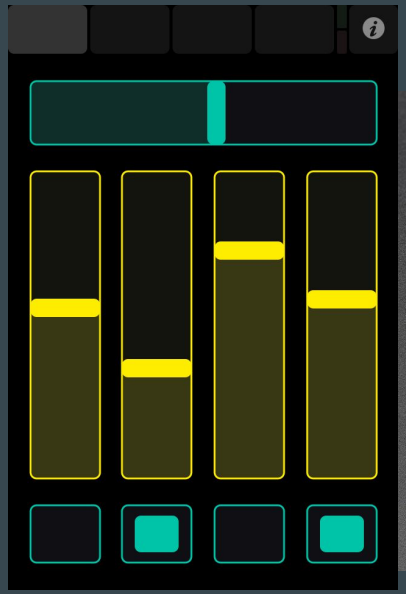
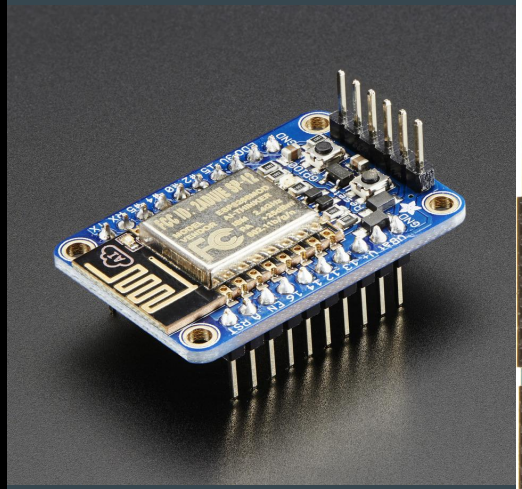
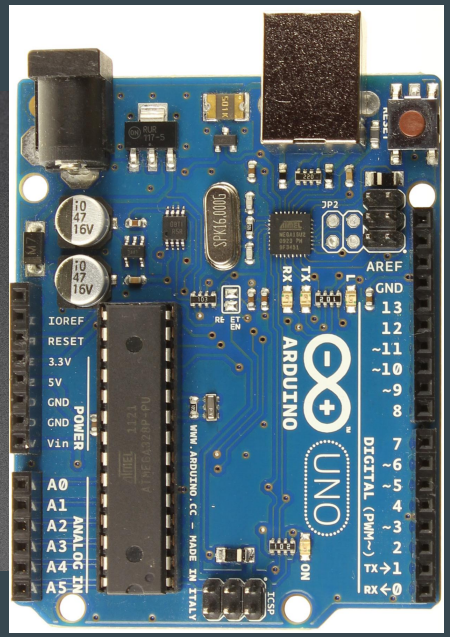
iPhone Controlled Car

Bret Pontillo, Alec Taren, Vansh Patel

iPhone Controlled Car





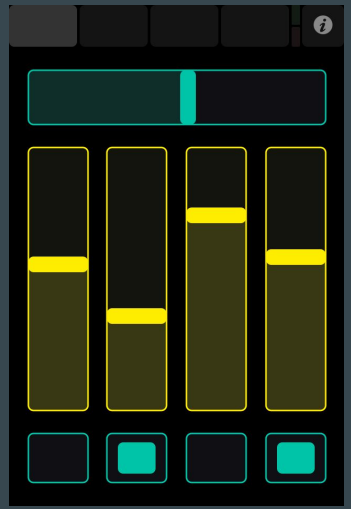


Specifications - The Car:

- 4 Motors controlled by 2 H-Bridge Signals.
- The car will weigh less than 3 pounds.
- Top speed will reach up to 5 mph.
- The car will have a battery life of at least 2 hours.
- The car will have at least two LEDs.

Specifications - The iPhone Software (TouchOSC):

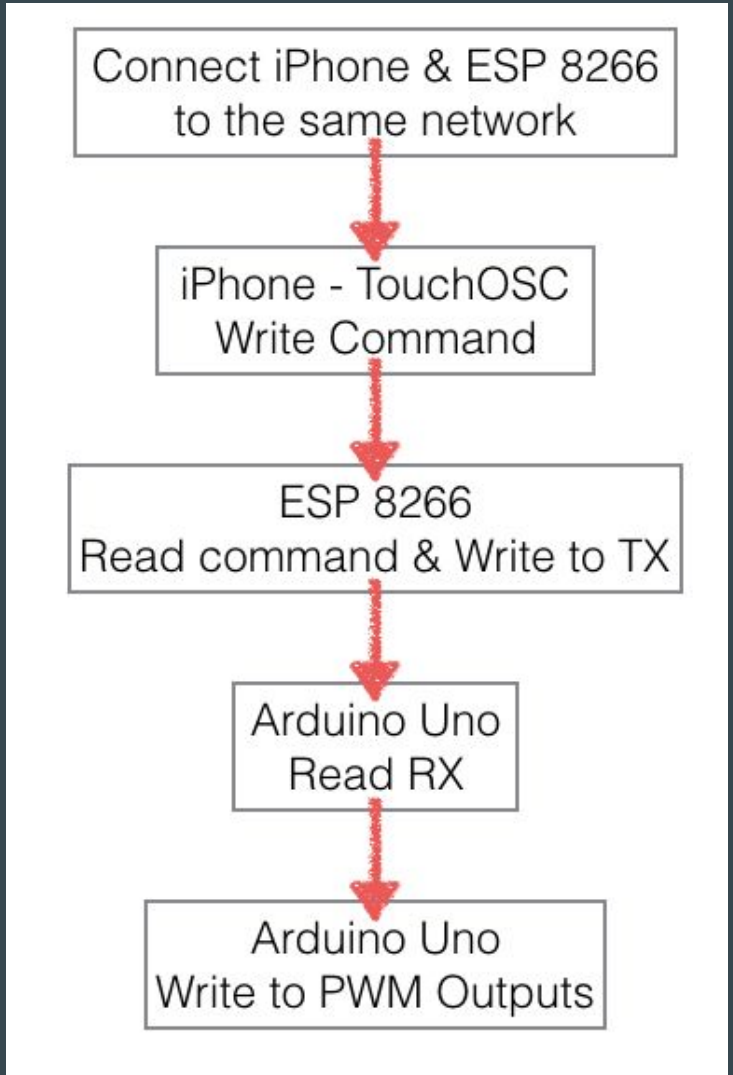
- Will utilize TouchOSC application.
- An iPhone app that can be configured with a wireless module using MIDI protocol
- Will control all the movements of the car



Specifications - The Arduino Software:

- Will be able to maneuver the car in any direction on a 2D plane.
- Will control the car via an iPhone interface.
- Will remotely turn the car on and off.

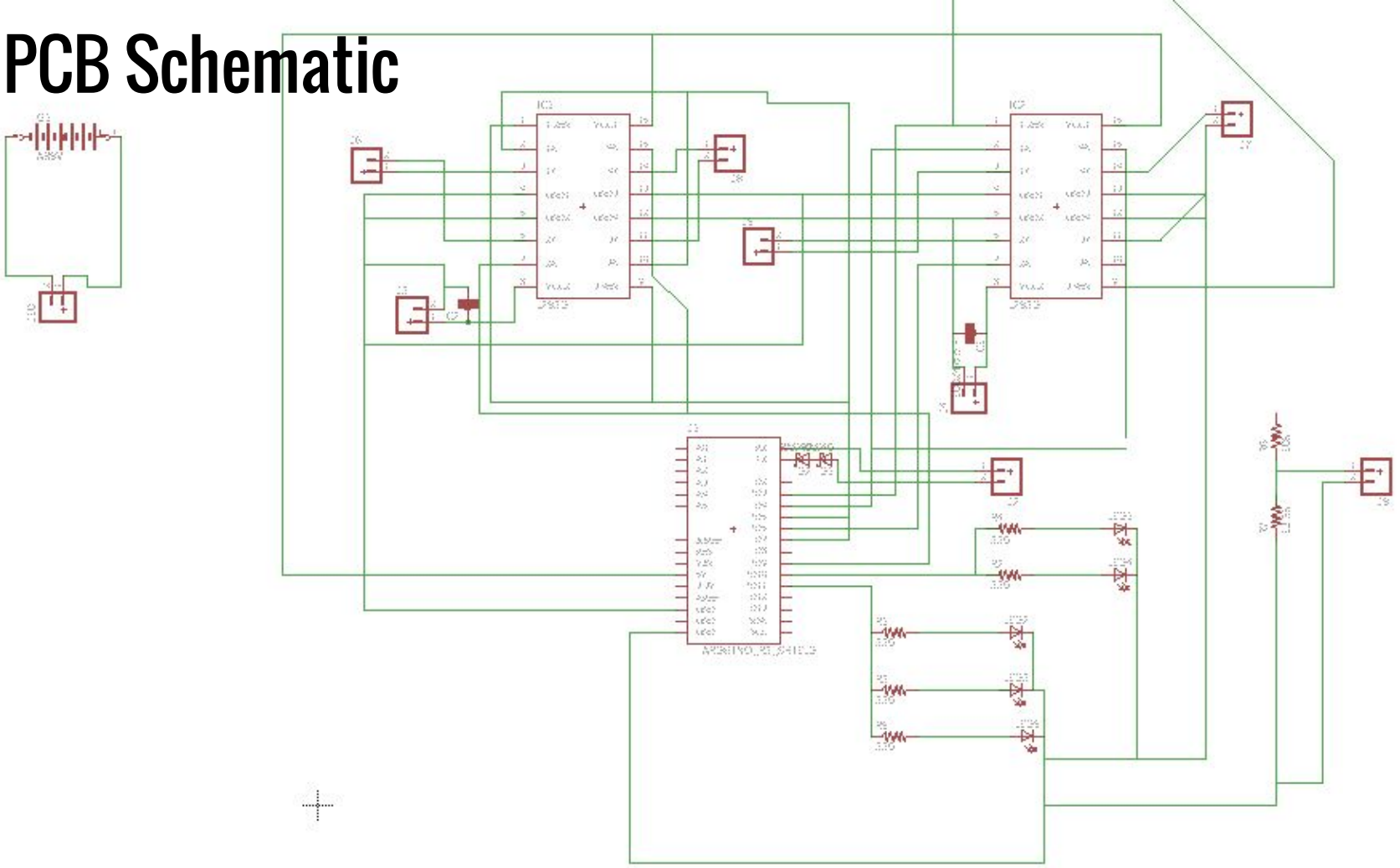
Software Flow



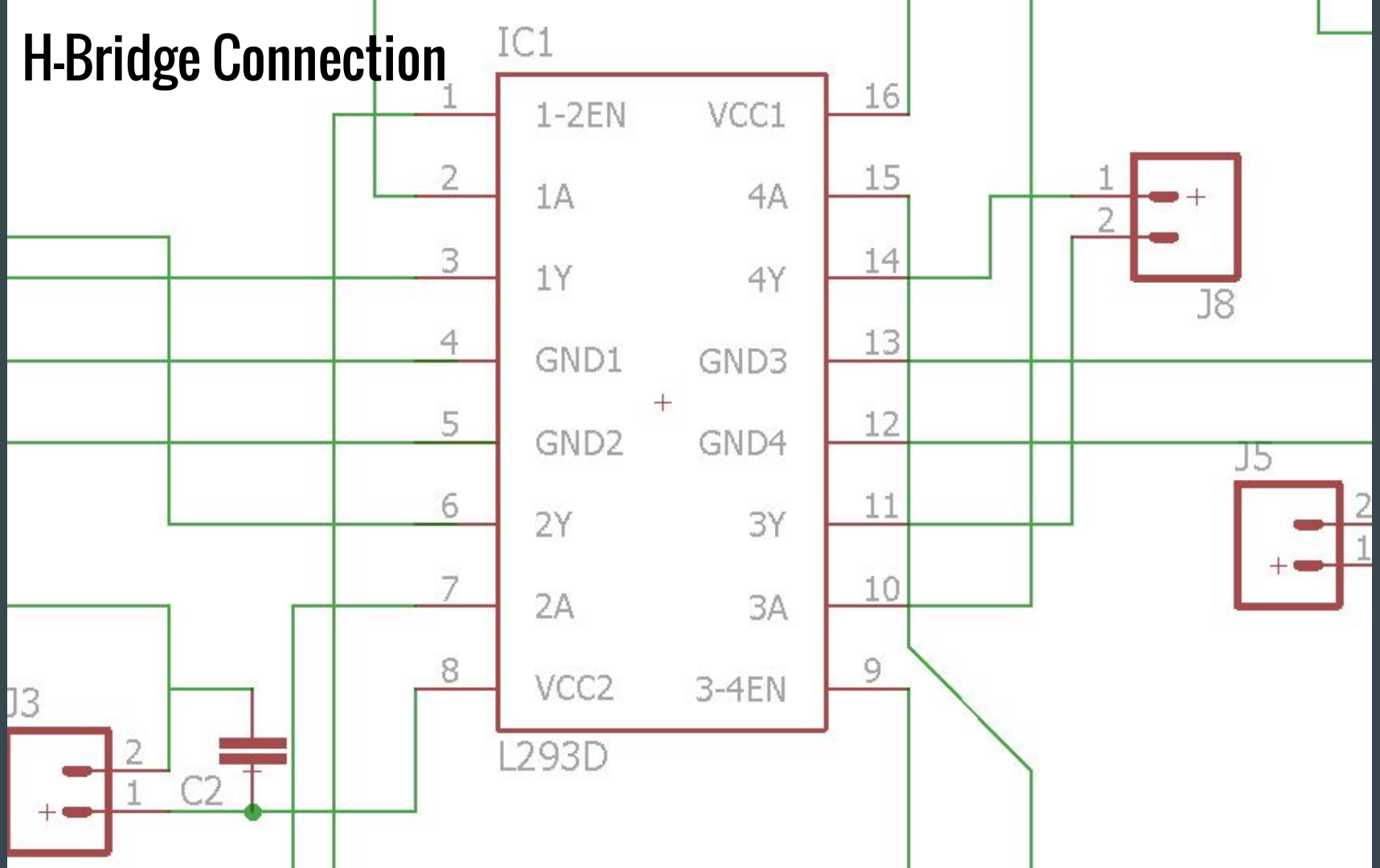
Status Update

- Ran software compatibility tests between the Arduino Uno and iPhone
- All parts are ordered
- PCB Schematic nearly completed
- Car Chassis is built

PCB Schematic



H-Bridge Connection



Tradeoffs

- Using a 3rd party base application via the Apple app store, we won't be able to receive data

- Using an H-Bridge Module now, instead of our own MOSFET design

- Using a ESP 8266 Huzzah, instead of basic ESP 8266

Technical Problems completed

- Difficulty wiring with Eagle
- Wireless configuration of the ESP 8266 Huzzah
- Not to overload the H-bridge
- Waiting to receive the H-Bridge IC
- Quality of the chassis is very poor
- A week behind schedule on PCB order

Tasks to be

- Finish the PCB Design
- Arduino Software Design
- ESP 8266 Huzzah Networking Software Design
- TouchOSC Application Configuration

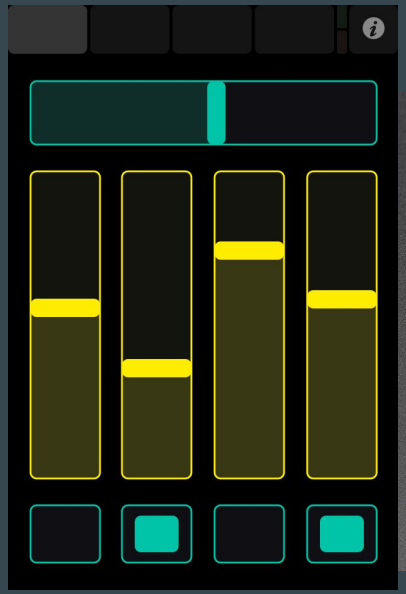
Team Responsibilities

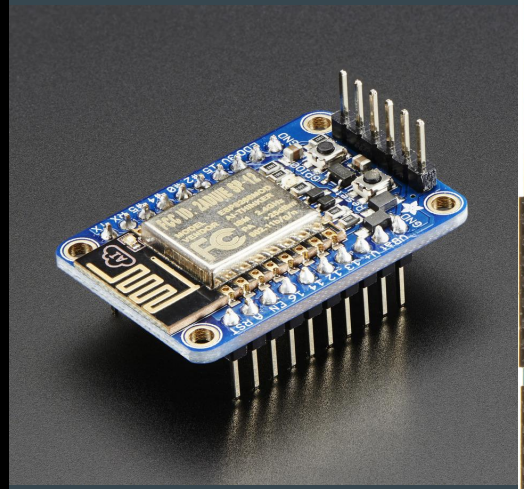
- Circuit Board Design Lead - Alec
  - PCB board design
  - Circuit Specification Requirements
- Mechanical Configuration Lead - Vansh
  - Parts Assembly
  - Solder PCB
  - Assist Bret with iPhone control development
- iPhone Control Development Lead - Bret
  - GUI Design
  - Communicate to car via wireless network

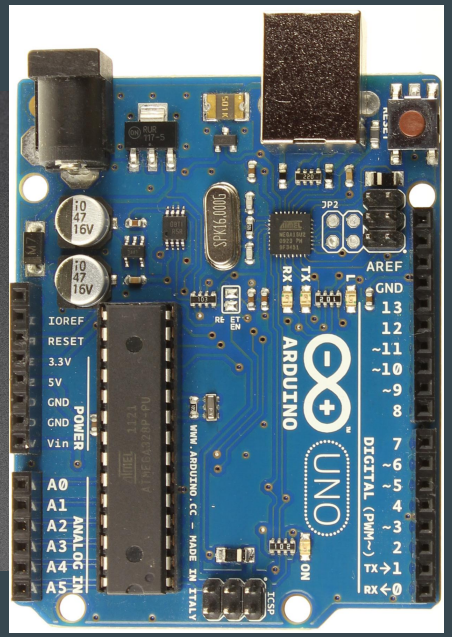
Milestones:

- Milestone 1 - Week of 2/15/16
  - Run software tests with the Arduino Uno and be able to write a command from an iPhone wirelessly to the Uno.
  - Solder pins onto ESP 8266
  - All parts are ordered
- Milestone 2 - Week of 3/14/16
  - PCB order is completed
  - Car chassis is designed and ready to incorporate the PCB on arrival
- Milestone 3 - Week of 4/4/16
  - Arduino hardware code is written
- Milestone 4/ Final Review - Week of 4/25/16
  - All codes are debugged
  - Car can be controlled via a wireless
  - Ready for demonstration

Review






ARDUINO
UNO
POWER
ANALOG IN
DIGITAL (PWM~)
AREF
GND
IOREF
RESET
3.3V
5V
GND
GND
Vin
A0
A1
A2
A3
A4
A5
MADE IN ITALY