Section 1: Description

The purpose of this lab was to create a game like Labyrinth. By doing the lab we gained experience in the microcontroller's light sensor through I2C, accelerometer through an ADC, and the OLED display.

In my lab, I'm able to control the movement of the ball in all eight directions. I can display the different speeds as well on the screen. However, there is a few glitches when it comes to the walls. My marble doesn't go through the bored however sometimes glitches and passes through the obstacles. I have found when approaching the obstacles slowly will cause that part of my code to prevent the marble from passing, I am uncertain of this glitch. The same situation is with the holes and target cell. My game can display if the player has won or lost by saying game over with a red light for losing and a green light for winning on the booster pack. It does take a little maneuvering of the marble around the black holes to see if the marble has "entered" the hole causing the game to end. Overall, my game has the basic concepts of Labyrinth.

Section 2: Using labyrinth data structures

I used the data structures provided to me by accessing various portions of the marble via the structure provided to us. It made it easier to "keep track" of the marble's and obstacle's positions throughout the game. Another struct I used was the different Speeds. I created another struct to handle the various speed the marbles can go. When certain conditions were met, I was able to change the state of the speed of the marble and update the Vx and Vy display accordingly.