

Report 2nd session

In this session we made several changes to the choice of engine, ultrasonic sensor and SIM800L module. On the one hand for the engine we opted for two brushless motors instead of just one RUNNER SPECIAL 2 engine because of its very high power that will consume a lot of energy and therefore a battery will not suffice. So this choice was more an efficiency choice to reduce weight and save space but also reduce the cost of the car. On the other hand, we chose to use WIFI to communicate with the car instead of using the SIM800L module, because with the SIM800L module you are restricted to sending SMS messages, whereas in WIFI you can do a lot of things with it, such as making a website, communicating with the camera of the car and receiving a video of what is happening in front of it. And finally, the default of the ultrasonic sensor is that it emits waves in all directions which will not be too accurate, so we chose to use the VL53L0X laser for more efficiency and more precision for taking measurements.

Here are the results obtained with the laser :

```
#include <Wire.h>
#include <VL53L0X.h> |
int sda = A4;
int scl = A5;
int XSHUT= 12;
VL53L0X sensor;
void setup() {
    pinMode(12, INPUT_PULLUP);
    digitalWrite(12, HIGH);
    Serial.begin(9600);
    Wire.begin();
    sensor.init();
    sensor.setTimeout(500);
    sensor.startContinuous();
}
void loop() {
    int Distance= sensor.readRangeContinuousMillimeters();
    Serial.print("Distance: ");
    Serial.print(Distance);
    Serial.print("mm");
    if (sensor.timeoutOccurred()) {Serial.print("TIMEOUT");}
    Serial.println();
    delay(100);
}
```

Distance: 134mm
Distance: 106mm
Distance: 101mm
Distance: 96mm
Distance: 98mm
Distance: 95mm
Distance: 96mm
Distance: 113mm
Distance: 153mm
Distance: 187mm
Distance: 214mm
Distance: 252mm
Distance: 268mm
Distance: 270mm
Distance: 257mm
Distance: 236mm
Distance: 197mm
Distance: 155mm
Distance: 121mm
Distance: 98mm
Distance: 82mm
Distance: 95mm
Distance: 156mm
Distance: 184mm
Distance: 203mm
Distance: 242mm
Distance: 254mm
Distance: 288mm
Distance: 269mm
Distance: 198mm
Distance: 8190mm
Distance: 8190mm