

Functionality

The program is a game where you start at the 'Main Menu' and can select and choose one of the menu options. Selecting 'Start' will start the game, selecting 'Options' will take you to where you can adjust the game volume or see the controls, and selecting 'Credits' will show you the credits for the game and its assets. Upon starting the game the player starts at the opposite end of the screen from the enemy. The player must kill the enemy by shooting pellets, with the spacebar, at them while avoiding the enemy. The enemy and player can move around the screen; although, the enemy will automatically move and will not attack. The player can move around and jump using the arrow keys. Every pellet that hits the enemy adds 1 point to the score, displayed at the top left, and every collision with the enemy deducts 5 points. Once the enemy dies the game ends and returns to the 'Main Menu'.

External Packages

Pygame was the external package used for the creation of this program/game. Pygame is a set of python modules used for the creation of video games. It is free to use and can be used for a variety of projects. It simplifies the number of lines needed to code a game and also does not require a GUI if you wish to not have one. Pygame uses optimized C and Assembly code for core functions to help things run smoothly will not take up too much power/RAM. It is on all OS and platforms and a Pygame creation can function on any even if it was written on a different OS. More about Pygame can be found here: [About - pygame wiki](#) and the documentation here: <https://www.pygame.org/docs/>.

Obstacles

A variety of obstacles/bugs were encountered during the Pre-Alpha production of the game. Such obstacles were figuring out how to animate the sprites properly, fixing errors with the player jumping and returning to the same height and not being stuck above or below ground level, making sure the enemy character did not change sprites, overall menu advancement. Some other ones were getting the background music to work, fixing defined variables, creating a "README" to help the player, and making sure the game loop functioned how it was supposed to.

Future Development

In the future the plan is to add an end screen, tutorial, and also add more levels to the game, increasing the difficulty with each level. There are also plans to add a game volume adjuster and possibly allowing the player to set their own key binding. Farther down the line the game may become a side scroller or a 3D world whilst replacing many of the assets with self-produced ones. A multiplayer version may also be implemented along with controller/mobile control support. Changing up the animations to improve them is also on the table for things I want to add or change.