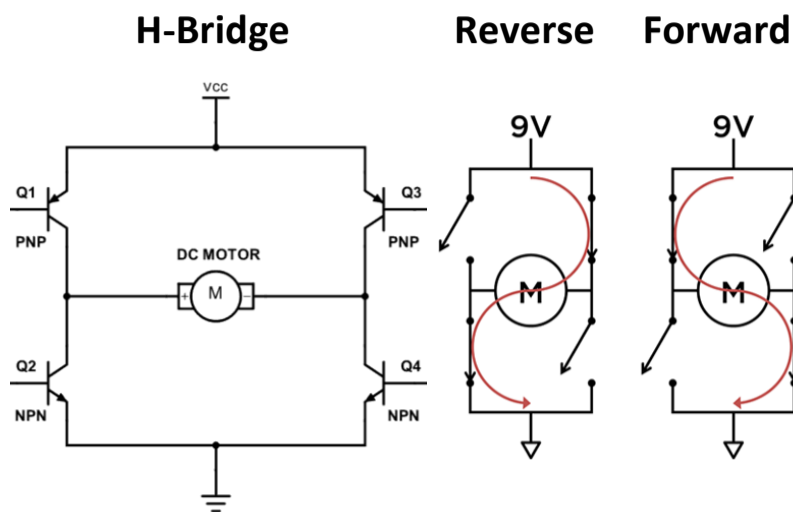


Buggy Project

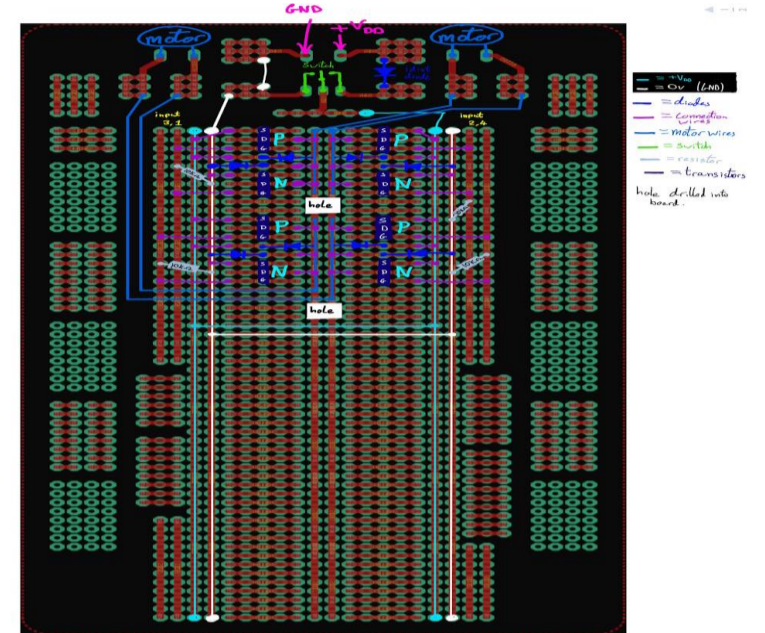
Team 7: Ben Evans, Luke Cartwright, Jake Thompson, Joe Body

H-Bridge Operation



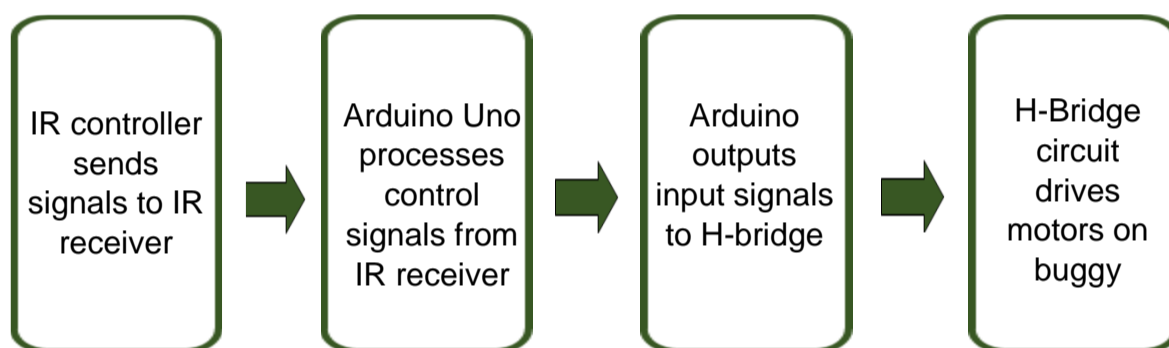
- The H-bridge consist of two N-type and two P-type MOSFETS, which control the direction the current flows though the motor
- Pull down resistors are used to pull the input voltage to ground (logical zero value).
- Diodes stop back emf from damaging MOSFETS
- LED's shows the direction of the current through the motors

Vero Board Circuit Diagram

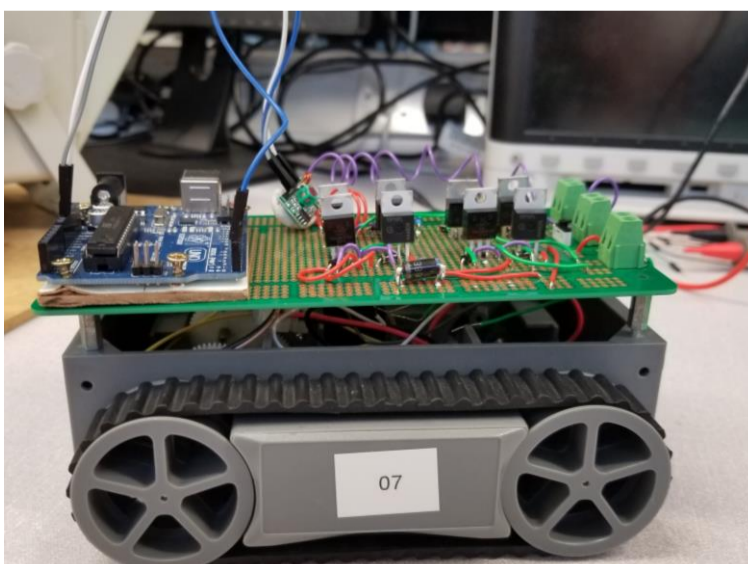
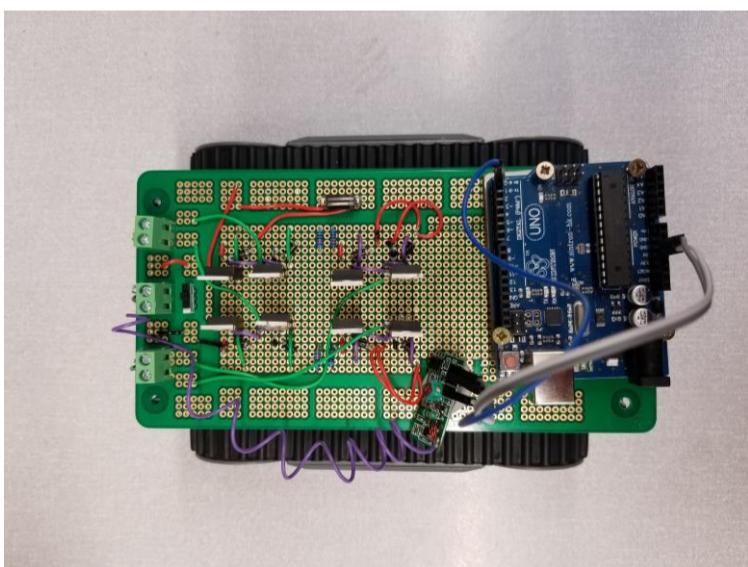


- We transferred the circuit diagram onto the Vero board
- Mounting space at the bottom for the Arduino
- There are two H-Bridges one for each motor, controlled by 4 inputs
- It has a high-power diode so MOSFETS are not destroyed if battery is not connected correctly
- PCB terminal blocks are use for connecting and disconnecting the battery

System Diagram

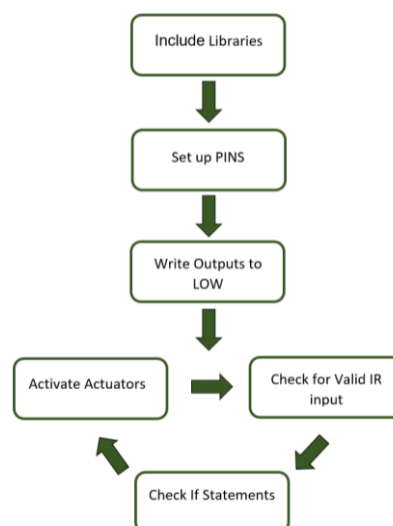


Finished Buggy



- We used an Arduino to make it easier to add extra features and control the buggy
- This allowed us to display and improve on our programming skills

Code Flow Diagram



Remote control



Remote control V1

- Dual multidirectional analog sticks
- Uses RF transmitter
- Arduino Uno controller

Remote control V2

- Uses IR transmitter
- Multiple mappable buttons
- More Portable and doesn't require Arduino.

Extra Features

- Police Siren
- Headlights
- Horn
- Custom IR Controller and RF Controller

Responsibilities

- Jake (Designing H-bridge Circuit, Soldering H-bridge, Trouble shooting)
- Luke (RF code with Arduino, Hardware implementation, IR Code)
- Ben (Overall Poster design, RF code with Arduino, Soldering H-Bridge)
- Joe (Remote control design, Designing H-bridge Circuit, Poster design)