SOLAR SYSTEM – LAB 3 EXTENSION

Members:

- Taha Rana - 100831067
- G. Anthony Gutierrez Ricard - 100815169

Our project will consist of extending a previous lab done in the course, which is Lab 3: Earth and Moon, and expanding it to a comprehensive full solar system model. We will introduce a whole array of celestial bodies like planets, comets, and moons. Our main task will be to build this large model in a more accurate and stable environment. By utilizing ODEs and expanding the physics of the astrological bodies, we'll be able to create a whole simulation which we can interact with. We'll analyze the best methods and the implementation of different orbits with their effects on other celestial bodies.

We are analyzing the option of adding user interaction with the simulation to go around and experience the gravitational force of each body when moving through the different body masses. This project will provide a perspective into how our solar system moves and behaves. We'll implement features and laws learned in class to achieve a well-optimized simulation. This project will allow us to test our knowledge and provide us with a taste of how it is to build a simulation in the real world. Additionally, we'll look into allowing the user to modify the attributes of this solar system model. This could be done by adding or removing mass, speeding or slowing down the simulation, and optionally swapping celestial bodies or adding extra celestial bodies.