# Proposal

Objective: simple 2D platformer game

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The inspiration comes from platform games released by game companies and web games created by independent developers. We plan to create a 2D platformer game. In the first stage, the basic character function we currently plan is jumping, and the interactive elements in the scene will be platforms. In this stage, the main challenges are physics effects and collision detection. Physics mainly involve adjusting movement speed and implementing gravity, while collision detection mainly focuses on whether the character can stand on the platform, whether the character will get stuck in the platform when falling after a jump, and other related issues. We plan to use a library specifically designed for developing HTML games (for now, our choice is phaser.js). The main challenge here is learning how to use the library and reviewing its documents.
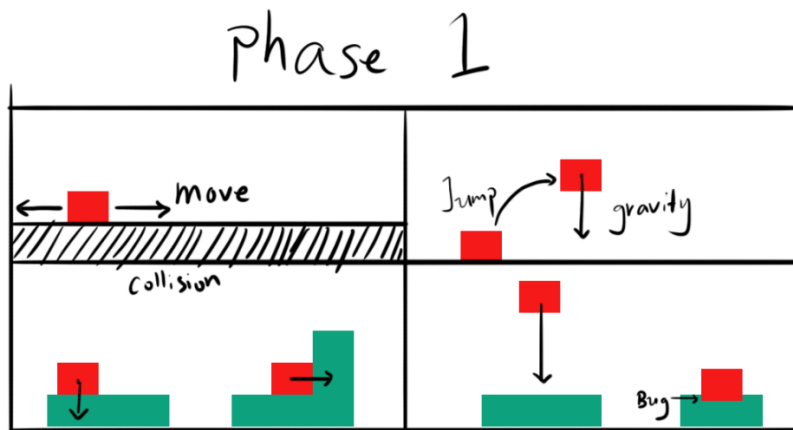
In the second stage, we will first import character animations, backgrounds, and a series of other basic assets. The challenge will be learning the import process and searching for free assets. (For instance, how to play the character's movement animation when the movement key is pressed.) And then, we will determine the next steps based on the completion time and progress. If the completion rate is low or we have trouble using the library, we will focus on refining the jumping mechanics. Character movement may incorporate friction, and interactive elements in the scene will primarily revolve around traps and mechanisms. The difficulties for this part are the implementation of the mechanisms and hurt system, for example, how to deal damage to the player when they touch a trap, and how to make a door open when they active a mechanism. If the progress is good, we will consider adding a combat system, with enemies as the main interactive elements. The challenges here include creating a combat system, detecting hits, determining enemy reactions after being hit, and setting up enemy patrol routes.

phase 2
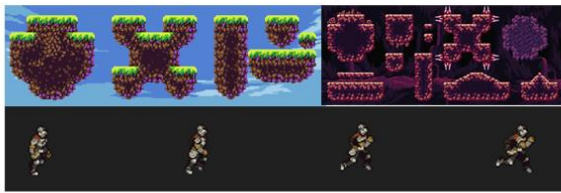
Assets

Basic map element
- Character
- tiles
- Background

Option 1

elements
- traps
- mechanism
- unlock route

Option 2

- enemies
- Combat System
- enemies' AI
- enemies' reaction

In the third stage, the focus will be on map layout based on the progress of the

previous stages, we will decide whether to create a single large map or multiple

scenes. Potential challenges include:

1.Whether to implement camera follow?

2. whether to create saving points?

3.What does the enemy respawn system looks like?

Next, depending on the available time, we will decide whether to add a UI. In the

original design, the character's injury would directly result in a game over, so a UI

was not necessary.

The fourth stage will only take place if we have sufficient time. In this stage, we

will add abilities such as double jump, slide, and dash. A potential challenge is that

these mechanics may trigger unexpected bugs, such as getting stuck inside walls.

phase 4

Skills

double Jump

dash

slide