Project Proposal

Project Description

My game is called “bomb it, and it is similar to the existing “bomb it or “bomber man game. The player can first start with by choosing from 4 characters to play. And then I will be two modes for my game. The first mode is like the usual bomb it game. The player will be put in a random generate maze. The player can control the character by pressing the “up” “down” “left” and “right’ keys. If the player presses the space key, the character will put a bomb in that position, and then the bomb would explode seconds later. There will also be three more AIs control by the computer. If any character is bombed by the bomb, this character died. 4 characters need to kill each other to win the game. A bomb can also let the nearby obstacles (the cupcake) disappear. In the second mode, I call it “coin mode”. In this mode, once the bomb clears an obstacle nearby, the position of original construction would be replaced by a coin. The player gets go to that position to collect the coin. An AI starts from another side of the maze would try to find the shortest path to get to the player and try to kill the player. Once the player gets more than 15 coins, it wins.

Competitive Analysis

As I mentioned above, my game is actually similar to the game online called “bomb it” and “bomber man”. I used to play the “bomb it” a lot in my childhood and that’s why I want to make a similar game to it. The original bomb it game is different that it can have a two players mode and player can select the difficulty for the game. Moreover, in the game, after the player bomb the obstacle, a tool would appear to replace the obstacle. And the original game is not in the background of a maze.

Structural Plan

Currently I have two files for my game. One file is for the main game page, including the maze generator and all the code for the game mechanism. Another file is for the function for the page other than the main game page, including the starting page and the page for instructions and page for choosing characters. Later on , I may also need a file for the “coin mode” for the game. And I would also need a file for my AI algorithm design.

Algorithmic Plan

The most trickest part of my game includes random maze generation and the AI. For the maze generator, I will be using the DFS algorithm. Even though it’s the simplest one I think my focus will be the AI part. For the AI, I will be using Monte Carlo algorithm since the player is moving all the time so that It has a great deal of chance and many possible moves at almost every second. I would try to write an AI that can always find the nearest path to get to the player after each movement of player.

Timeline Plan

I have already finished the basic game play, the random maze generator and the bomb finder mechanism. I will be perfecting my maze generator next week, creating the “coin mode” and also try to write some pseudocode for my AI function or luckily, I can finish the AI part before TP2. After TP2, I will focus on my AI design, and I would want to let 3 AI be differently “smart”. And during this period, I also want to polish my game visual part.

Version Control Plan

When I want to change a large part of my function, I usually write in a new file so that if my change won’t help, I can still work on my original file. My computer has iCloud so that my file always has back up in my iCloud account. I can find all my files in this computer in my online iCloud account and download them to a new device. And I also do a safety submission the day before the due day.

Module List

I will not be using any external module!

TP2 update:

I am working on the AI part this week even though I haven’t made it out. And I am planning to add the music to my game.

Tp3 update:

I will add music to my game and the player can also unmute the game whenever they want. I also add a key pressed so that the player can go back to the instructions page when he or she is in the characters choosing page. And I also change the instructions in character selection page to a picture so that it’s more clear. Moreover, I only had 1 AI before, and I want to add 2 more AIs. And these 3 AIs should have different level of intelligence. And I am also considering delete the coin mode I mention before, because I might need more time in figuring out the AI.