CMPS 160 Final Project
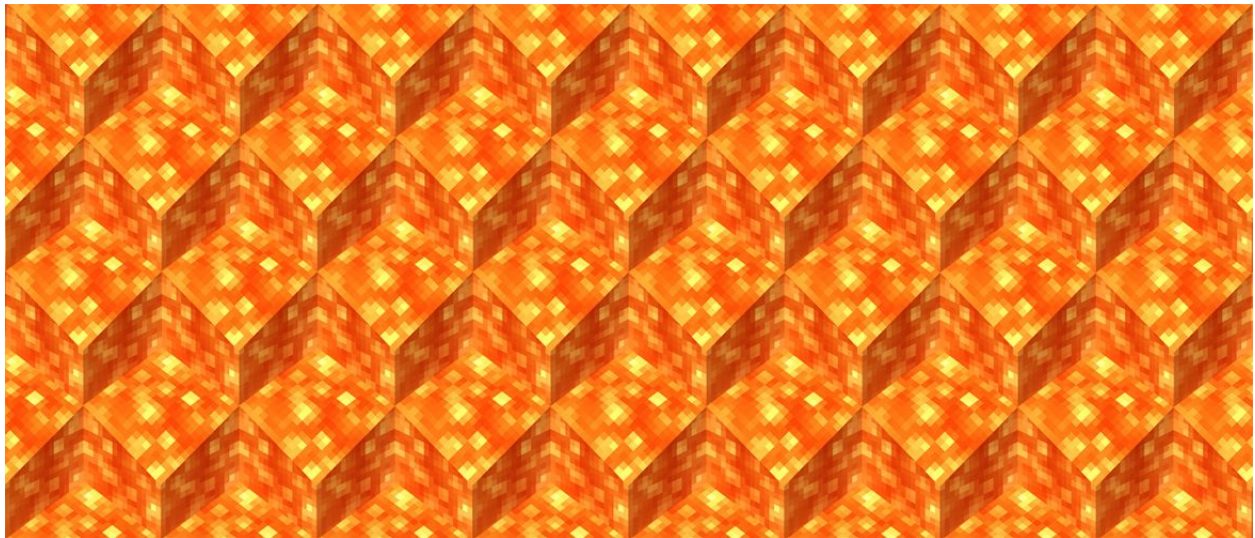
Part 1:

We want to create a maze game with a 3D virtual world. Player will spawn in the start of the maze. In order to finish the game, player will need to reach the goal

Controls: WASD to move forward, backward, left, right
   Arrow Keys to control camera

There will be a move counter on the top left of the screen that will increase with progress. If player move count exceeds 300, game over.

There will be several rooms that the player needs to avoid such as a room filled with lava. The lava would like something like this:

To make it look like the lava is flowing, we will use multiple lava textured cube that rotates in their respected positions.
Player touching the lava will result in GAME OVER on the screen, and user will be able to restart the game by pressing a key. It would look something like this (different design obviously):
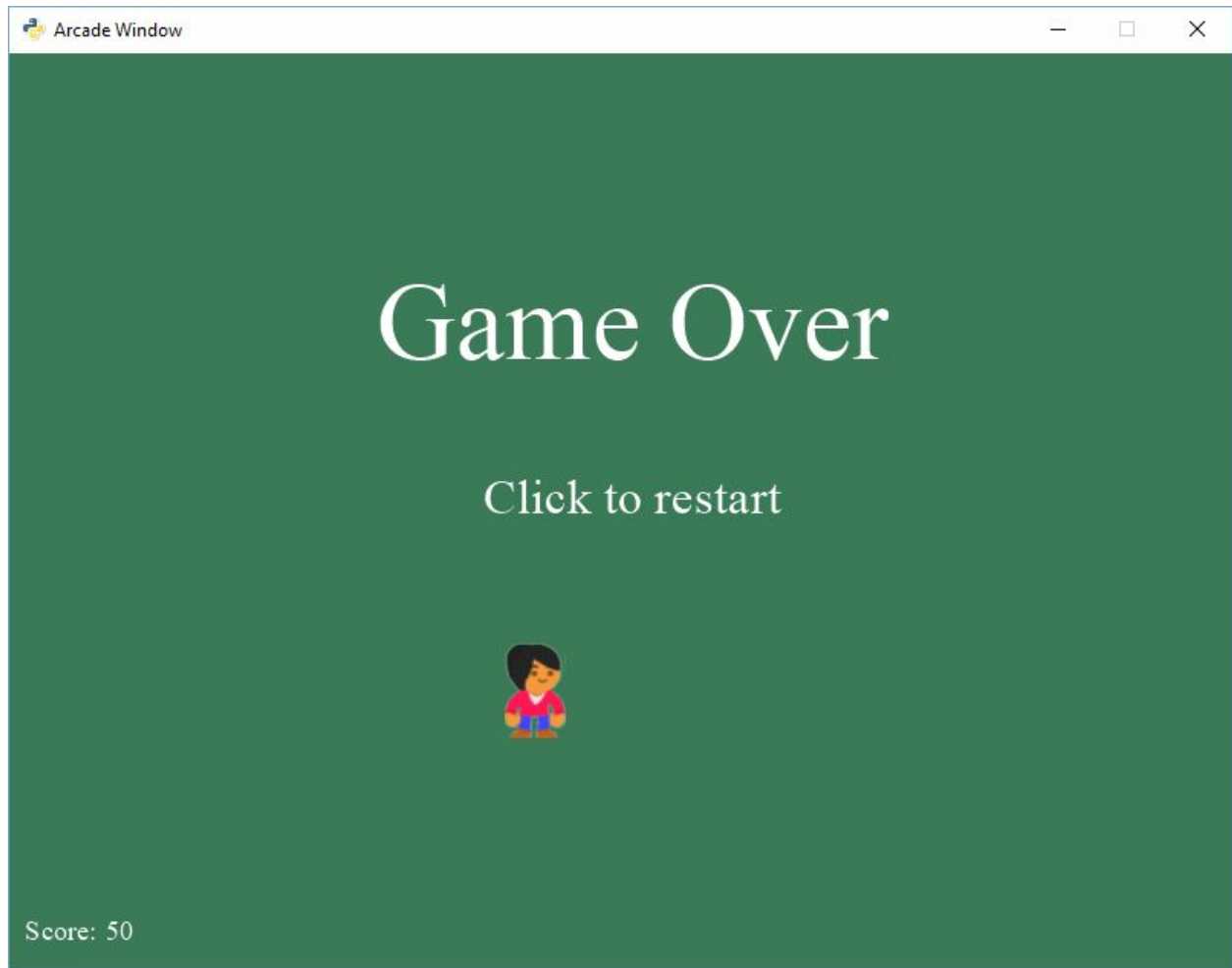
There will be doors that lead to different rooms. Player will be able to interact with the door by clicking on it and opening the door. There will be visual feedback and sound effect. When door is opened the door will disappear. The sound effect will be the sound of a door opening.

There will be a source of light above the maze that will shine. The light will be textured with the face of the trending youtuber, NintenDude.

Features:
Heads-up Display
Water effect
Fire effect
Shadow

The heads up display will work in a fairly simple way. It will keep a counter for the number of steps taken. There are other points that can be earned that will update the HUD. The water and fire effects will be areas that you cannot enter, and entering them will lead to the game over screen to appear. Shadow/lighting will be implemented so that the game has aesthetic and the maze will feel more like a trial than a fairly simple challenge.

The way the player will interact with the world is have a first person view of the maze, and be able to walk around to find their way out. The Lava and Water are hazards and the person should not go into them or else they will have to restart.

Team Members:
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Part 2:

For our CMPS 160 Final Project, we created a maze which gives the player a limited number of moves to reach the goal while avoiding pools of lava.

These are bird's eye views of the maze. It uses lighting to create an alarm aesthetic, such as when in a escape room situation the alarms will flash red all over the environment and you need to escape. The third image is the beginning when you walk out the door. We were aiming to somewhat replicate "DOOM" on the SNES which aesthetically is fairly close (bottom right).

The features we implemented were: HUD, Lava interactivity, Step counter, Goal/Finish Area, Different Camera Angle Switcher, Sound/Music, Float, Death by Lava and Game Over Screen.

The HUD tells the player how many moves they have made to navigate through the maze. Players get 300 moves to find the burning wood to beat the maze and get a very exciting winner message displayed to them. The lava is a hazard for players, and should avoid it if they see it. Running into the lava results in a "Game Over" screen and the player must restart from the beginning. Another aspect of the HUD is the step counter, which, as state before, is limited to 300 steps. If the player does not find the goal in 300 steps or less, another "Game Over" screen will be displayed and will be prompted back to the start to attempt the maze again. The camera angle switcher is for those that want an advantage but it comes at a price. Wherever you are in the maze, hitting "p" will allow you to get a bird's eye view of the map. However, since this gives the player an unfair advantage by seeing the whole map, the player must return to the starting position by clicking "p" and start over. The float feature is one that can be used in many ways: seeing if the path is correct, checking for lava, or even trying to find the exit. But, you can only float up once, trying to float again will lead you to come back down to the ground. The player can change their view using the arrow keys and can move using WASD, which is much more convenient for movement in a maze environment. In the game you will notice there is music featured by GTA, JoJo, The Price is Right and silly sounding footsteps. These effects make the game more entertaining for the player, while there is an objective, the music and sounds give a sense of comical relief. The environment and sounds somewhat counter each other giving the player an experience they will never forget.

HUD: To get the HUD working, we needed to create multiple canvases on top of the one that we already had to display the game. We created multiple functions so that depending on the situation or position of the player, we display the canvas. So using these functions, we were able to create different pop up screens for different events (such as game over and win screens).

Sound: Using HTML and JS, we were able to use the location from the eye and similar to the HUD we were able to play the sound when the coordinates matched.

Camera Switcher: The camera switcher was fairly simple, it incorporated the eye and changed the coordinates in order to give the player a birds eye view.

Float: The float feature is a helper feature for those that are lost and want to see above the map a little. Instead of raising the eye very high like the camera angle changer, it raises it slightly such that it brings the player back to their position to continue on their adventure in the maze.

Lava: In different parts of the map we added lava that the player must avoid in order to complete the maze. Walking into the lava would result in a game over screen prompting the player to start over. We created the lava effect by having multiple cubes rotating in a specific way to have a flowing lava effect. We were able to bring interactivity of lava by making it so that whenever the player's "eye coordinate" matches the location coordinate of the lava, the player loses.

Shadow: We tried implementing shadow, but it just started to end up looking like specular and diffuse lighting which was not beneficial for the final product.

Our plans versus what we ended up making was very different. Our initial plan had many features and graphics implementations as mentioned in Part 1. However, upon starting the assignment we realized it would be very difficult to implement so we simplified it a bit. Instead of doing that, we had a face as the skybox and made the lighting a sort of siren effect. This would give the feel of an escape style of room and would also feel like DOOM on the SNES.

Visual references we have are the similar visuals from DOOM as stated earlier. In the game, when shooting or fighting enemies, there is a red flash going across the screen. In our game, we have a similar red flashing going on during the entirety of the maze, which somewhat replicates the effect DOOM gives. The lighting effect we have is like a siren type of effect to show that you have to try to find the exit of the maze in the least number of moves possible.