

Game: Minion Factory

Final Documentation

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Overview

Inspired by the minion character from *Despicable Me*, the overarching theme for our midterm project is a tile game called the Minion Factory. The customized tile maze is created by an array list that consists of a variety of obstacles (water, little monsters, etc). The user controlled character (minion) can move along the path and also has jumping capabilities with gravity setting. The game has two stages and the user can only achieve to the second stage if they pass the first one.

Goals



Stage 1. Save Agnes!

Gamer needs to collect all keys (to save Agnes and pass this stage) while avoid falling into the water.



Stage 2. Binge On Banana!

Gamer needs to collect enough bananas falling from the sky to reach banana king at the top of the maze and pass this stage. Obstacles include a new-built little monster that needs to be dodged, in addition to the water obstacle from Stage 1.

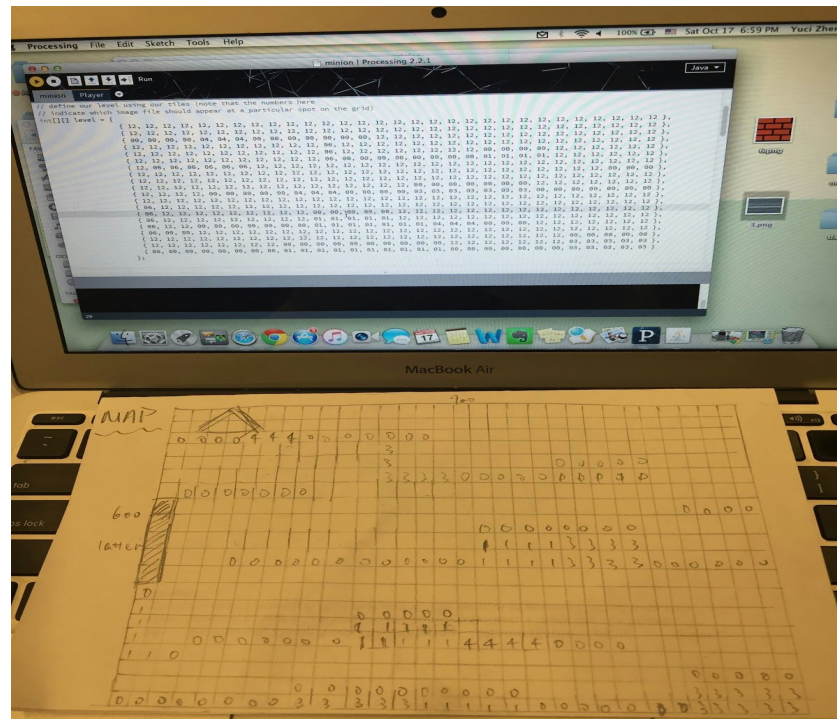
Design Progress

1. First we started mapping out our canvas. We drew a map grid by grid manually and designed the structure of stage one..
2. Filled in all bricks and tiles with our external artwork.
3. Filled in a background image.
4. Added background music “Minions Run Amok”, which is one of the original soundtracks from the movie Minions.

5. Designed our character, and wrote out its movement. There are various characters in this game. In stage one, we have the minion, keys and Agnes - a little girl trapped in the cage. In the second stage, we added bananas that fall from the sky and little monsters that need to be dodged.
6. Implemented different states. We designed five game states during the coding process, including game start page, easy mode, hard mode, instruction page, and game over page.

Most Challenging Issues:

1. We spent a lot of effort trying to figure out the best canvas for our game. The map is made of a 20x30 array list, and we have to determine the location for each one of pictures. Also, in order for the minion to move smoothly, we have to calculate the distance between ground and water, and adjust the jumping power accordingly.



2. We want the keys to be collected by the minion, which means that keys have to disappear after the minion catches them. So, we first plan to use a transparent picture to replace the key when collision occurs. However, the key always reappear after the minion leaves the position. Inspired by "Whack a mole" assignment, we finally solve the problem by using the object oriented programming technique.
3. We spent much time on solving the issue of water fluidity in stage one. Since the water tile is the only GIF image compares to other tiles as PNG images, what we did eventually is we changed all tile images to GIF and only animate the water tile to enable its fluidity.

4. We tried to show a transition image for a specific time range once the player gets to the second stage. However, the image was either not rendering or not disappearing according to our time setting. We eventually solve the issue by adding an additional Processing library.
5. We made sure that the minion has to 'save' Agnes in the end in order to move on to the next stage (which means checking collision with Agnes), instead of automatically going into the next stage after collecting all keys.

What we got done since proposal update:

1. Stage one: instead of putting movable boxes in the map, we decided to put fixed boxes and give the user controlled character super jump power.
2. Stage two: bananas falling from the sky so that the minion can catch as many as possible. Also, we add the enemy to make stage two even harder.
3. Agnes the little girl is trapped in the cage at the end of the 'path'. In order to save her, the minion must collect all the keys in stage 1.
4. Adding start scene, game over scene, and game instruction page

Progress Pictures:

