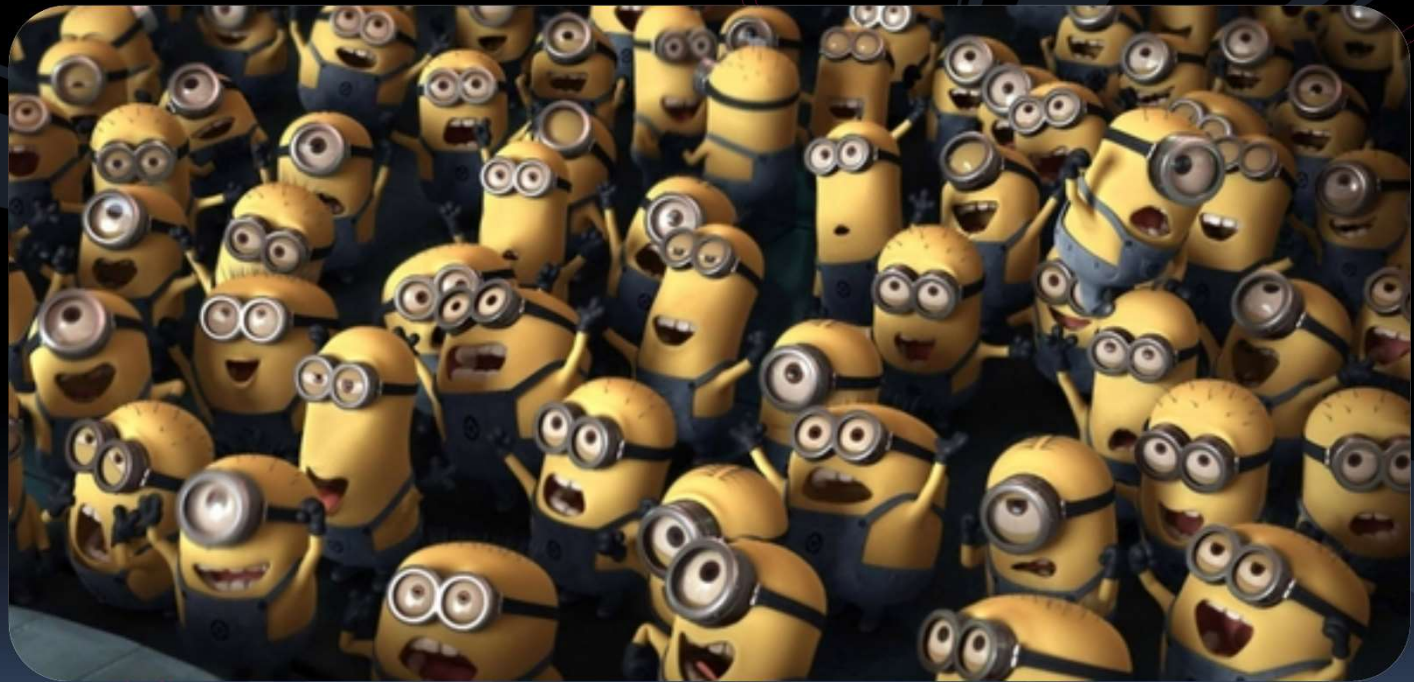# Step 2: Creating an Experience

From analysis to design

- Now the main question to answer is:

  > How do you make a fun game?

- In most game companies, the approach is:
  1. Consider your audience
  2. Determine what kind of experience you want to create
  3. Construct that experience, layer by layer.

Step 2a: Consider Your Audience

Thinking like a producer

- How does one begin to make a "fun" game?
- Start by asking questions….
  - *What is your audience?*
  - *What kind of game are creating?*
  - *What kind of experience are you creating?*
  - *What resources are available?*

  - *What budget is available?*
- The answers to these will determine what kind of fun can be built into your game.

The game design process

- Steps for making a fun game:

  1. Start with a good mechanic
     - make one good level
     - make tutorial
     - make extensions
  2. Establish a solid UI
     - controls
     - communication/rules
     - progress & feedback
  3. Make it challenging
     - know your audience
     - optimal flow
     - balance
     - playtesting
  4. Polish the look and feel
     - immersion/consistency
     - stimulation
     - music/sound

Game mechanics

- **Game mechanics** refer to the fundamental elements of your game that you use to engage your player.

- **Gameplay** usually refers to the experience that you want your player to have, and employs game mechanics in order to achieve those goals.

- What are examples of fun game mechanics?
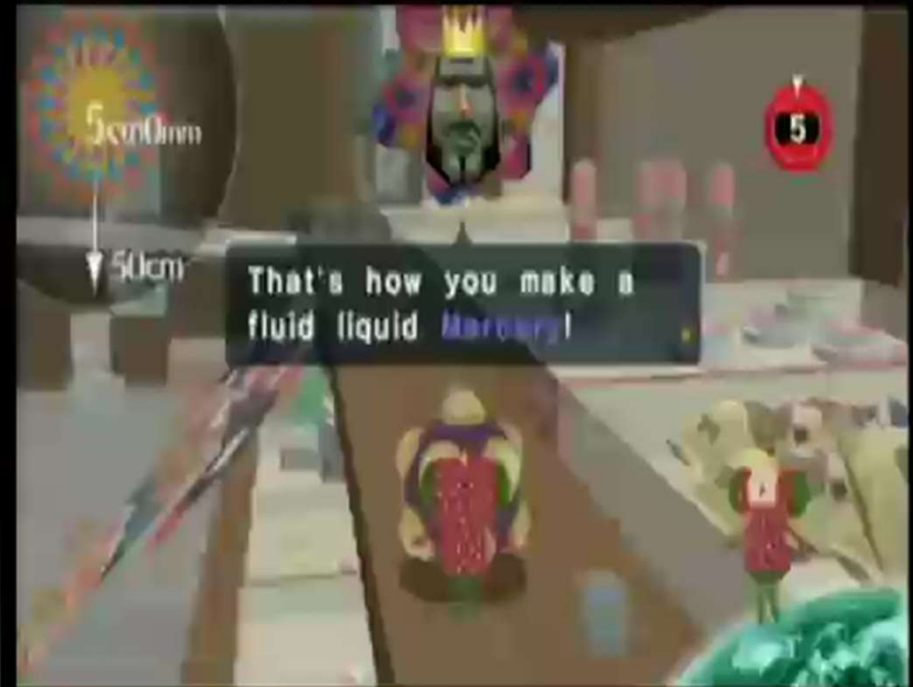
Building things up

Games pictured here: *World of Goo*

Knocking things over

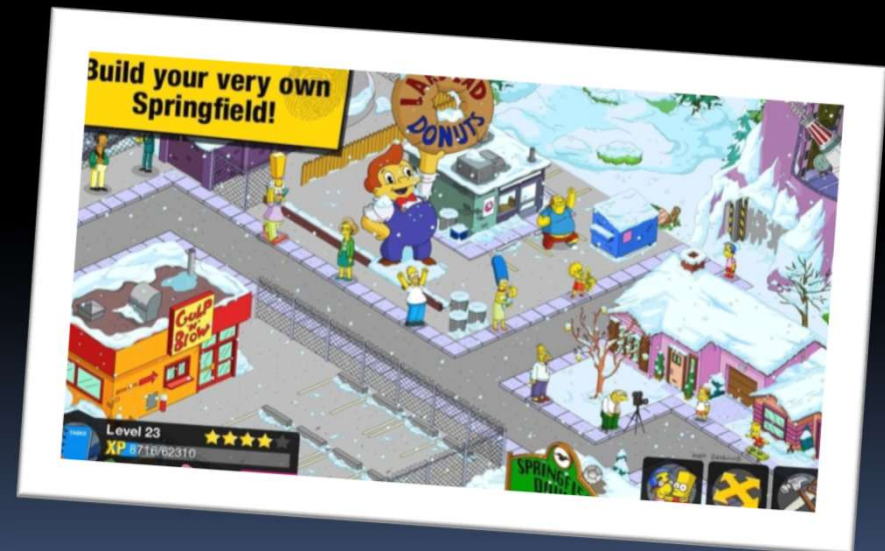*Games pictured here:* *Boom Blox: Bash Party*

Rolling things along

Games pictured here: Katamari Damancy

Concept before context

- Always start with the game mechanic that is fun to do, and build your game around that.
- This is what makes it difficult to build games around existing IP.
  - Unless interacting with the IP itself is the fun part of the game!

Games pictured here: Simpsons Tapped Out

Exercise #1: Mechanics

Do One Thing Well

- **You want your game to be unique.**
  - Most successful games draw from the successes of other games during the ideation process.
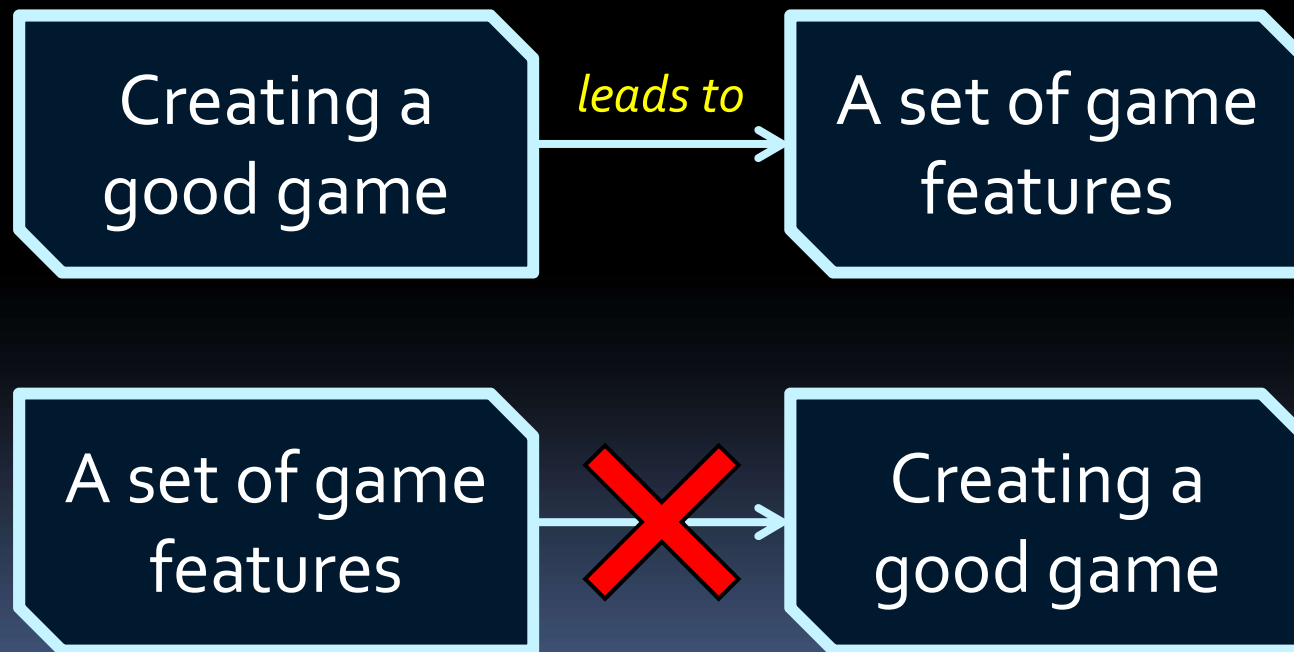 - Success often comes from using what works, but also having some novel elements that stand out.

Testing the best ideas

- Your idea might be fun in theory, but rapid prototyping helps to verify this in practice:
    1. Start with innovative idea.
    2. Make it quickly.
    3. Playtest this game.
    4. Iterate:
        - Identify promising game elements to keep, discard the rest.
        - If game isn't working as hoped, return to Step 1.
            - Note: Don't look back!!

- This is the motivation behind game jams.

The Availability Heuristic

A game is more than a set of features.

Creating a good game	*leads to* →	A set of game features

A set of game features	✗ →	Creating a good game

Example: Rocket League Trailer

CSC404: Video Game Design © Steve Engels

Games pictured here: Prince of Persia 2: Warrior Within, Duke Nukem Forever, Bomberman Ascenscion, Shadow the Hedgehog

Availability Heuristic in Games

What do gamers generally consider "fun" (according to Metacritic.com):

- Interesting storyline
- Lots of action and/or violence
- Co-op gameplay
- Lots of playable characters
- Elaborate arsenal
- Sick graphics
- Downloadable content

What do game companies do to make their games "fun"? (Hint: think sequels)

- Usually -- give the players what they ask for:
  - Amazing graphics
  - Familiar characters
  - Popular gameplay styles
  - Stimulating atmosphere
  - Sex and violence
  - Killer soundtrack
  - Cinematics
  - (whatever else made the original game popular)

Step 3: Constructing the Game

From ideas to execution

**Many ideas have the potential to be fun.**

- There are general guidelines (like the ones we provide) that help people make sure that the game doesn't fail for avoidable reasons.
  - That's why critiques are good, to identify these mistakes.

Games pictured here: Crush the Castle, Angry Birds

The layers of a game

- Games have layers, where each new layer builds on the layer before.
- Make sure you consider the order of these layers when scaffolding your experience.

Stimulation
Challenge
Communication
Controls
Interface
Idea
Experience
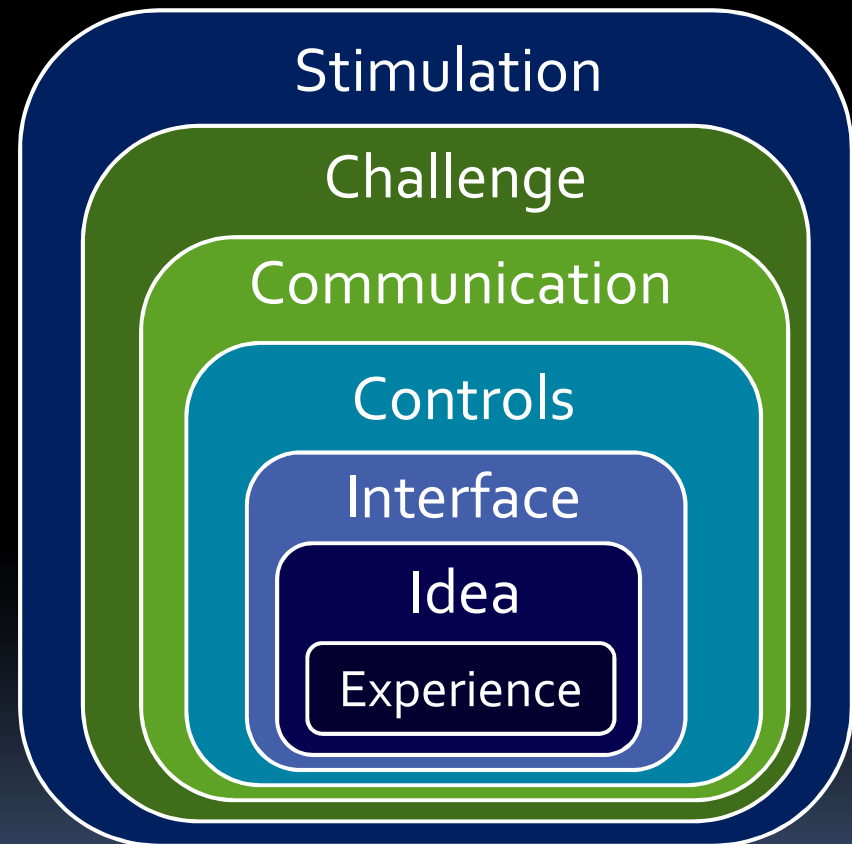
User interfaces for games

- Remember:

UX > UI

- Creating an effective user experience means establishing key game elements:
  - Controls
  - Communication / Rules
  - Progress & Feedback
- Find things your players hate, and get rid of them!

Remember the hardware

- Controls need to reflect gameplay.
  - Gave rise to specialized devices:
    - Wiimote, Kinect, Rock Band instruments, etc.
  - Actions should map naturally to game domain.

Games pictured here: Wii U Tennis, Donkey Konga, Cooking Mama

Controls

- "Agency":

> If the players want to do something, let them do it.

- Things to consider when setting controls:
  - Responsiveness
    - Sensitivity
    - Speed
    - Simplicity
  - Power
    - Accuracy
    - Orthogonality

Games pictured here: Warcraft 3

Control Example: Assassin's Creed

Communication

- Games are software products.
    - Certain basic information must be conveyed.
- Key items to communicate:
    - Controls
    - Actions
    - Objectives
    - Motivation
    - Rewards

Games pictured here: Heavy Rain

Example: Tomb Raider (Shadow)

Communication in Games

- Techniques:
  - Controls → Tutorial levels, game manuals
  - Actions → Dialog boxes, highlighted objects
  - Objectives → Floating direction arrows, maps
  - Motivation → Storyline & cutscenes
  - Rewards → Points, powerups, cutscenes, etc.
- Feedback can be through text, audio, sound & musical cues, or the level itself.
  - The more cues, the better.

Example: Prince of Persia

Progress & Feedback

Tell the player what they are doing right and wrong, constantly, in multiple ways.

- Constant feedback is essential:
  - Reinforcing behaviour
  - Indicating progress   Example: Boss battles
  - Providing stimulation
- Feedback needs to be visual, auditory, sensory, olefactory…whatever you can manage.

Example: Dance Dance Revolution
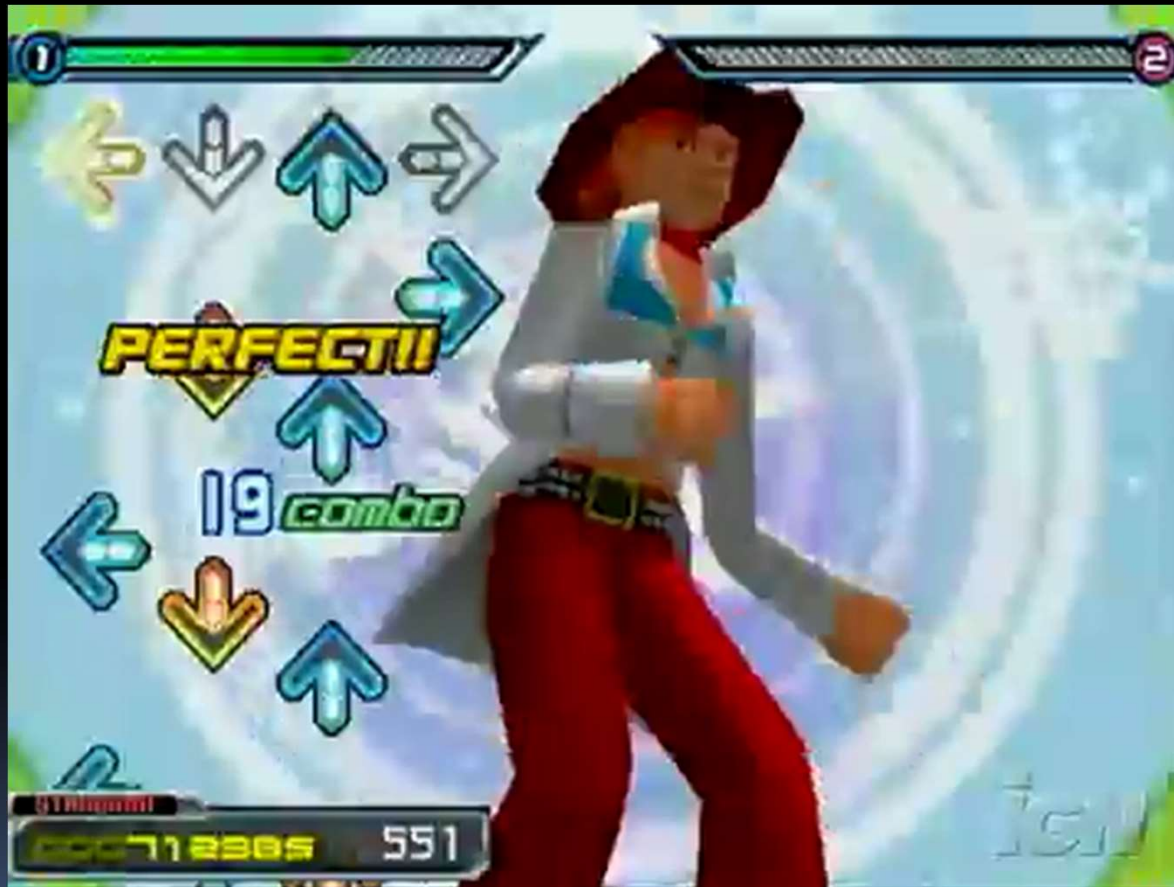
Rewards

- Rewards reinforce behavior and add gameplay.
    - Challenge + Rewards = Addiction.
- As with the other game elements, rewards can take many forms:

Sensory content
- "Dings"
- Musical fanfare
- Cutscenes & animations
- Advancing storyline

Items
- Loot/money
- Weapons, items & upgrades
- Unlockables & codes

Positive reinforcement
- Points/score
- Achievements
- Leveling up
- Intrinsic motivation
- Beating bosses
- Social rewards

KNOW YOUR MUSHROOMS

extra life   power up   block   reverse   poison

Exercise #2: Feedback & Rewards

Games pictured here: Final Fantasy X, Sonic the Hedgehog (original), Candy Crush Saga

Challenge in Games

Adding Challenge

- The challenge of games is what turns them from simply interactive to addictive.
    - Video game addicts exhibit many of the same signs as people with gambling addiction.
    - Combination of challenge and rewards
        - B.F. Skinner's experiments on operant conditioning with variable schedules.

Extensions to basic mechanic

- **Tutorial levels**
  - Once you perfect a basic level, keep simplifying it until you can't anymore.
   - Most ideas start at Level 5
- **Extensions**
  - Further levels are created when you consider other applications of the basic mechanic.
  - <u>Example</u>: Boom Blox
    - Point blocks, hazard blocks, powerup blocks, etc.

Achieving optimal challenge

- Several different types of challenge elements.
  - Example: enemies and bosses.
- "Optimal Flow"
  - Technique for increasing difficulty level
  - Helps player acquire and enjoy new skills
- Difficulty elements
  - Reflex skills
  - Enemies vs bosses
  - Adaptive AI
  - Video game clichés
    - Jumper levels, protecting the weak, locked room, stealth, timed levels, etc.

Difficulty

Frustration

Boredom

Time
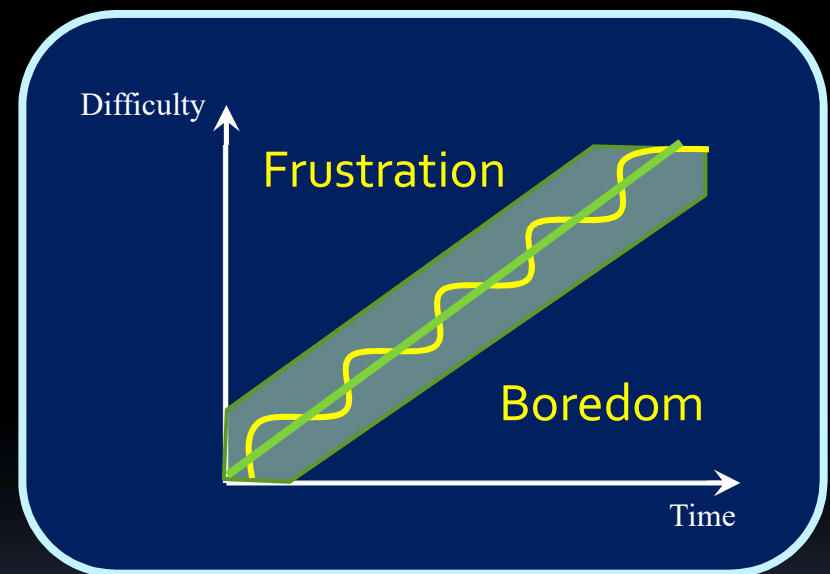
Challenge in different forms

- Need to introduce the challenge elements in different ways, depending on audience and domain of game.

- Examples:
  - Strategy games
    - Problem-solving
    - Using environment
    - Cooperation

  - Resource management games
    - Ammunition/items
    - Health
    - Money
    - Time

Games pictured here:
Machinarium, Civilization

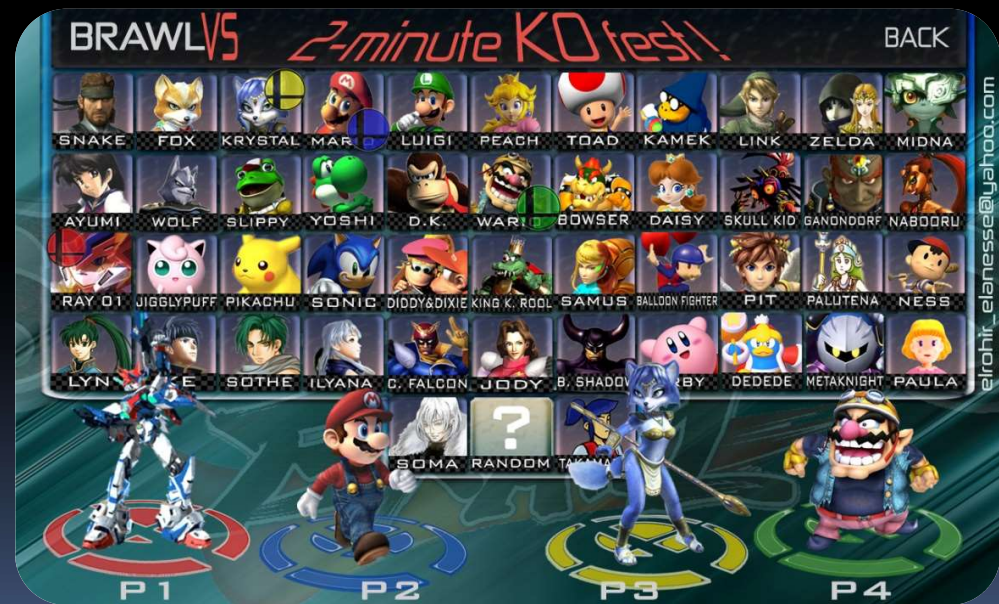# Example: Warcraft 3

- General Gameplay

Example: Warcraft 3

- Tower Defense

Striking a Balance

- Balance is necessary when multiple options (like strategies and characters) are available.
  - Need to make sure that no characters have unfair advantages.
  - Also ensure that each player type can win multiple ways with multiple characters.

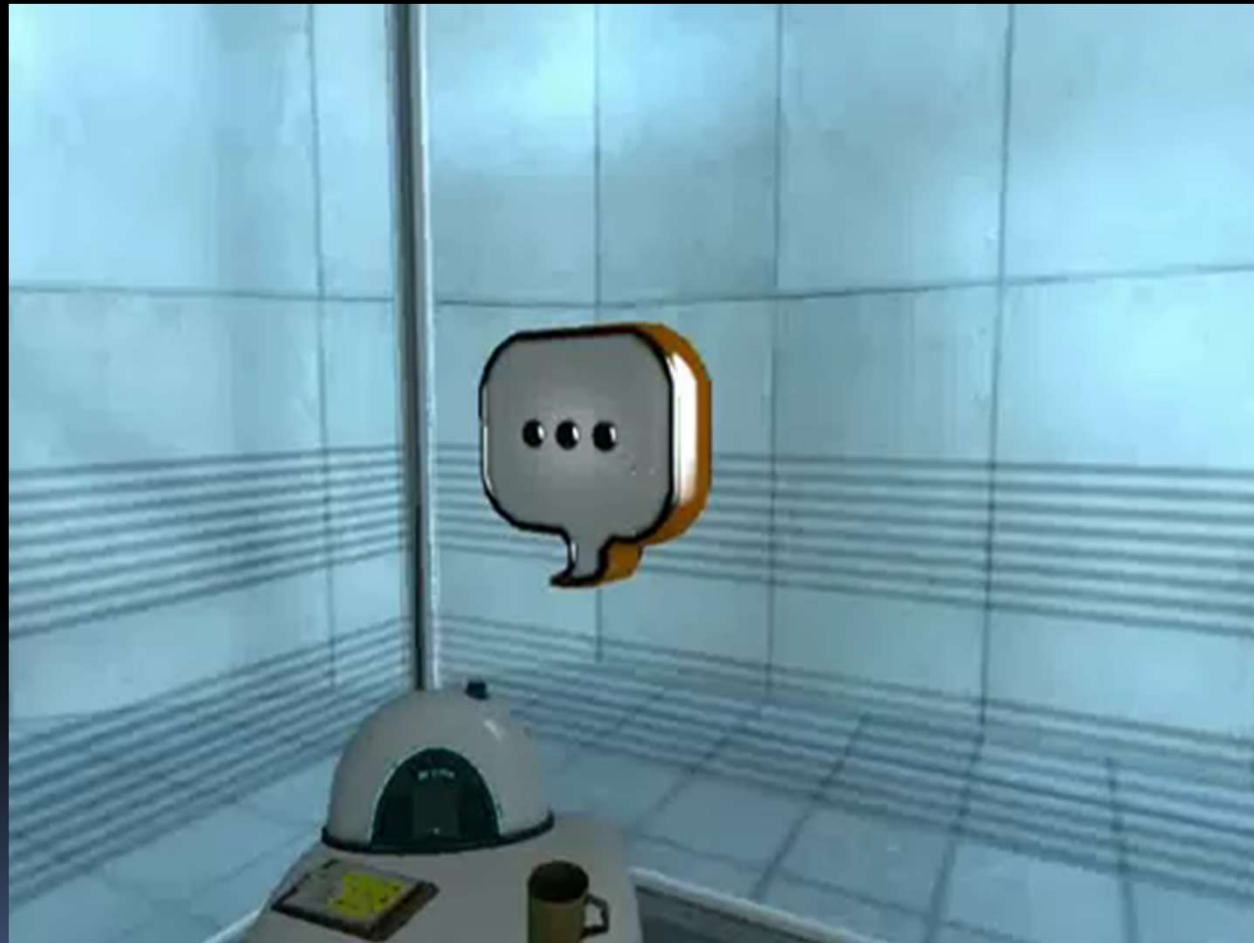*Games pictured here:* *Super Smash Brothers (sort of)*

Playtesting (QA)

- Lesson #7:

  Playtest. Playtest. PLAYTEST.

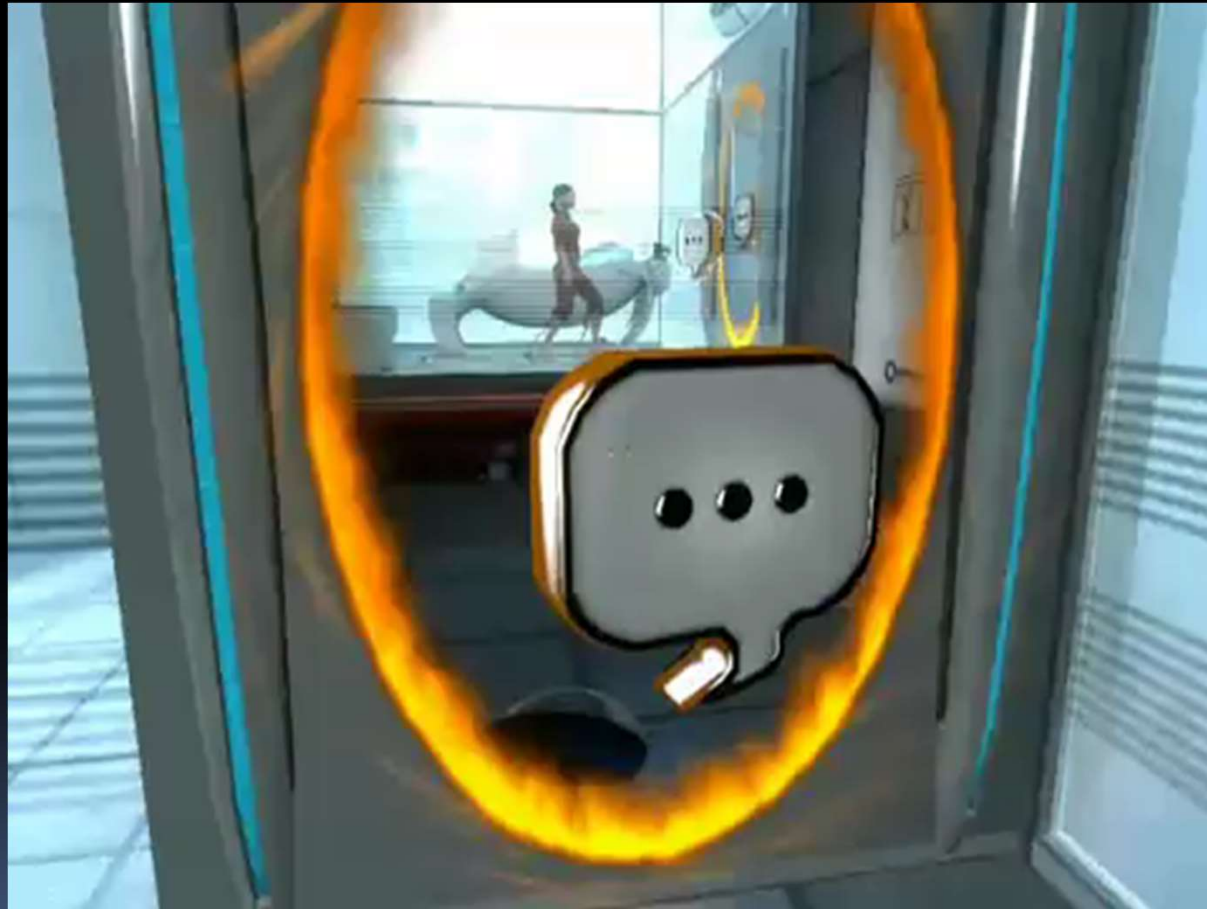- Playtesters can spot potential issues that developers aren't able to anticipate.
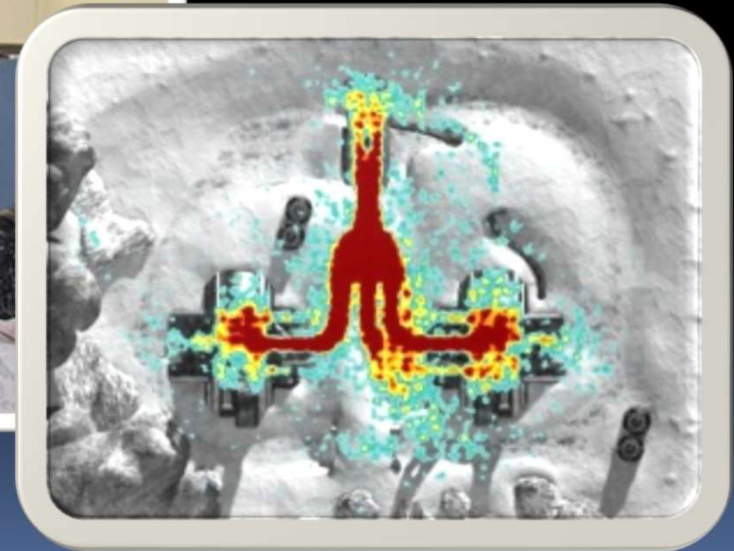
Games pictured here: Halo (heat map)

Example: Portal (clip 1)

Example: Portal (clip 2)

Example: Portal (clip 3)

Polishing Look and Feel

Immersion

- Immersion is a key goal of your game.
  - Enhanced by cohesion and consistency.
  - Disrupted by distractions and glitches.

Some notes on immersion

- Immersion ≠ Realism
  - Need aspects of both realism and "unrealism"
  - "Unrealism" allows players to interact with a consistent, imagined world.
- Achieving immersion:
  - Well-designed environment
    - Visual cues
    - Physics
    - Interactive/destructible
  - Consistency!
  - Freedom
  - Customization
    - e.g. Sims

Stimulation

- Stimulation is the most obvious game component for most people.
  - However, people often misunderstand "stimulation" to mean the selling features of most action movies.
- Stimulations is a more general term, connected to the senses:
  - Visual & auditory
    - Graphics
    - Sound effects
    - Responsive environment
    - Non-trivial death
      - Visual markers, rituals

Games pictured here: Dance Dance Revolution

Street Fighter IV

The importance of music

Pictured here: Video Games Live

Stimulation

- Other aspects of stimulation:
  - Physiological arousal
    - Adrenaline
      - Capilano bridge study.
    - Physical activity
      - DDR, Kinect games.
    - Humour
      - Makes games "stickier".
    - Emotional response
      - Fear, social stimuli.

Games pictured here: DDR, *Shadow of the Colossus*

Other things to consider

Time

- Lesson #8:

> Prototype early, and always have something working.

- All of these factors can be enhanced to the fullest, given unlimited time.
  - Therefore, time is an element that has to be considered and allocated to a game, just like any other.
  - Beware feature creep!
- We'll get into time and project management for games later in the course.

What Can Make A Bad Game

- Bad controls
  - Bad interface
  - Cryptic user menus
- Bad planning
  - Bad directions for user
  - Poor respawning
  - Stupid cameras
- Poor gameplay
  - Repetitive tasks
  - No challenge / unbalanced players
  - Poor AI
  - Unethical games

- Not meeting expectations
  - Deviating from past versions
  - Not meeting user expectations
    - Mismatch with demos/trailers
    - Too much hype
  - Untapped potential
  - No target audience
- Severe penalties
  - Weak characters
  - Severe death
- Game assets
  - Annoying graphics and sound
  - Unrealistic environment/ characters (e.g. bad physics)
  - Irrelevant content

Case Study #3: Grand Theft Auto

Case Study #4: Reward Points