C200-BestTeam Project Report
(Clare, Fred, Lydia)

Project Description:

Title: Rainbow Runner
Description: We are doing a game where we have a sprite that the user will control with the keyboard. The objective of the game is to avoid the lines as the sprite falls while trying to stay alive as long as possible. We (will) have additional features like speed-ups and speedblocks to incorporate inheritance. We will also incorporate a scoreboard/recard keeper to use reading/writing files. Since the sprite is constantly falling, we will use loops to continuously generate lines, we will also increase the speed of the lines for every 10 lines to make the game more difficult.

Ideas About Design:

- Fall Down (iPhone game)
- Refer to ProjectInspiration.py in Documentations for design mockup.
- Refer to projectRequirements.txt in Documentations for project requirements.

Troubles Along the Way/Issues We've Encountered:

In the beginning, we didn't really know how to beginning, in terms of splitting up the work so we work effectively. We tried creating separate branches in Github for each team member, while also having a master file where the code works without error. This didn't really work because we were all on different pages and didn't know what was done or who needed help. We quickly realized that this method didn't work, so we started assigning tasks to each other in lecture/lab (when we were all together) and then if we didn't finish in lab, we would take it home and work on it separately. If anyone needed help along the way, it was easy to connect each otehr for assistance by collaborating on a group chat through Discord where we could share our screens to each other.

Another issue that we had was creating rectangles as objects. At first we didn't know if we wanted to use the builtin pygame functions/shapes or create our own. To incorporate inheritance, we had to create a Shapes class for the additional features we wanted to add. The additional features are almost like powerups that the player can collect throughout gameplay. The features appear on the screen as a shape, such as a triangle and circle (hence the need to create a superclass).

The third issue we had was with the sprite (which was also drawn through our Shapes class). After creating/drawing the sprite, we had to somehow incorporte gravity in order to allow the sprite to move only on the lines and then drop through the gaps. When we firset figured out gravity, the sprite would drop randomly, regardless of meeting the gap. In fixing this we made two lists of left and right lines (Inbetween those lists, the gaps would randomly generate). This is how we ensured that the sprite would fall at the end of whatever side/line it was on. The fourth issue was/is with our effects file. We were originally going to have the effects of speedups and speed blocks where the sprite's speed would either increase or decrease depending on which shape you encountered. We saved this until the end because we thought altering the speed of the sprite wouldn't be very problematic; however, as we were testing different speeds (before creating the effects file) of the file, we encountered a lot of problems due to the sprite not benig able to catch or to the lines and vise versa (which set the balance of the entire project off). So instead, we decided to change the features either add more points to the player's score as a bonus or decrease the player's score by taking off points from the running score.

Discoveries We've Made:

Throughout the process for this project, we've explored pygame and game design more in depth in order to implement certain features to our game (i.e. fonts, gravity, platforms, etc). Everyone on the team has never used pygame before, regardless of experience with Python, so we all had to familiarize ourselves with the different functions pygame already had/learn how to build our own functions that pygame did not have. Also, we discovered that in order to make a fun game, all you have to do is create a bootleg version/rip off someone else's game idea because what is originality these days? Seriously, it's all about improving what someone else has alrady created instead of innovating an entirely new idea from scratch.

Reflection on the Project:

The project felt very rushed for all of the requirements that had to be included. We wish we would have been given the project at least a couple weeks ahead of time or we wish that we didn't have the written final and or an assignment due at the same time that we were supposed to be working on this project. It was especially hard since one member had to commute two or three hours everyday, so it was difficult to meet up outside of class/lab time. We decided to conquer this problem by using Discord (as stated above in "Troubles Along the Way/Issues We've Encountered”) when we all needed to be together working.

Problems With Final Product:

As stated above, we mentioned that we were trying to figure out the effects (speedups, speed blocks) and that we altered it to increase/decrease the running score of the player. However, we didn't ended up figuring out how to properly implement those effects in the amount of time that was given. So those effects are not in the main game file, however, we do have the file that we created and tried to implement into the game.

Another problem we have with the final product is that since we’re calling the main method inside the start method, if you click anywhere on the screen the main menu will pop up and exit the game.

Other/Additional Notes:

- May or may not try to sell for a few billion dollars.