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Group Final Project

The project we completed is a statistics tracker for the popular game Rocket League. Our idea was approved by Laurel Hilger. Our statistics tracker is a simple GUI with inputs for the five major stats in the game Rocket League; score, goals, assists, saves, and shots on goal. At the end of each Rocket League match the game presents you with your stats for that match. This is where our program comes in. Our program allows the user to input their statistics from each game they play and then click a button that shows the averages of all the five statistics as well as the number of games the averages are from. There is also a button that graphs the last ten inputted statistics for each of the five and if ten games have not been reported it reports the number of games inputted by the user.

To start off the code we started with a basic UI that had all the edit boxes, buttons, and titles that we needed. We then started to write the callback functions for the buttons. The first button that was written was the Enter button. When that button is pressed, a function is called that takes the values from the edit boxes and places them at the end of their respective arrays. The average of the arrays is then calculated. The arrays and averages calculated by this function are used by the average button and graphs button. The process was fairly simple for the average stats button a message box pops up with the averages and number of games inputted. The averages are pulled from another function and turned to strings that are then displayed under the correct title. The same is for the number of games played but the number of games is not updated until the enter button has been clicked with all the edit boxes filled in. The graph button comes from its own call back. The last ten games reported are graphed and if less than 10 are reported it just reports those. Our next challenge was taking user input from the edit boxes. Once the enter button is clicked the average callback function is used to take the user inputted string and convert that to an array. This array is then averaged for the statistics average button. Lasty, there is a reset button to reset all saves stats and games plates to zero. This is the basic overview of how we created our simple GUI Rocket League statistics stracker.

During the coding process we ran into many problems. One of the bigger issues was being able to take the user inputted data form the edit boxes. It was difficult to find the proper command to extract the data. Several variations of the same function were tested, but they did not work. Eventually, the answer was given by the professor. There was a slight error in the way the edit box was called inside of the function. Another issue we ran into was the graphing of the last ten inputted games. To only graph the last ten games we had to implement an if statement. This if statement tells whether ten or more games have been inputted and other graphs the last ten not just graphs however many data points it has. Another issue we encountered was if the user tried to click enter with no values in the edit boxes or characters other than numbers. We solved this with another if statement. The isnan matlab function was used and if the code detects an input other than a number it will display an error message telling you to enter all of the statistics before clicking enter. One of the last issues we had was the differences of running the code on windows and MacOS. There were subtle differences in appearance but the bigger issue was when the average message box was positioned towards the right side of the computer with MacOS the message box would not appear on windows. We solved this but placing it visible on both screens but a more permanent fix is in the works.

In the future if we recognize a repeated task that is made easier by writing a simple code it will be done with hesitation. Making the computer do the heavy lifting so to say. We would be ignorant not to recognize these tasks that would be made easier with Matlab. We are also going to continue to build on this code making it more complex and adding features. The basic structure of this code could also be used to insert values and calculate various different things with them. For example, frequency and velocity could be entered to find the wavelength of a wave.