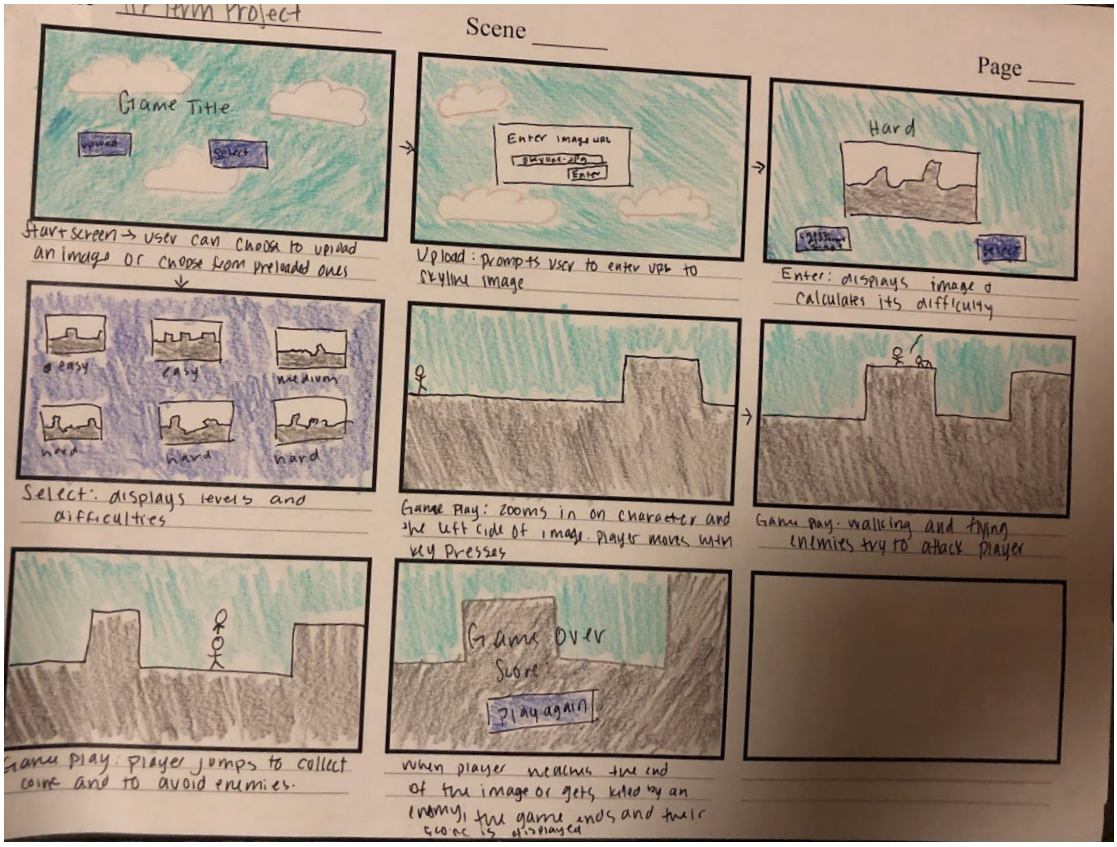
Skyline Sidescroller---a sidescroller game in which the user inputs an image of a skyline or chooses from a library of preloaded images, then moves a character across the buildings, avoiding enemies and projectiles and collecting coins. When the game starts, the sky of the image is replaced by a sky generated by random pixels and blurred. If the player reaches a point in which a building is too tall for them to jump over, the building shrinks, making it more accessible to them. Each time the game is started, a difficulty is calculated for the level based off of how tall the buildings are in the image, and in the end, a star rating is given to them if they are able to make it across the skyline.

I want my game to resemble a typical side scrolling game. In other side scrolling games, I have noticed that the best ones have a storyline, a variety of levels, eye catching graphics, and have a balanced level of difficulty that makes the game both playable, but not boring. Super Mario Brothers does all of these things well. With its many levels, the player will ultimately find a level that is of a difficulty that suits them. With my game, I want the player to input their own level, and I want an algorithm to determine how difficult their image is. However, in order to allow for players to pick a level at their preferred difficulty, I will have preloaded images with their associated difficulties for the user to choose from. Cuphead was a game that I found that the graphics were especially pleasing. Cuphead demonstrates a lot of motion throughout the user's experience that I want to simulate in my game by creating a moving home screen and having object moving constantly throughout the game even if the player is not.

**numbers are a score out of 10

	characters/story	graphics	difficulty	levels
Super Mario Bros	10	10	10	10
CupHead	7	10	10	10
Shovel Night	5	5	4	10



I am going to organize my code into folders for classes and modes, creating separate files for each class/mode and have my main app class be stored in another file.

A tricky part of my project will be to find the skyline on the image, and then make the character walk on top of it. In order to find the skyline on my image, I am going to use openCV to convert the image to grayscale, put a gaussian blur on the image, and use the Canny function to find the lines in the image. I will then use the array from the canny image to determine, for each x value, a y value that the character cannot go below.

I plan to upload my project's progress to google drive.

Module List: OpenCV

TP2 Update: No changes were made.

TP3 Update: Buildings shrink when the player is not able to jump over them. Sky disappears from original image and is replaced by randomly generated pixels that are blurred.