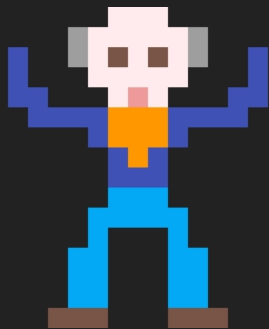# Be Ready to Present Your Prototype!

War!

(I need a couple of volunteers)

Skill vs. Luck

What are some games that:

Mostly rely on skill?

Partially skill and luck?

Entirely based on luck?

Difficulty

Let's Discuss!

What is difficulty?

What makes something difficult?

Twinkle Twinkle

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The Flight of the Bumble-Bee
for piano solo

piano arrangement
by Fabrizio Ferrari

N.Rimskij-Korsakov   (1844-1908)

Allegro Vivace ♩=200

www.virtualsheetmusic.com
1

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Difficulty in Video Games
(user selectable)

Difficulty (user selectable)

Difficulty (user selectable)

Difficulty (design decision)

Assist Mode allows you to modify the game's rules to reduce its difficulty. This includes options such as slowing the game speed, granting yourself invincibility or infinite stamina, and skipping chapters entirely.

Difficulty (design decision)

Celeste was designed to be a challenging, but accessible game.
We believe that its difficulty is essential to the experience.
We recommend playing without Assist Mode your first time.

Difficulty (design decision)

However, we understand that every player is different.
If Celeste is inaccessible to you due to its difficulty,
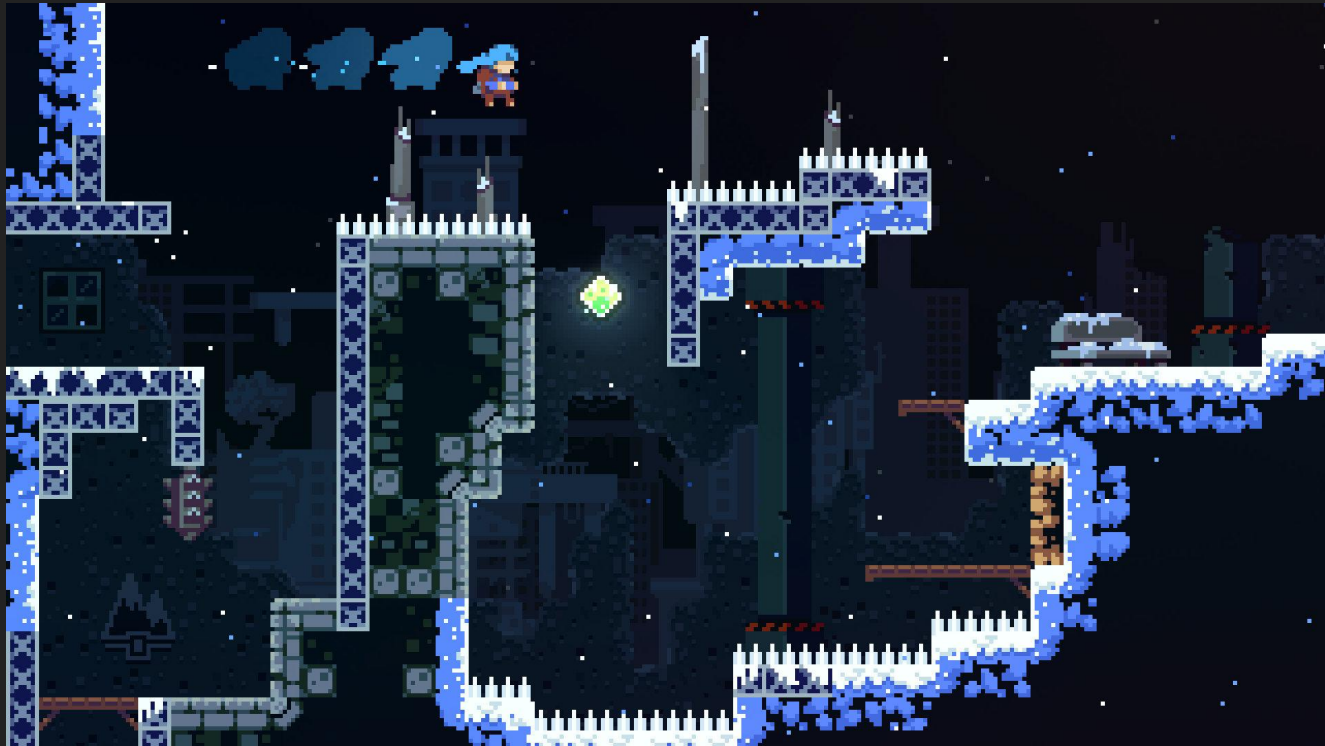we hope that **Assist Mode** will allow you to still enjoy it.
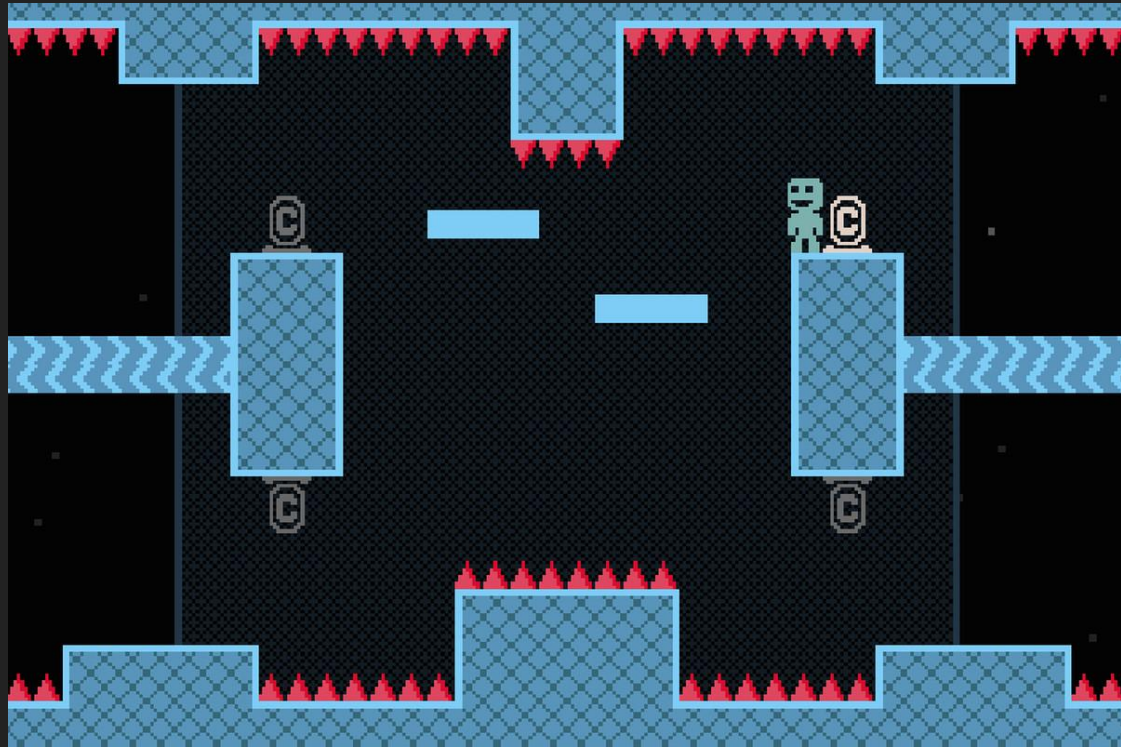
Difficulty (user selectable)

Difficulty settings can help with replayability of some games (or bragging rights)

Difficulty as an explicit design decision

Difficulty (design decision)

Difficulty (design decision)

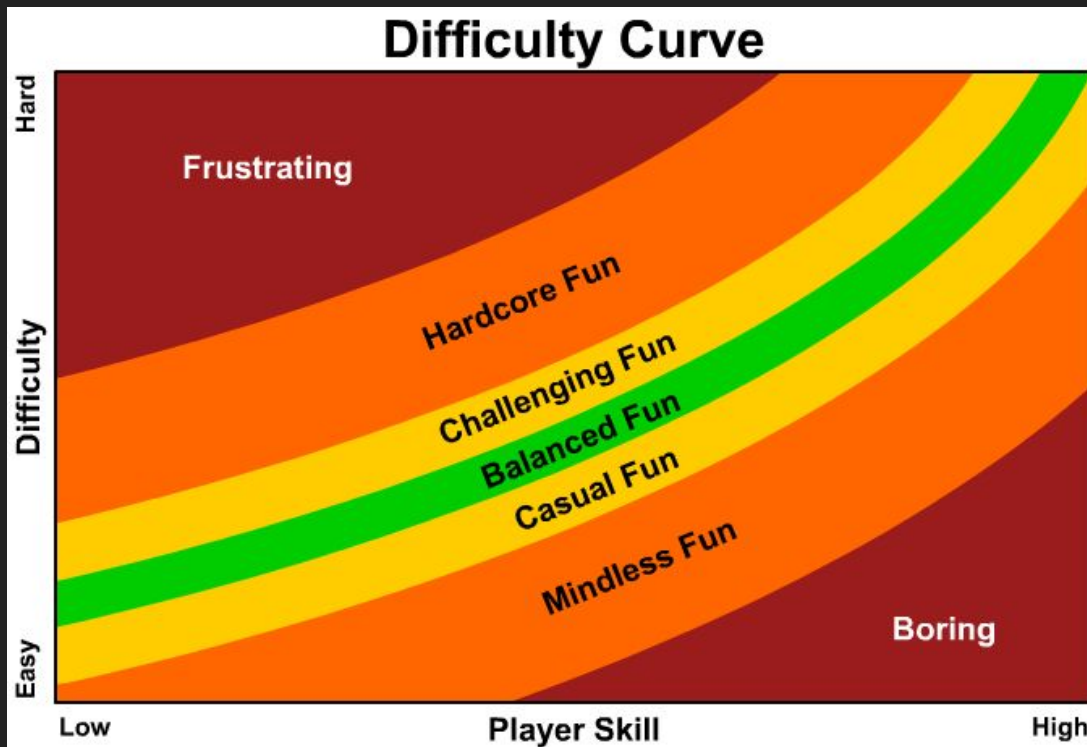# Difficulty (design decision)

Difficulty (design decision)

Difficulty (design decision)

Balancing Difficulty

Balancing Difficulty

Balancing Difficulty

Target Audience
What skills does your audience of players already have? Have they experienced similar games before?

Ramp Up (carefully)
Players will get better as they go so the difficulty needs to grow with them. Be careful not to over do it!

Reward with Challenges
Reward dedicated players with tougher challenges, not by making the game easier. New mechanics can offer new types of challenges.

Dynamic Difficulty

Without explicitly telling the players, some games will make run-time adjustments to settings such as:

Player power/damage
AI power/damage
AI Health
Rate of hits/misses
Frequency of power-ups
AI aggression level
Reduce clumping/swarming of AI

Dynamic Difficulty

Resident Evil 4 employed a system called the "Difficulty Scale", unknown to most players, as the only mention of it was in the Official Strategy Guide. This system grades the player's performance on a number scale from 1 to 10, and adjusts both enemy behavior/attacks used and enemy damage/resistance based on the player's performance (such as deaths, critical attacks, etc.).

https://en.wikipedia.org/wiki/Dynamic_game_difficulty_balancing

Other games that are **difficult** and what makes them difficult.
Are these games fair? Why or why not?

Indeterminacy

Heuristics (again)

Positional Heuristics
What is the current state of the game - Who is winning and by how much?

Directional Heuristics
What strategy should I follow - Which move should I make next?

Players get better by **learning** more sophisticated **heuristics** for a game.

Sources of Indeterminacy

Dice

Shuffled Cards

Random number generators

Hidden Information

Humans!

Randomness
(in multiplayer games)

Generally players in the lead will try to avoid (or even stop) any randomness or indeterminacy while players falling behind will **try their luck**.

Randomness (level generation)

Fairness

Communicate difficulty to the player clearly and your game will be fair regardless of how difficult it is.

Fairness (Catch-up Mechanics)

Fairness (Catch-up)

Design Decision (mechanics)

Some games offer a catch-up mechanic for players who have fallen behind. Games such as Chutes and Ladders. Some video games may introduce artificial luck such as increased frequency of power-ups.

Randomness

A random change to game state typically will be enjoyed more by losing players than winning players.

Fairness (Catch-up)

Politics (metagame)
Multiplayer games where players can affect the success (or failure) of other players may have a meta catch-up feature due to players picking on the leader (or the ones falling behind).

Can a highly skilled player defend against this?

Fairness (Catch-up)

Catch-up features may keep players in the game longer as there is still a perceived chance to win.

Everyone loves a good underdog / come back from behind story.

Having these features highly depends on the target audience, type of game, length of game and other characteristics of your game.

Getting Over It (Demo)

Prototype 4

(Due next week)

Let's review the requirements!

Fast Prototype!

Update War to be a game of skill!
Try different variations.

20 minutes to make and **play** your game!