Term Project Design

The problem I attempt to help is how to create a realistic MLB simulator that uses real MLB data to contribute to gameplay. I used Pygame because the main part of my user interface is the in-game animations. Pygame allows for simple, reliable, fast animation, which really facilitated my game. Pygame also allowed me to structure my screen very precisely, so I put a lot of time and effort into making a beautiful user interface, which varies from game to game based on the teams involved and the victors. The approach I took to solving this problem began with me using Beautiful Soup to extract MLB data from the Internet. I also got the real rosters and lineups for 2017 using Beautiful Soup. I then used the extracted data to create certain attributes for each player, which will be used to affect the gameplay.

To actually begin my program, I created the Pygame class using Lukas’ framework. Once I finished, the problem of collecting the all of the necessary and loading each team, there was the problem of in-game storage. How do I store of this data effectively so the information can be used by the game when needed. I started by creating MLB player and MLB team classes, which loaded the MLB-specific data (the attributes, positions, numbers, etc. for the players and the rosters, logos, team colors for the teams). I stored the MLB teams as individual teams and players in a dictionary, where each player name maps to the player class for the player. Once I did this loading of the outer MLB teams and players, I had to use these things to fit it into game within the game. I then created a game class which provided the backend of the rules of a baseball game. It also took into account the player data and probabilistically determined the outcome of each play.

The data was then sent to Pygame game where it could interpret the output and create an animation based on the outcome of the play. While many might think this is backward since, in real life, the actual play determines the outcome, I contend that for my purposes of creating a realistic game, this gives me and the MLB-determined values more control of the outcomes and therefore, the game overall will be more reflective of real MLB games. This is one of the key problems in the realism of other sports video games, so I addressed this by probabilistically determining the outcome of each play before the play is enacted on the screen.