

Capstone Project

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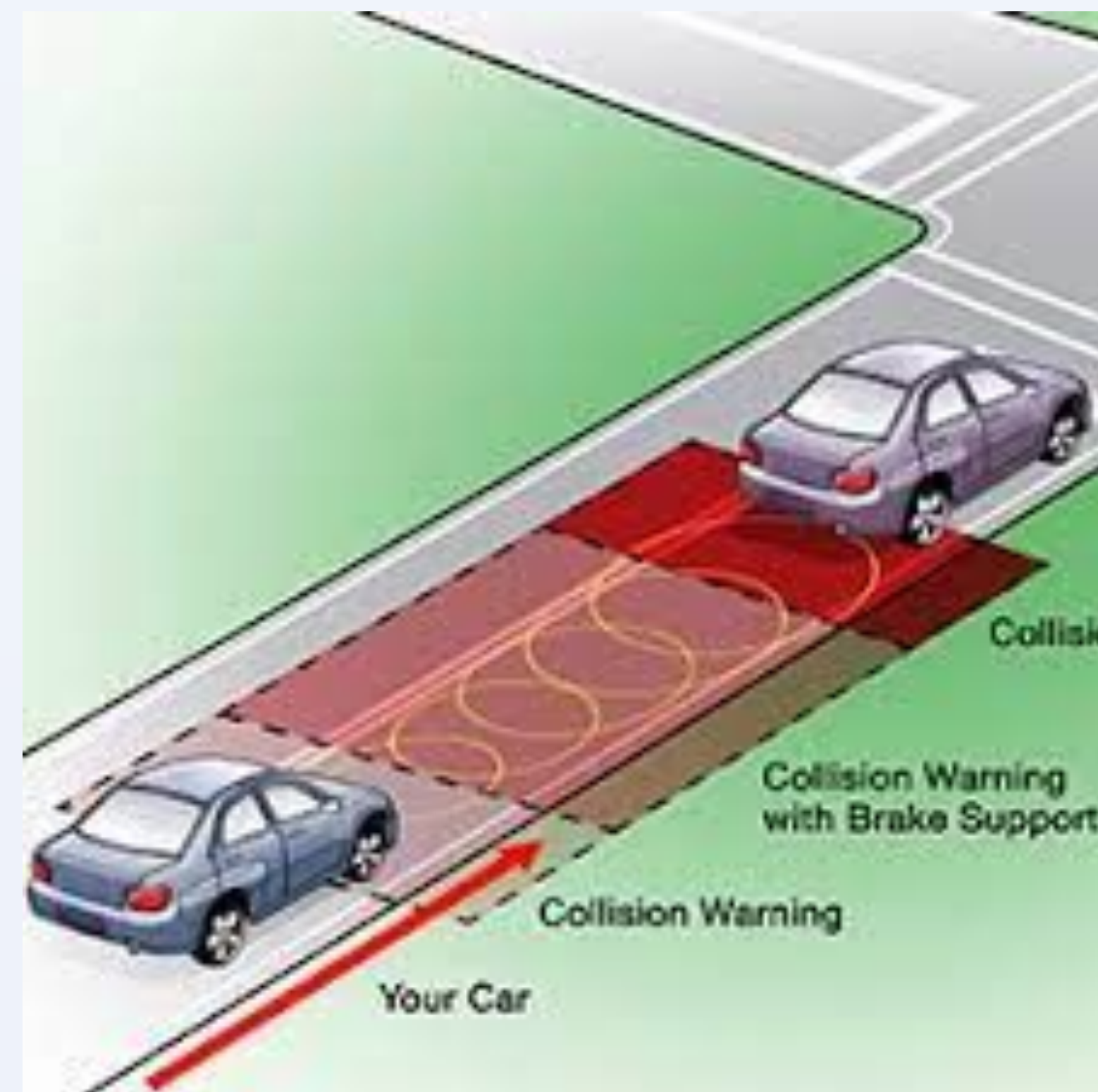
Our Project

We built a Remote Controlled Car. It uses Wifi and the Blynk app to remotely control the car. It has a built in failsafe to detect distance and stop the car.



Objectives

Our objective was to create a remote controlled car that could stop a collision by sensing distance and stopping the car.



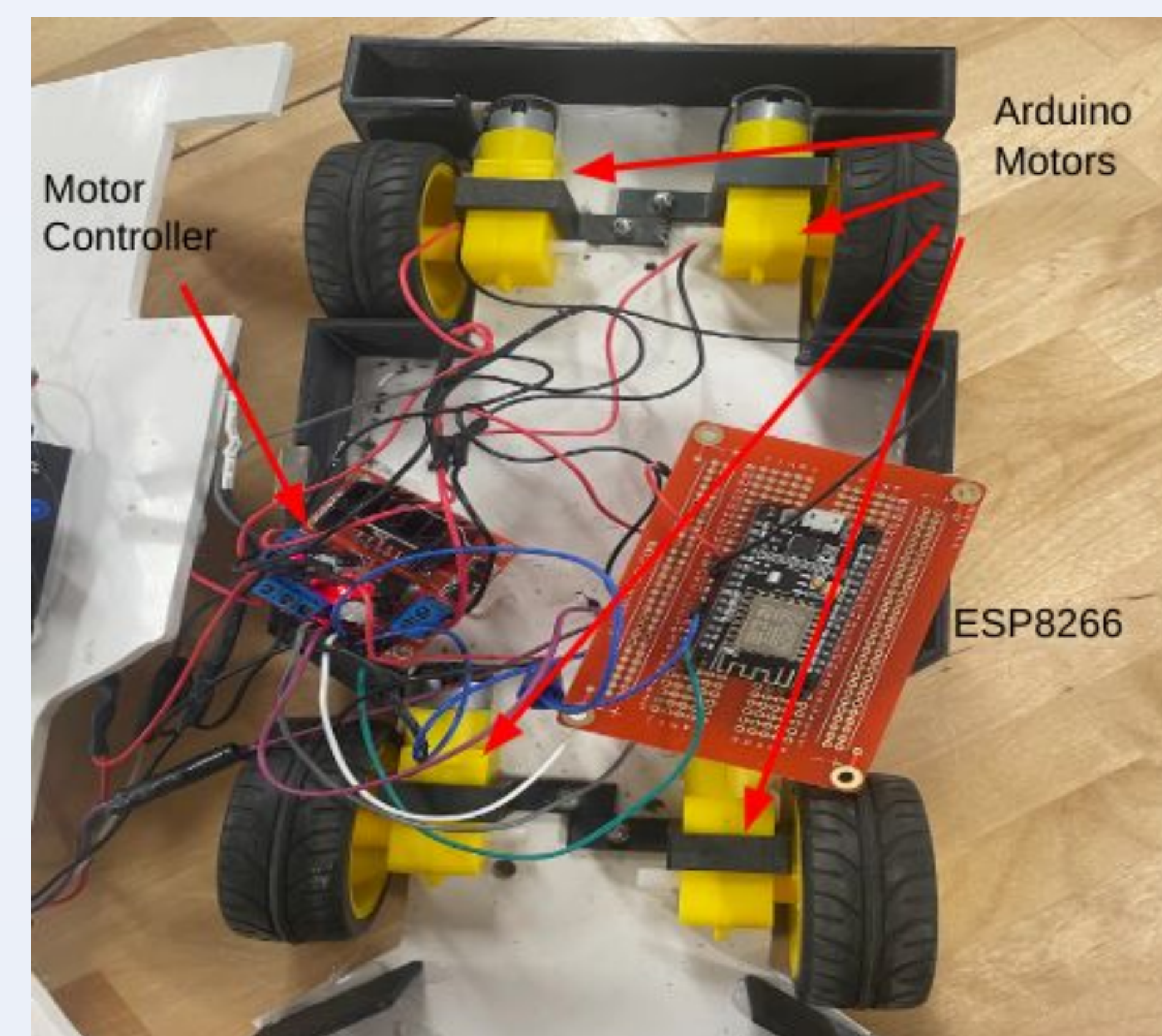
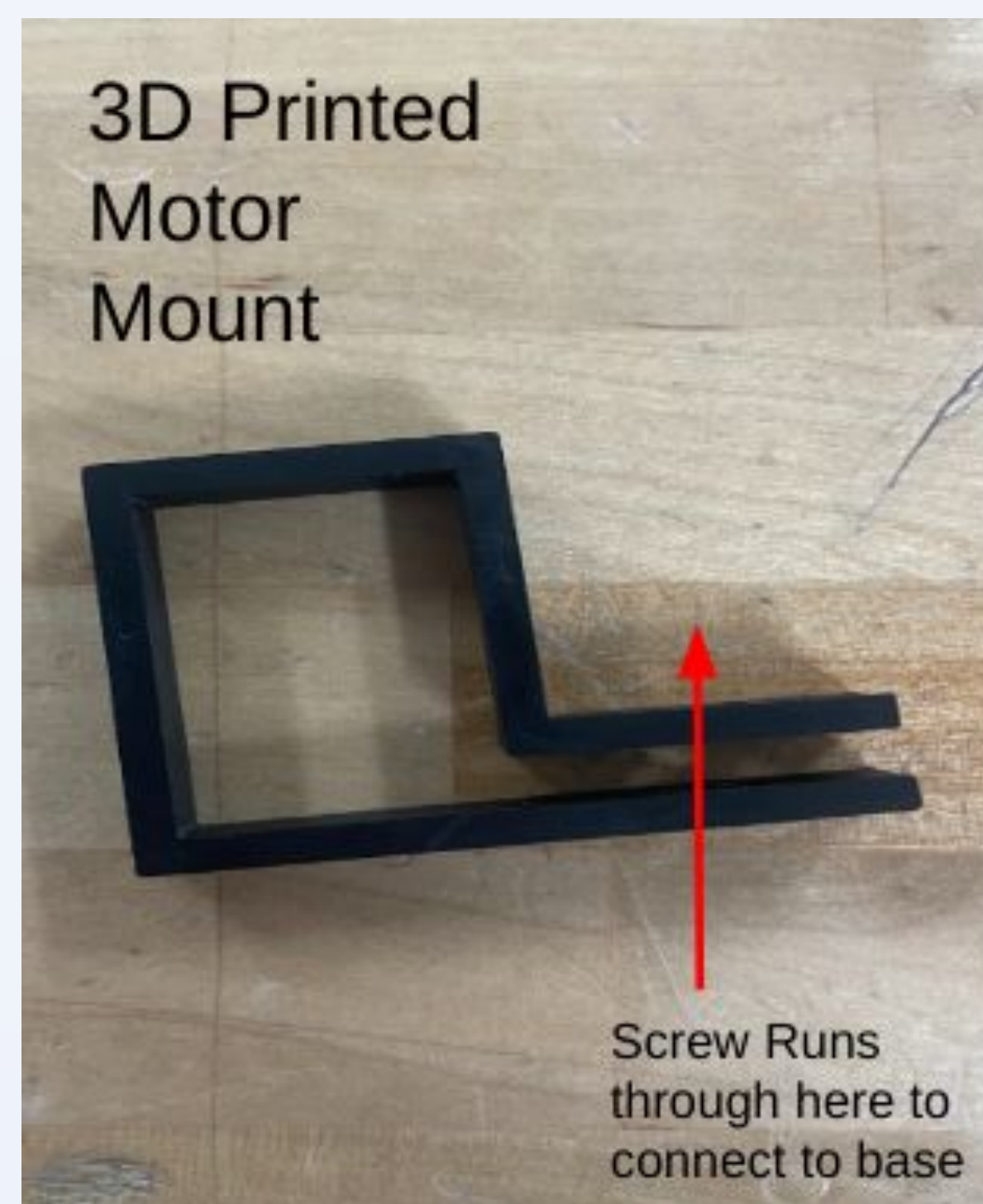
Materials

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Esp8266: \$8
I298n: \$5
Four Arduino Motors and Wheels: \$15
Distance Sensor: \$3
PVC Pipe: \$3
2 Battery Packs: \$8
9 Batteries: \$9
Bread Board: \$7
Power Switch: \$2
2 Magnets: \$2
Total: \$62

3D Prints

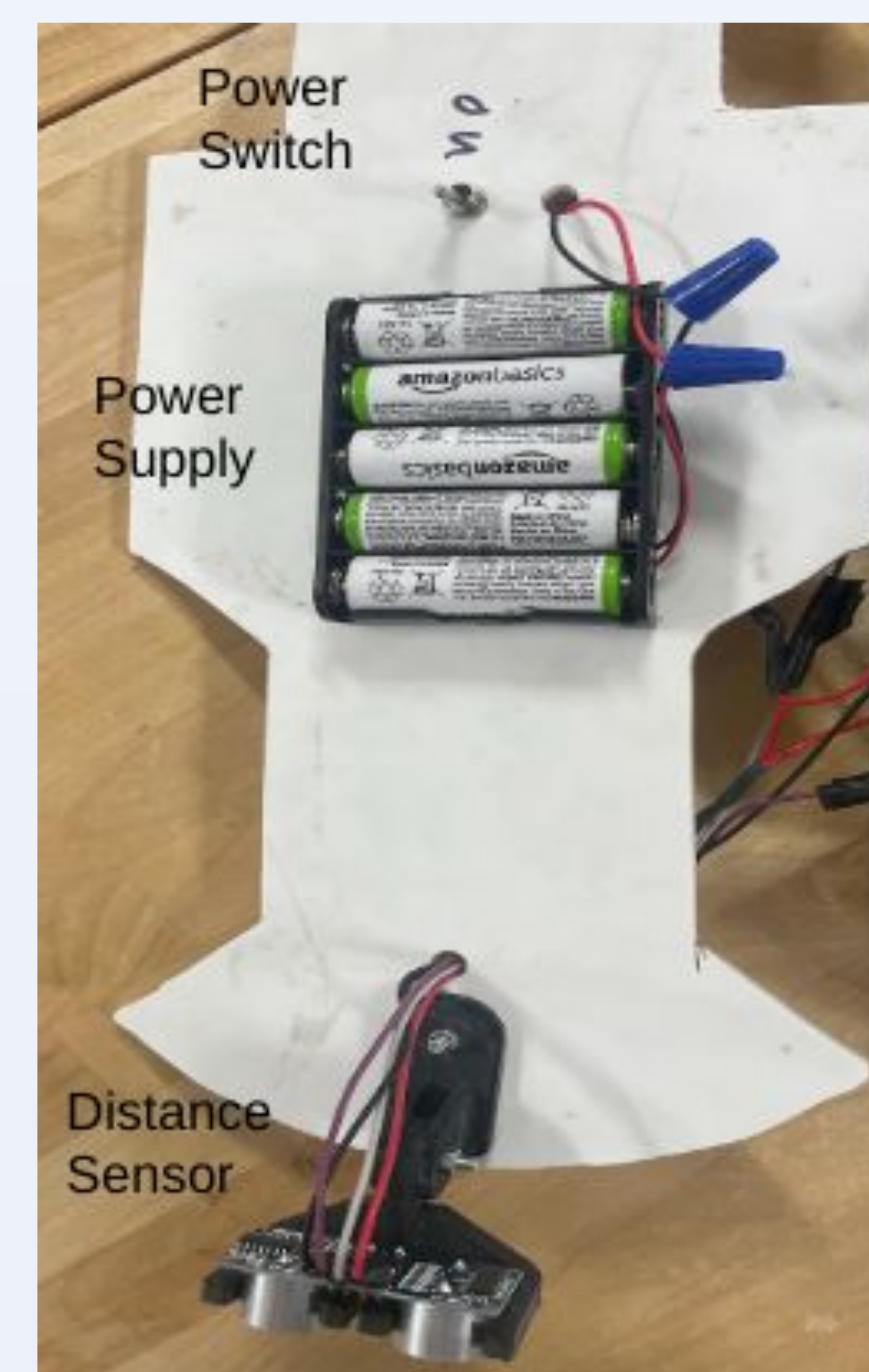
Walls: 73.1g
4 Motor Mounts: 20g
Sensor Mount: 10g
Total: 103.1g



Results

Our final project was a RC Car controlled by an ESP8266. It moves four motors using a motor controller. We have two pieces of PVC pipe with most of the components in between them. We have pur battery pack and distance sensor on top of the car along with our power switch. We 3D printed walls for the car to put between the PVC. We also printed four motor mounts and a mount for the distance sensor.

```
void loop() {  
  directionControl();  
  delay(1000);  
  // Clears the trigPin  
  digitalWrite(trigPin, LOW);  
  delayMicroseconds(2);  
  // Sets the trigPin on HIGH state for 10 micro  
  seconds  
  digitalWrite(trigPin, HIGH);  
  delayMicroseconds(10);  
  digitalWrite(trigPin, LOW);  
  // Reads the echoPin, returns the sound wave  
  travel time in microseconds  
  duration = pulseIn(echoPin, HIGH);  
  // Calculating the distance  
  distance = duration * 0.034 / 2;  
}
```



Problems and Challenges

One problem we had was building a base plate. We decided to use PVC Pipe. We cut a 15 inch piece of 2in pipe. We cut a line down the middle of the pipe then used a heat gun to bend it and flatten it into a plate. We then used a Jigsaw to cut out the shape we wanted. Another big problem we had was our distance sensor not working. The code gave us several problems such as the sensor not stopping the car from hitting objects. It also was overriding the drive controls and making the car lurch forward.

