Project Title: **Cast Your Heart Out!**

Description:

"Cast Your Heart Out!" is a game where the player must protect himself from hordes of zombies (or some other enemy) by singing notes that correspond to one of three colors (red, blue, green) in order to cast a spell. Based on your pitch (musical note), the game will categorize it into one of the three colors, so that you can output a color. The player will learn more and more spells as they explore the map. A spell is simply a combination of colors which can be achieved by singing.

The endgame is yet to be determined (whether you just keep on trying to protect yourself or if there is some final room to get to). The main concept is just protecting yourself from hordes of monsters by casting spells with your voice, while also discovering more spells across the map.

Similar Games:

survivor.io: This is a game where you constantly defend yourself from hordes of enemies through the abilities you unlock by killing enemies. The endgame is killing the boss of the level, which shows up after a certain amount of time has passed. This game is similar in genre to mine, in the sense that the player is constantly moving to avoid enemies and trying to kill them with their abilities

Wizard of Legend: This is just a cool wizard game that has impressed me with its visuals and combat. I believe that many of my spells will be represented in a similar way as to what is represented in this game (Good visualization of top-down spell casting)

Undertale: This game's exploration component is a drive I want to incorporate into the game. Just like by interacting with random objects in the environment lead to interesting comments by the "narrator", the player will roam around the map trying to find information about new spells they can cast.

Version Control:

Currently, the project is being held in a github repo, which I can access from my terminal (because I initialized git in a local file and linked it to the repo).

Tech List:

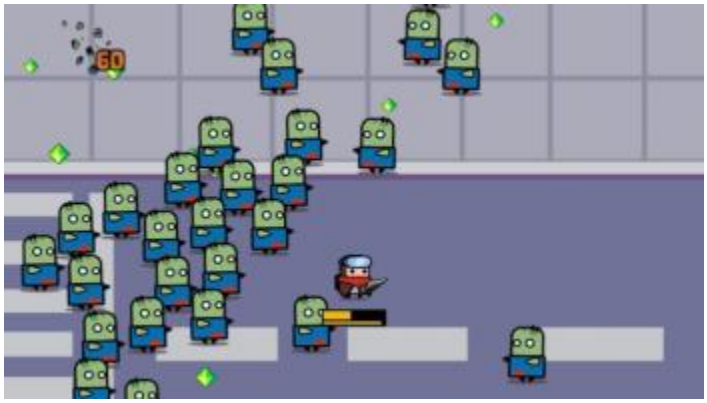
My game will utilize:

- Pillow (for drawing Images)
- Pyaudio (for getting data from the microphone and converting it to frequency)
- Numpy (for making efficient and complex mathematical calculations)
- Find_peaks from scipy.signal (to increase accuracy in pitch detection)

Currently, all of these libraries have been implemented in the game successfully with exception to Pillow. I've just recently realized that CMU graphics's drawImage function is way too slow, and am trying to figure out how to draw an image in an alternative way.

IMAGES BELOW

The concept of **protecting yourself from hordes** is similar to **survivor.io**:



The concept of **casting spells** is similar to that of **Wizard of Legend**:

The concept of **exploration** and **learning** new spells will be similar to that of **Undertale**.