ELEC1601

Group 34

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# Introduction

The purpose of this project was to design and create a prototype that involves the use of two Arduino Uno boards and a robot connected with sensors and actuators with the ability for bi directional communication via Bluetooth shields.

**Description**

Our final prototype is based off the functionality of a Roomba (Robot vacuum) and a Rover used for space exploration. The prototype will be able to navigate to its surroundings without the need for user intervention with the ability to also display obstacles and the path it has taken to reach its current position over a web interface via Serial and Bluetooth communication.

# Final Representation



# Implementation

**Project Management**

**Task Division**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Brett | Ryan | Sam | Louis |
| Week 7 | Research ideas | Research ideas | Research ideas | Research ideas |
| Week 8 | IR & Bluetooth | IR & Bluetooth | IR & Bluetooth | IR & Bluetooth |
| Week 9 | Bluetooth Communication | Bluetooth Communication | Bluetooth Communication | Bluetooth Communication |
| Week 10 | Webpage processing of Bluetooth data | Avoidance of IR Code | Avoidance of IR Code | Avoidance of IR Code |
| Week 11 | Webpage processing of Bluetooth data | Robot Movement | Robot Movement | Webpage processing of Bluetooth data |
| Week 12 | Finalise on project | Finalise on project | Finalise on project | Finalise on project |

**Progress**

**Summary:**

**Week 7**

**Week 8**

**Week 9**

**Week 10**

**Week 11**

**Week 12**

**Flow Chart Representation of code**

**Pseudo-code.**

**BEGIN**

Include Libraries (SoftwareSerial, Sevo, Adafruit\_Sensor, Adafruit\_HMC5883\_U

**END**

**Description of the final prototype**

**Conclusion**

**References**

[**http://mars.nasa.gov/msl/multimedia/interactives/learncuriosity/index-2.html**](http://mars.nasa.gov/msl/multimedia/interactives/learncuriosity/index-2.html)

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**http://spectrum.ieee.org/automaton/robotics/home-robots/irobot-brings-visual-mapping-and-navigation-to-the-roomba-980**