Executive Summary

“Tracie” utilizes the Scribbler Bot and the Fluke2 chip to trace out the drawable input transferred from the user interface, via a web app, through linear movement and precise rotations. Programmed in JavaScript, the client, which runs in the browser, is the ultimate form of communication between the user and the robot. The client provides the user the ability to start and stop the program immediately, and allows the user to modify the data values of the Controller, which alters the distance and time conversion and rotation to time conversion for optimization purposes. The user interface, integrated within the client, allows the user to input a set of points and provides backwards and clearing functionality. When the program runs, the client communicates with the Server and Controller, both simultaneously running in the terminal, to start up the Tracie script and retrieves information influencing the robot’s performance, such as the speed. The Tracie program is coded in Python using the Myro library [1], a Python-written framework used for programming robots. The Tracie program supplies the artificial intelligence and program logic to manipulate the scribbler bot’s movement.

This report contains a Work Breakdown Structure (Figure 1), a PERT Network Diagram (Figure 2), and a Gantt Chart (Figure 3). They provide a strong foundation in optimizing the time spent on each activity through an organized schedule. Additionally, this report includes a requirements document, which identifies the personnel in the group and their respective roles and contributions, and lists the functional and non-functional requirements in order to progress and complete the project. Furthermore, a computation decision making (CDM) section will also be included. CDM is essentially the description of how the problems in the project are being analyzed, as well as the number and description of the criteria and alternatives found. The project retrospective section will include what worked well and what did not work well in regards to the supplied resources, (such as the Scribbler Bot or Fluke2 chip), team organization, and the development process.