CSCI 4120 Project Phase 2 Report

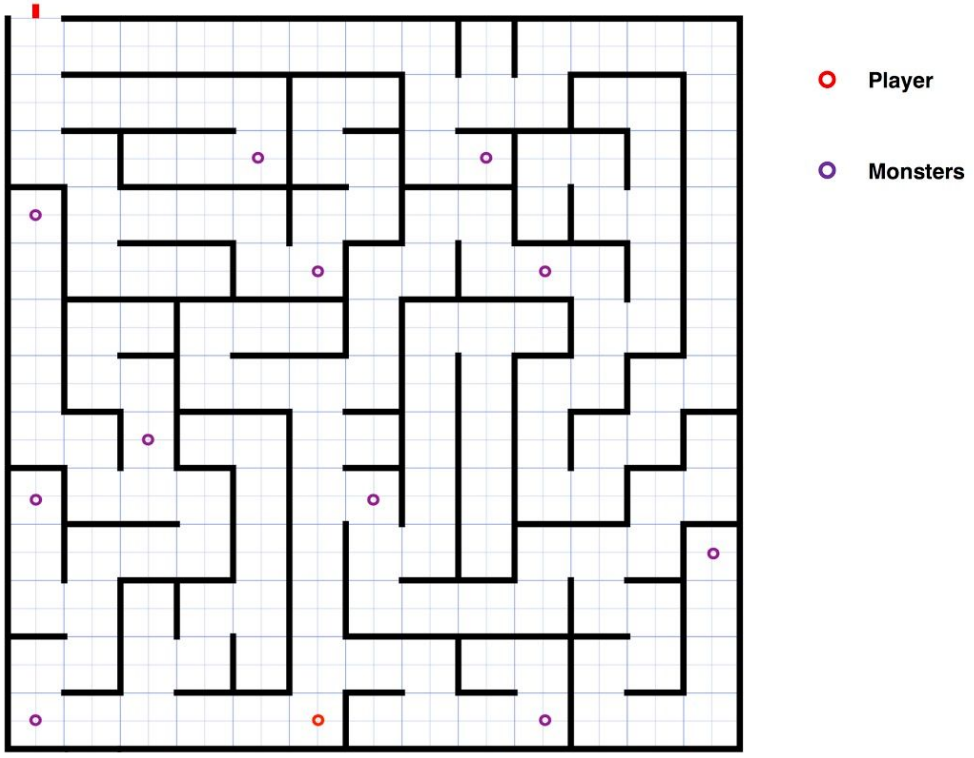
Group 2
Yi-Hung, Chou 1155070203 Yu-Tang, Shen 1155070292
Suen Ka Leong 1155062592 So Hon Chuen 1155062753

Will Hero

Premise

In Will Hero, all the creatures are always jumping, they can either hop on a same spot or jump toward any direction. The player is settled in a maze like scene, and the goal is to escape from the maze; while there are monsters in the maze that will attack the player by jumping toward them.

Fig.1 Overview of the game[1]



[1] https://openclipart.org/detail/247105/coding-maze

Fig.2 Sketch of Hero (Player)

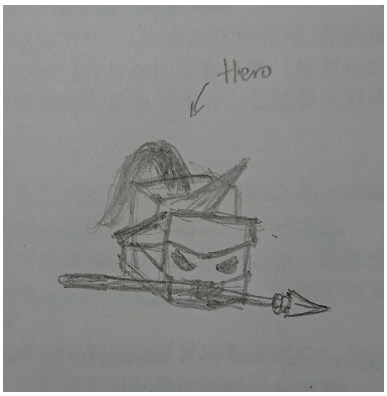
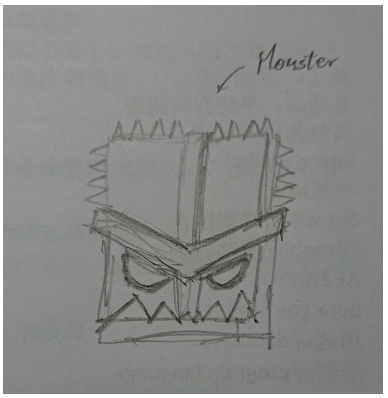


Fig.3 Sketch of Monster



Intended Audience

The game players who are interested in strategy game would be “Will Here” intended audience. Will Hero requires the player search and finish some task for finding the way to escape the maze. Problem solving skills and creativity are crucial in the game for passing the game stage. This kind of features would be a huge attraction to the targeted players.

Genre

Strategy, Platform Game

Target Platform

PC would be the game platform, as the game design is 3D game and basic keyboard and mouse are required for playing the game.

Story

Will Hero is set in a romantic jumping world. Creatures in this world don’t walk, but jump and jump and jump…

Whenever princesses from the “Love Island” facing any danger, the hero will come out. The player’s character is one of the heroes that willing to save princesses.

On the other hand, devil of the “Green Island” always want to kidnap princesses. They believe that princesses from the “Love Island” can bring them unlimited magic power. On the way to the “Green Island”, the hero grabs the weapon and kill all monsters that blocking his way to princesses.

Let’s jump and save our princesses!

Gameplay

The following is the brief of Will Hero:

After initiating the game, main menu screen will pop up with two options: **Start** and **Quit**. Start will initialize the game from level 1. Quit will simply exit the game.

A jumping her will appear in front of you. Instead of showing the clear routes toward end points, arrow will be created on the mini-map presenting the direction. Players can only see partial map and are required to explore the maze to find the way out. All characters will keep jumping and the only way to control their movement is press arrow key to jump in different directions with limited distances. Moving and viewing direction can be controlled by cursor.

Different types of monsters will be scattered around the maze, preventing the players from getting to the end. Using the weapons or leverage the obstacles or traps, users can dodge or kill these monsters. With higher level, the size of the maze will be increased and the respawned point and end goal will be different. Monsters’ attack speed or strength will be increased as well. Treasure boxes placed on the floor can upgrade your weapons. Each player will carry four different types of weapon which can be switch through scroll wheel. Death of character leads to map regeneration.

Implementation

We used Unity3D to implement this game.

Game Menu

In the game menu, player can click PLAY, to start a new game, or QUIT, to exit the program. With the TextMashPro package, we can easily apply different style on the text displayed on the menu, such as the handover and click on animation.

In Game Menu

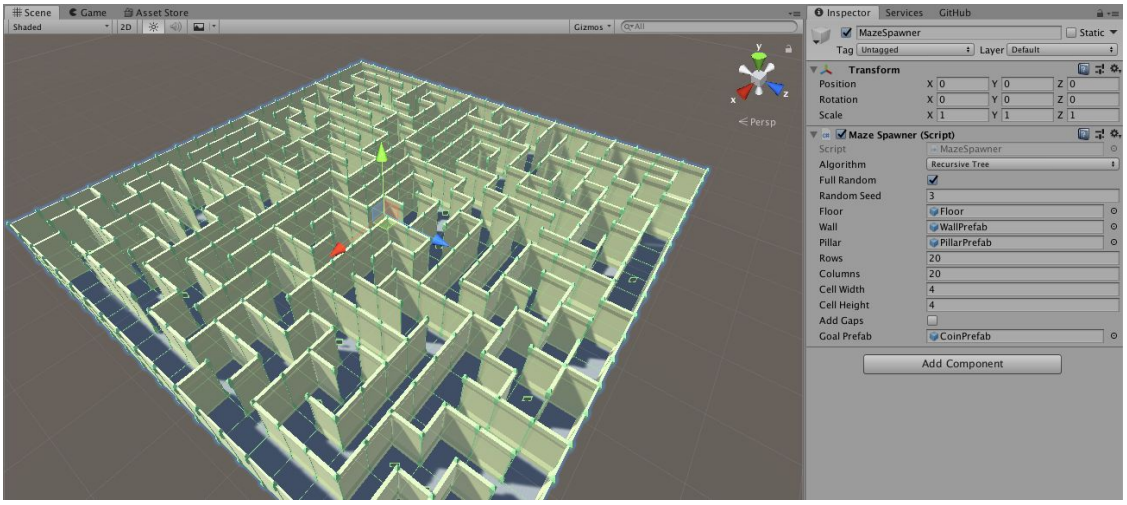
During the game play, when the player finished one level, a winning menu will be shown. The menu provide the NEXT LEVEL button to player, which will lead our player to the next game level (a larger maze map). If the player cannot pass through the obstacles or defense the monsters, they will lose the game. The player can only restart the game from level one.

Loading Menu

In between the menu and game level, there will be a loading screen. We used asynchronous scenes loading function to implement the loading screen. There is also a slider to display the loading progress. By doing so, the laggy animation when loading the scenes will not be shown to our players and enhance the player experience.

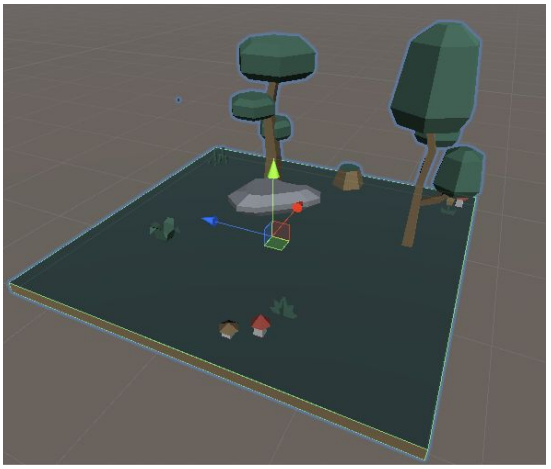
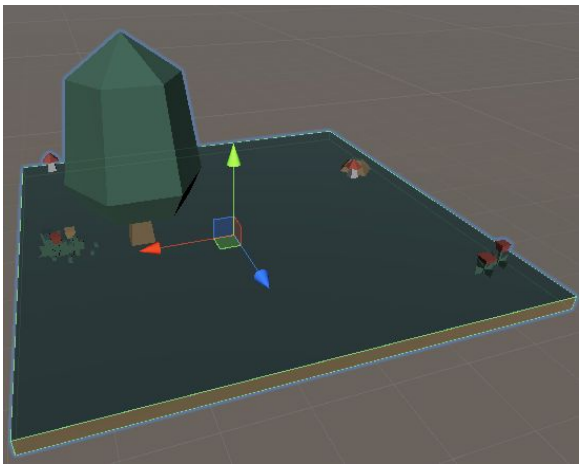
Game Level

We adopt the Maze Generator to randomly create a Maze. By adjusting the variables, we can easily increase the difficulty of the level. The game start in level one, which is a 10 by 10 map. In each level, the size of the map will be increased by 10, i.e. level two = 20 by 20 map.



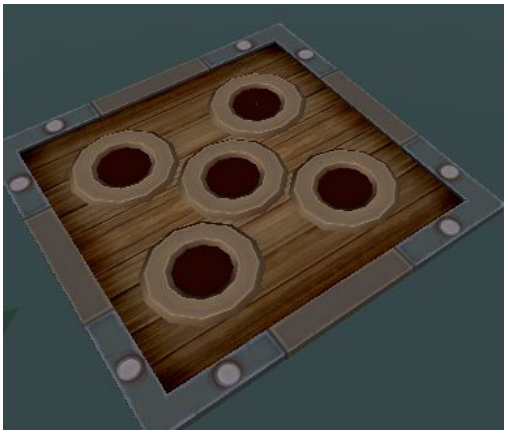
Obstacles

We fit different floor models into the maze generator, so that the map will look slightly different each time. As shown in the following screenshot, those trees will be attached to the map and become one of the obstacles to block our players.

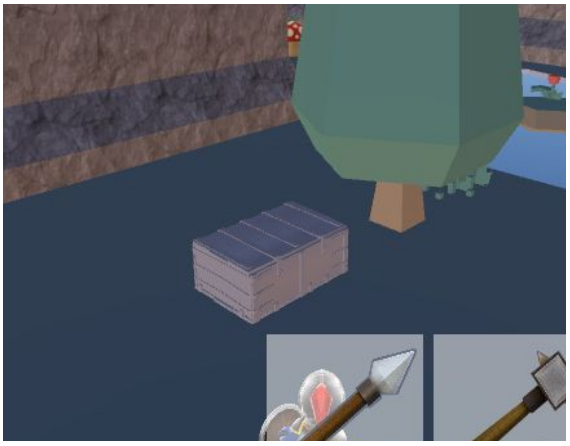
Traps

We added some traps into the map. The players will die and game over when they stepped onto the traps. The following screenshot shows how the traps work. The traps are attached to some floor models, and the traps will be randomly rendered to the map according to the floor model rendering.




Treasure Box

We set up some treasure boxes in the scene randomly. These boxes can upgrade the weapon of hero. When the hero stepped onto the treasure box, one of the weapon will be upgraded.

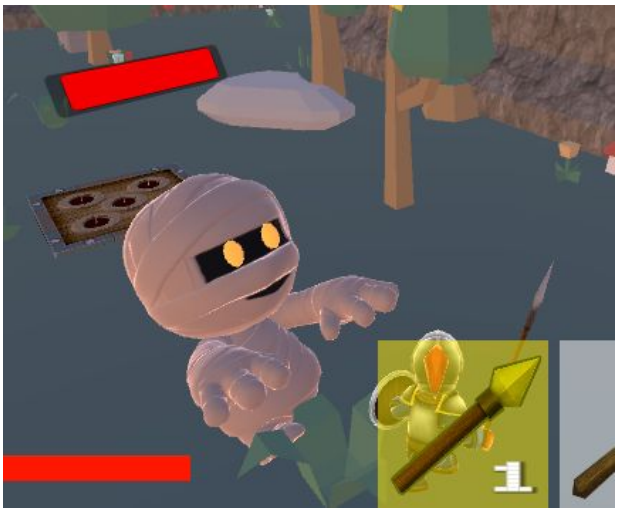


The weapon contained in the treasure box will pop out after hero stepped on it. With this shining visual effect, player can easily know that which weapon has been upgraded. After that, the opened treasure box will be destroyed.

Monsters

We have three types of monsters: Mummy Mon, Mushroom Mon and Stone Monster . These three monster will be randomly generated onto the game scene. The numbers of monster will be changed according to the current level. Also, there is a health bar on top of each monster.

Different monsters have different ways to attack. For Mummy Mon, it will come towards the hero and attack hero by swinging their body.

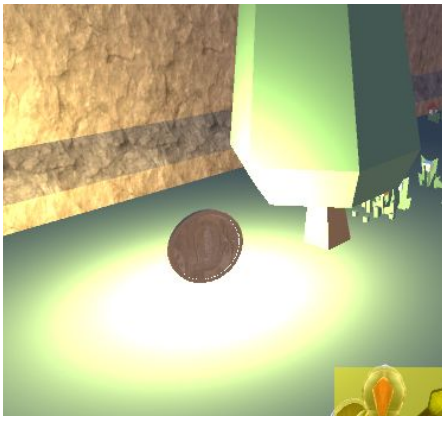


Mushroom Mon will not trace the hero. It will only jumping at its spawned position. But, you will still get damage when you stay on the bottom of it.

Lastly, Stone Monster will fly towards the hero when it saw the hero. It will eject fire balls to the hero.

Goal

We placed a shining coin on the map which represent the goal. Once the player get the coin, they finish the level. After that, they can choose to play with the next level, or exit the game through the pop-up menu.



Game User Interface

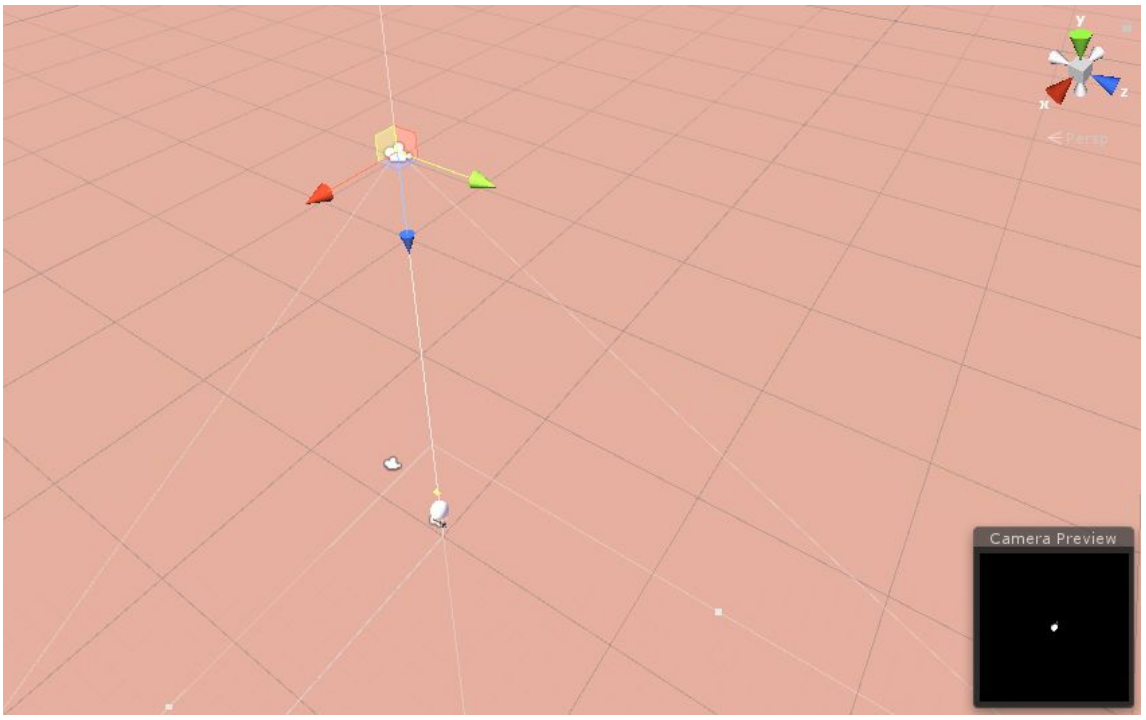
We have provided different user interfaces to enhance the player experience of the game.

Level display

We placed the level viewer on the top left hand corner of the screen. The level variable is saved in “Playerpref”, so that we can get the current level anywhere.

Mini-Map

As we found that sometimes the maze is difficult to cope with, we want to introduce a mini-map to reduce the difficulties of the game. We attached a camera on top of the player, so the the camera can capture the top perspective of the maze map.



The following screenshot shows the example of mini-map in the game play. The mini-map will be shown on the top right hand corner of the screen. Players can identify themselves with the white dot.

Direction Arrow

As the maze map getting bigger, it will be very difficult to find out where is the coin in order to win the level. So, we give some hints to our player by using a direction arrow. This arrow will point to the coin during game play. By doing so, player can follow the information provided by the arrow to win the game more easily.

We separated the direction arrow's camera from the character's camera. So that even the character's camera is blocked by some obstacles, the direction arrow can still clearly observed.

Health Bar

We placed a health bar of the hero on the left bottom corner of the screen. This can clearly show how many HP does the hero remain.

Weapons Collection

We have designed four different weapon for the player. The weapon can be level-up by crashing the treasure box. We provide a weapons collection UI to show the level of the weapon. Also, the weapon using will be highlighted with yellow color.

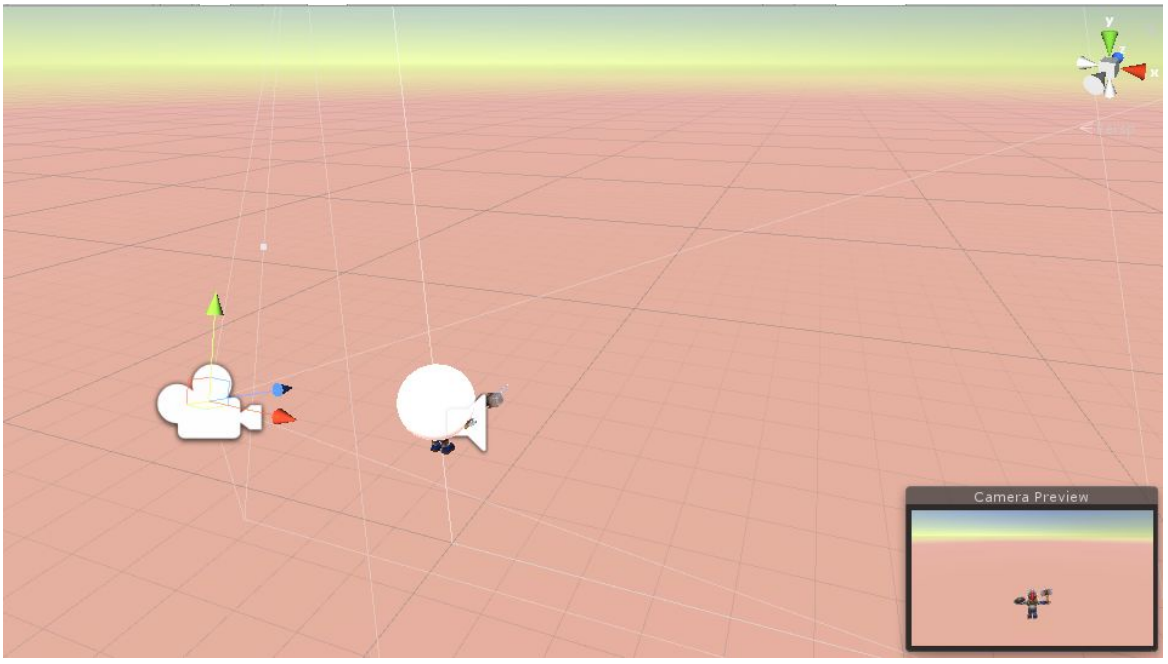
Player

We picked out the hero model from a RPG hero package and attached different weapons to him. During the game play, the player will keep jumping and jumping. Player can only control the direction of jumping of the hero. Player can also use the scroll wheel of mouse to change the weapon.

Camera View

We choose to implement the game in third person perspective. The reason is when we used first person perspective on the hero, the camera will keep jumping. We found that this will make us suffer from dizzy. Therefore, we make it as third person perspective game.

The main camera is attached behind the hero, so that we could have a third person perspective of the hero.



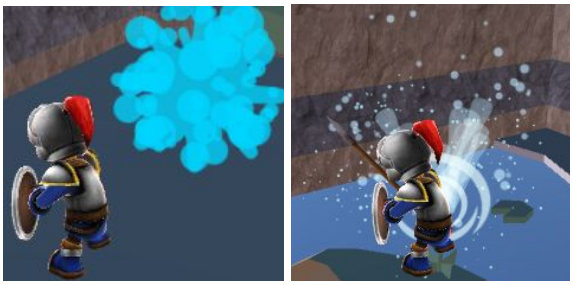
Weapon System

We provided four different weapons to the hero: spear, hammer, sword and shuriken. These weapon can be picked up and level-upped by crashing the treasure box placing in the game leve.




After you upgraded the level of weapon, they have different visual effects. So that the weapons will look more powerful, and player will gain more happiness.

Spear (Water)



Hammer (Stone)

Sword (Fire)

Shuriken (Electricity)

User Guide

Hit the START button and enjoy the game!

Player Control

Look around	:	Move your mouse
Jump forward	:	↑ / W
Jump backward	:	↓ / S
Jump leftward	:	← / A
Jump rightward	:	→ / D
Attack	:	Left Click
Change weapon	:	Scroll wheel

Hints

- Follow the arrow and get the coin.
- Step on those treasure boxes, big surprise there.
- Don’t touch the traps, they are really sharp!
- REAL Hero will not afraid of monsters!

Difference From Proposal

We dropped some of the features that stated in the phase 1 proposal: hero’s Mana, dashing forward, classes of hero and the save & load function.

Hero’s Mana

Ww found that mana is not necessary for our hero in this game. We have not design some special skills attack to our hero. To make the game more simple and clean, we decided to drop this feature.

Dashing Forward

We have tried to implement the dashing movement for our hero. But the result was not satisfy that it was too hard to control the hero with dashing around. It was almost impossible to hit the monsters during game play. What's more, dashing around made us feel extremely dizzy. To protect our player's health, we dropped this feature. The hero will only jumping around in different directions.

Classes of Hero

As we have only designed four different types of weapon, it is not enough to separate the weapons into different classes. Also, we want to show all the designed weapons to player. So, we decided to drop this feature.

Save & Load Function

As we want to make our game closer to the original mobile game, which do not have such save & load function, we just dropped this feature.

Discussion & Conclusions

We have successfully convert the 2D mobile game to a 3D computer game. Yet, we found that this game seems to be better in 2D in terms of player control. As our hero will keep jumping during the game, it is quite hard to control him moving here and there. For example, when we want to step on the treasure box and upgrade our weapon, it takes several attempts to step right of the box most of the time. The reason is that in 2D game, hero can only jump forward. When it comes to 3D, our hero can jump 360° around him. It is much more difficult for player to control.

Other than the problem of 3D, jumping around is also a big question when we implementing the game. This jumping feature is also a reason why we think it is hard to control the hero. Yet, our team believe that jumping is the unique feature of our game, which can make this game more exciting and fun. Although it will slightly increase the difficulty of the game, we still keep this jumping feature.

When we tested the game, we found the map maze map is too difficult to solve. As the level increase, the size of the maze map increase too. We always got lost in the map. So, we decided to give a hint to our player in order to lower the difficulty of the game. We placed a direction arrow to show the direction of the goal. This is very useful for player to win the game.

Finally, we think the most difficult part of implementing the game is the monsters part. Each monster have different way to attack. We need to handle each monster one by on. Also, we spent a lot of time to balance the strength of them. So that, these monsters can increase the difficulty of the game but not too difficult to kill.

Github Link

https://github.com/hank0982/game_project