

```
// Define pins for motor driver
```

```
const int in1Pin = 7;
```

```
const int in2Pin = 4;
```

```
const int in3Pin = 9;
```

```
const int in4Pin = 8;
```

```
const int enA = 5;
```

```
const int enB = 6;
```

```
// Define pins for ultrasonic sensor
```

```
const int trigPin = 13;
```

```
const int echoPin = 3;
```

```
// Define pins for IR sensor
```

```
const int irPin1 = 2;
```

```
const int irPin2 = 10;
```

```
// Turn left / right
```

```
const int speedLow = 50;
```

```
const int speedHigh = 150;
```

```
// Define variables for ultrasonic sensor
```

```
long duration;
```

```
int distance;
```

```
void forward() {
```

```
    digitalWrite(in1Pin, LOW);
```

```
    digitalWrite(in2Pin, HIGH);
```

```
digitalWrite(in3Pin, LOW);  
digitalWrite(in4Pin, HIGH);  
}
```

```
void forwardNew() {  
    analogWrite(enA, 120);  
    analogWrite(enB, 120);  
    digitalWrite(in1Pin, LOW);  
    digitalWrite(in2Pin, HIGH);  
    digitalWrite(in3Pin, LOW);  
    digitalWrite(in4Pin, HIGH);  
}
```

```
void right() {  
    digitalWrite(in1Pin, LOW);  
    digitalWrite(in2Pin, HIGH);  
    digitalWrite(in3Pin, HIGH);  
    digitalWrite(in4Pin, LOW);  
}
```

```
void rightNew() {  
    analogWrite(enA, 150);  
    analogWrite(enB, 60);  
    digitalWrite(in1Pin, LOW);  
    digitalWrite(in2Pin, HIGH);  
    digitalWrite(in3Pin, HIGH);  
    digitalWrite(in4Pin, LOW);  
}
```

```
void left() {
```

```
digitalWrite(in1Pin, HIGH);  
digitalWrite(in2Pin, LOW);  
digitalWrite(in3Pin, LOW);  
digitalWrite(in4Pin, HIGH);  
}
```

```
void leftNew() {  
  analogWrite(enA, 60);  
  analogWrite(enB, 150);  
  digitalWrite(in1Pin, HIGH);  
  digitalWrite(in2Pin, LOW);  
  digitalWrite(in3Pin, LOW);  
  digitalWrite(in4Pin, HIGH);  
}
```

```
void setup() {  
  // Initialize motor driver pins  
  pinMode(in1Pin, OUTPUT);  
  pinMode(in2Pin, OUTPUT);  
  pinMode(in3Pin, OUTPUT);  
  pinMode(in4Pin, OUTPUT);  
  pinMode(enA, OUTPUT);  
  pinMode(enB, OUTPUT);  
  
  // Initialize ultrasonic sensor pins  
  pinMode(trigPin, OUTPUT);  
  pinMode(echoPin, INPUT);  
  
  // Initialize IR sensor pin
```

```

pinMode(irPin1, INPUT);
pinMode(irPin2, INPUT);

// Set initial speed for both motors
analogWrite(enA, 120);
analogWrite(enB, 120);
}

void loop() {
  // Read IR sensor input
  int irSensorValue1 = digitalRead(irPin1);
  int irSensorValue2 = digitalRead(irPin2);

  if (irSensorValue1 == 0 && irSensorValue2 == 0) {
    forwardNew();
  } else if (irSensorValue1 == 1 && irSensorValue2 == 0) {
    leftNew();
  } else if (irSensorValue1 == 0 && irSensorValue2 == 1) {
    rightNew();
  }

  //delay(1);
  checkObstacle();
}

void checkObstacle(){
  // Ultrasonic sensor code
  digitalWrite(trigPin, LOW);

```

```
delayMicroseconds(2);  
digitalWrite(trigPin, HIGH);  
delayMicroseconds(10);  
digitalWrite(trigPin, LOW);
```

```
duration = pulseIn(echoPin, HIGH);  
distance = duration * 0.034 / 2;
```

```
if (distance < 20) {  
    // Stop motors if an obstacle is detected within 10 cm  
    analogWrite(enA, 0);  
    analogWrite(enB, 0);  
    delay(2000);  
}  
  
}
```