**Evaluation**

My first objective was to present the user with a navigable user interface for the main menu, settings menu, level selection menu and the pause menu. I have achieved this by creating a full GUI in Pygame with animated buttons for when the user hovers over them and clicks them which makes the user interface very easy for the user to understand and navigate.

The settings menu also provides an easy way for the user to change their controls. This is done by the user selecting the action they would like to change and then pressing the new key that that action will be assigned to. I have also prevented the user from binding multiple actions to the same key.

The settings menu also allows the user to change the volume of both the in-game music and in-game sound effects individually.

The settings menu gives the user maximum control over the game in order to accommodate as many different users as possible.

My second objective was to make implement realistic movement. I have achieved this by using an algorithm that uses the difference in the player’s current speed and their target speed in order to calculate the force necessary to apply to the player. The pseudo-code for this algorithm can be seen in the design section of the project.

I have also created a jump which provides one method of vertical movement for the player. To improve the quality of the jump I have also implemented both Coyote time and jump buffering in order to improve the user’s experience. Coyote time allows the user to jump slightly after leaving the ground. Jump buffering provides a small window where the user can press the jump button before touching the ground and then jump the frame the player touches the ground.

I have also implemented a dash and a wall jump for the player to execute. The dash provides a sudden burst of speed in one direction and the wall jump provides another way for the player to travel vertically. Both of these features allows for complex level design to provide a high level of difficulty. This can be done by increasing the length of the level to make it more punishing if the user fails or by increasing the control and precision the user has to have over the player. This leads into my next objective where the levels should increase in difficulty.