CODE

```
#include  <NewPing.h>       //Ultrasonic sensor function library. You must install this library
#include  <Servo.h>         //Servo motor library. This is standard library


const  int LeftMotorForward = 2;
const int LeftMotorBackward = 3;
const int RightMotorForward  = 4;
const int RightMotorBackward = 5;

//sensor pins
#define trig_pin  A1 //analog input 1
#define echo_pin A2 //analog input 2

#define maximum_distance  200
boolean goesForward = false;
int distance = 100;

NewPing sonar(trig_pin,  echo_pin, maximum_distance); //sensor function
Servo servo_motor; //our servo  name


void setup(){

  pinMode(RightMotorForward, OUTPUT);
  pinMode(LeftMotorForward,  OUTPUT);
```

```
  pinMode(LeftMotorBackward, OUTPUT);
  pinMode(RightMotorBackward,  OUTPUT);

  servo_motor.attach(8); //our servo pin

  servo_motor.write(115);
  delay(2000);
  distance = readPing();
  delay(100);
  distance = readPing();
  delay(100);
  distance = readPing();
  delay(100);
  distance = readPing();
  delay(100);
}

void loop(){

  int distanceRight = 0;
  int  distanceLeft = 0;
  delay(50);

  if (distance <= 20){
    moveStop();
    delay(300);
    moveBackward();
    delay(400);
    moveStop();
```

```
    delay(300);
    distanceRight = lookRight();
    delay(300);
    distanceLeft  = lookLeft();
    delay(300);

    if (distance >= distanceLeft){
      turnRight();
      moveStop();
    }
    else{
      turnLeft();
      moveStop();
    }
  }
  else{
    moveForward();
  }
    distance = readPing();
}

int  lookRight(){
  servo_motor.write(50);
  delay(500);
  int distance =  readPing();
  delay(100);
  servo_motor.write(115);
  return distance;
}
```

```
int  lookLeft(){
  servo_motor.write(170);
  delay(500);
  int distance = readPing();
  delay(100);
  servo_motor.write(115);
  return distance;
}

int  readPing(){
  delay(70);
  int cm = sonar.ping_cm();
  if (cm==0){
    cm=250;
  }
  return cm;
}

void moveStop(){

  digitalWrite(RightMotorForward,  LOW);
  digitalWrite(LeftMotorForward, LOW);
  digitalWrite(RightMotorBackward,  LOW);
  digitalWrite(LeftMotorBackward, LOW);
}

void moveForward(){
```

```
  if(!goesForward){

    goesForward=true;

    digitalWrite(LeftMotorForward,  HIGH);
    digitalWrite(RightMotorForward, HIGH);
    digitalWrite(LeftMotorBackward,  LOW);
    digitalWrite(RightMotorBackward, LOW);
  }
}

void moveBackward(){

  goesForward=false;

  digitalWrite(LeftMotorBackward, HIGH);
  digitalWrite(RightMotorBackward,  HIGH);

  digitalWrite(LeftMotorForward, LOW);
  digitalWrite(RightMotorForward,  LOW);

}

void turnRight(){

  digitalWrite(LeftMotorForward,  HIGH);
  digitalWrite(RightMotorBackward, HIGH);

  digitalWrite(LeftMotorBackward,  LOW);
```

```
  digitalWrite(RightMotorForward, LOW);

  delay(500);

  digitalWrite(LeftMotorForward, HIGH);
  digitalWrite(RightMotorForward, HIGH);

  digitalWrite(LeftMotorBackward, LOW);
  digitalWrite(RightMotorBackward,  LOW);



}

void turnLeft(){

  digitalWrite(LeftMotorBackward,  HIGH);
  digitalWrite(RightMotorForward, HIGH);

  digitalWrite(LeftMotorForward,  LOW);
  digitalWrite(RightMotorBackward, LOW);

  delay(500);

  digitalWrite(LeftMotorForward, HIGH);
  digitalWrite(RightMotorForward, HIGH);

  digitalWrite(LeftMotorBackward, LOW);
  digitalWrite(RightMotorBackward,  LOW);
```

}

Circuit Dagram will be provided