Ludology
Don’t forget to fill this out!

http://tinyurl.com/404InfoForm
Ludology: Psychology of fun

- The fundamental purpose of games is to make a “fun” experience 😊
- So what makes them “fun”, exactly?
Case Study #1: Angry Birds
Case Study #2: Pokémon Go
Rules to a good game

- So how do we determine what goes into a good game?
  - Focus groups?
  - Case studies?
  - Expert analysis?
  - Empirical research?
  - Blind luck?
From analysis to design

The main question to answer is:

How do you make a fun game?

For this course, we provide this advice:

- Consider your audience
- Determine what kind of experience you want to create
- Construct that experience, layer by layer.
Step 1: 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 you 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 role of producers

- Producers are responsible for understanding what will make this game distinctly fun.
  - Need to understand the game’s subject matter.
  - Need to know the gamers.

- Also responsible for managing the team.
  - Communicating the goals and priorities of the game.
  - Organizing the tasks and team members.
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.
Lesson #1...

Nobody wants to make a bad game.

- Famous game design quote:
  - “Games are never finished, just released”
Games pictured here: ET: The Extre-Terrestrial, Charlie’s Angels, Sonic the Hedgehog (2006), Pac-Man (Atari 2600)
Producers vs Marketing

Producer side
- Considers interests of target demographic to make game.

Marketing side
- Determines target audience of existing game.
  - Focus groups
  - Playtesting
- Promotes to this audience
  - Appeal to loyal fans
  - Appeal to new audiences
Step 2: Pick an Experience
Lesson #2

Most games have the potential to be fun.

- There are general rules (like the ones provided here) 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 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 Damacy
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
A word of caution

- It’s important to make your game unique at this stage, and avoid being derivative.
- Avoid the temptation to look too hard at existing games to find inspiration for yours.
How do we know what works?

- Rapid prototyping:
  1. Agree on a new and innovative idea.
  2. Make it quickly.
  3. Playtest this game.
  4. Iterate:
     - If game isn’t working as hoped, return to Step 1.
       - Note: Don’t look back!!
     - If the prototype looks promising, only keep what works and take out the rest.
     - Add features with each iteration.

- Do One Thing Well.
A game is more than a set of features.

Creating a good game → A set of game features

A set of game features → Creating a good game
Deadly feature creep

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)
Rocket League Trailer
Games pictured here: Prince of Persia 2: Warrior Within, Duke Nukem Forever, Bomberman Ascension, Shadow the Hedgehog
Step 3: Construct the Game
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.
User interfaces for games

- Lesson #4: 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!
Controls

Lesson #5:

Things to consider when setting controls:

- Responsiveness
  - Sensitivity
  - Speed
  - Simplicity
- Power
  - Accuracy
  - Orthogonality

If the players wants to do something, let them do it.

Games pictured here: Warcraft 3
Example: Assassin’s Creed
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
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
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

Lesson #6:

- Constant feedback is essential:
  - Reinforcing behaviour
  - Indicating progress
  - Providing stimulation

- Feedback needs to be visual, auditory, sensory, olfactory...whatever you can manage.

If the player is doing well, tell them. CONSTANTLY.

Example: Boss battles
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

CSC404: Video Game Design © Steve Engels
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.
  - **Example**: 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.
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:

- 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.

Prototype early, and always have something working.
Psychology Principles

- **Classical conditioning** (Pavlov)
  - Pairing two stimuli together, one of which generates a particular response.
  - **Result:** Both stimuli generate the given response.
Psychology Examples

- Operant conditioning (Skinner)
  - Pair certain actions with either reinforcement (positive or negative) or punishment (positive or negative).
  - Key for understanding elements of game addiction.
Psychology Examples

- **Capilano Suspension Bridge Study**
  - Illustrates “misattribution of arousal”.
  - Subjects were interviewed on the Capilano bridge, or on a different bridge that was much more sturdy.
  - Results show that participants attributed state of arousal to interviewer, not their location.
  - Principle can be extended to active games as well.
Psychology Examples

- **Cognitive Dissonance**
  - People alter their belief system to fit with their actions or other conflicting beliefs.
  - Festinger and Carlsmith: Subjects were instructed to perform a task, where some were paid and some weren’t.
    - Unpaid subjects attributed their actions to their intrinsic motives.
Psychology Examples

- **Social Psychology**
  - Halo Effect
    - General evaluations of a person lead us to assume things about their other characteristics.
  - Social Identity Theory
    - Players will want to form groups and identify similar players in multiplayer situations.
  - Conformity Bias
    - People tend to go along with the group, even when the group is wrong.
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