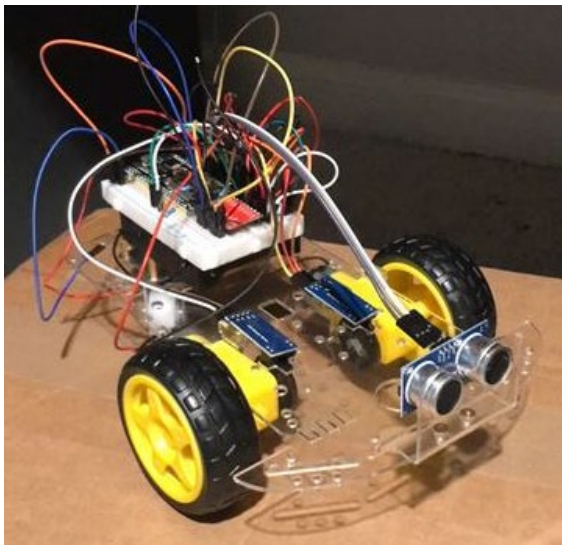
STEM Camp Overview

In this STEM camp you will construct and program your own robot car seen below:



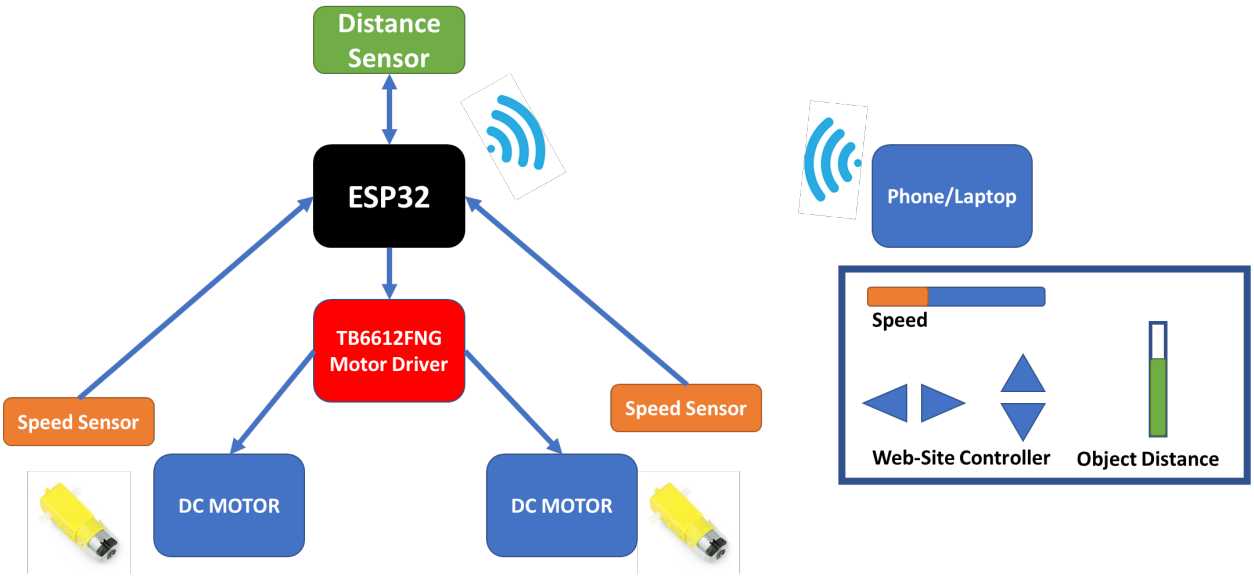
Along the way you will learn about these topics:

- Soldering
- Breadboards
- Jumper wires
- Electricity
- LEDs
- Microcontrollers
- GPIO Programming
- Ultrasonic sensors
- DC Motors
- Motor control
- Tachometers (optocouplers)
- Transistor-Transistor Logic (TTL)
- Networking
- Bluetooth
- Wi-Fi

The topics are broken out into these modules:

1. Constructing the robot
2. Soldering the power switch
3. Working with LEDs
4. Blink an LED with the ESP32
5. Measure battery voltage with ESP32
6. Power with USB vs power with external power
7. Working with an ultrasonic sensor
8. Working with DC motors
9. Working with DC motor drivers
10. Adding the back the ultrasonic sensor
11. Working with tachometers
12. Working with networking

Here is the block diagram of the robot:



You will work with your team to complete each module and building the Team robot. At the end of camp Day 2, you will race your Team robots!