```
// Motor 1
int pwmB = 6;
int in1B = 7;
int in2B = 8;
//motor 1
int pwmA = 5;
int in1A = 3;
int in2A = 4;
int motorspeed = 0;
int usernum = 0;
//irsensor
int sensorLeft = A1;
int sensorCenter = A2;
int sensorRight = A3;
//potentiometer
int Potpin = A0;

//backlights
int redright = 12;
 int redleft = 9;
void setup()
{
 //Set led pins as output
pinMode(12, OUTPUT);
  pinMode(9, OUTPUT);
 // Set all the motor control pins to outputs
 pinMode(pwmB, OUTPUT);
 pinMode(in1B, OUTPUT);
 pinMode(in2B, OUTPUT);
 pinMode(pwmA, OUTPUT);
 pinMode(in1A, OUTPUT);
 pinMode(in2A, OUTPUT);

 Serial.begin(9600);

 // Set the sensor pins as input
 pinMode(sensorLeft, INPUT);
 pinMode(sensorCenter, INPUT);
 pinMode(sensorRight, INPUT);
}

void loop() {
```

```
 potspeed();

//setting motorspeed output
 analogWrite(pwmA, motorspeed);
 analogWrite(pwmB, motorspeed-27);



 //IR sensor
 int leftValue = digitalRead(sensorLeft);
 int centerValue = digitalRead(sensorCenter);
 int rightValue = digitalRead(sensorRight);


 // Print the sensor values for debugging
 Serial.print("Left Sensor: ");
 Serial.print(leftValue);
 Serial.print(" | Center Sensor: ");
 Serial.print(centerValue);
 Serial.print(" | Right Sensor: ");
 Serial.println(rightValue);



 // Decision logic based on digital values (HIGH or LOW)
 if (leftValue == LOW && centerValue == HIGH && rightValue == HIGH) {
   Serial.println("Turn Left");
   left();
   digitalWrite(redright, LOW);
 digitalWrite(redleft, HIGH);
 }
 else if (leftValue == HIGH && centerValue == LOW && rightValue == HIGH) {
   Serial.println("Straight");
   forward();
   digitalWrite(redright, HIGH);
 digitalWrite(redleft, HIGH);

 }
 else if (leftValue == HIGH && centerValue == HIGH && rightValue == LOW ) {
   Serial.println("Turn Right");
   right();
```

```
   digitalWrite(redright, HIGH);
 digitalWrite(redleft, LOW);
 }
 else {
   Serial.println("Off Line");
   stop();
 }

 // Add a small delay
 delay(100);
}


//Suroutines
void forward() {

 digitalWrite(in2A, LOW);
 digitalWrite(in1A, HIGH);
 digitalWrite(in2B, HIGH);
 digitalWrite(in1B, LOW);
}

void left() {

 digitalWrite(in2A, HIGH);
 digitalWrite(in1A, LOW);
 digitalWrite(in2B, HIGH);
 digitalWrite(in1B, LOW);
}

void right() {

 digitalWrite(in2A, LOW);
 digitalWrite(in1A, HIGH);
 digitalWrite(in2B, LOW);
 digitalWrite(in1B, HIGH);
 }

void backward() {
 digitalWrite(in2A, HIGH);
 digitalWrite(in1A, LOW);
 digitalWrite(in2B, LOW);
```

```
 digitalWrite(in1B, HIGH);
}

void stop() {

 digitalWrite(in2A, LOW);
 digitalWrite(in1A, LOW);
 digitalWrite(in2B, LOW);
 digitalWrite(in1B, LOW);
}

void potspeed()
{
  int potValue = analogRead(Potpin);
 // Map the potentiometer value to the range of motor speed (0-255)
 motorspeed = map(potValue, 0, 1023, 0, 255);

}
```