**CODE:**

#include <Servo.h>

Servo myservo;  // create servo object to control a servo

int pos = 0;    // variable to store the servo position

const int trig = 6;

const int echo = 5;

int tien1 = 10;

int tien2 = 11;

int lui1 = 12;

int lui2 = 13;

int dongcoservo = 9;

int gioihan = 15;

int i;

int x = 0;

unsigned long thoigian;

int khoangcach;

int khoangcachtrai, khoangcachphai;

int maxspeed=30;

void dokhoangcach();

void dithang(int duongdi);

void disangtrai();

void disangphai();

void dilui();

void resetdongco();

void quaycbsangphai();

void quaycbsangtrai();

void setup() {

  // put your setup code here, to run once:

  myservo.attach(9);

  pinMode(trig, OUTPUT);

  pinMode(echo, INPUT);

  pinMode(tien1, OUTPUT);

  pinMode(tien2, OUTPUT);

  pinMode(lui1, OUTPUT);

  pinMode(lui2, OUTPUT);

  digitalWrite(tien1, LOW);

  digitalWrite(tien2, LOW);

  digitalWrite(lui1, LOW);

  digitalWrite(lui1, LOW);

  myservo.write(90);

  delay(500);

}

void loop()

{

  khoangcach = 0;

  dokhoangcach();

  if (khoangcach > gioihan || khoangcach == 0)

  {

      dithang();

  }

  else

  {

    resetdongco();

    quaycbsangtrai();

    dokhoangcach();

    khoangcachtrai = khoangcach;

    quaycbsangphai();

    dokhoangcach();

    khoangcachphai = khoangcach;

    if (khoangcachphai < 30 && khoangcachtrai < 30) {

      dilui();

    }

    else

    {

      if (khoangcachphai >= khoangcachtrai)

      {

        disangphai();

        delay(500);

      }

      if (khoangcachphai < khoangcachtrai)

      {

        disangtrai();

        delay(500);

      }

    }

  }

}

void dithang()

{

  digitalWrite(tien1, HIGH);

  digitalWrite(tien2, HIGH);

}

void disangphai()

{

  resetdongco();

  digitalWrite(lui1, HIGH);

  delay(900);

  digitalWrite(lui1, LOW);

}

void disangtrai()

{

  resetdongco();

  digitalWrite(lui2, HIGH);

  delay(900);

  digitalWrite(lui2, LOW);

}

void dilui()

{

  resetdongco();

  for (i = 0; i < 20; i++)

  digitalWrite(lui1, HIGH);

  digitalWrite(lui2, HIGH);

  delay(1000);

  digitalWrite(lui1, LOW);

  digitalWrite(lui2, LOW);

}

void resetdongco()

{

  digitalWrite(tien1, LOW);

  digitalWrite(tien2, LOW);

  digitalWrite(lui1, LOW);

  digitalWrite(lui2, LOW);

}

void dokhoangcach()

{

  digitalWrite(trig, LOW);

  delayMicroseconds(2);

  digitalWrite(trig, HIGH);

  delayMicroseconds(10);

  digitalWrite(trig, LOW);

  // Đo độ rộng xung HIGH ở chân echo.

  thoigian = pulseIn(echo, HIGH);

  khoangcach = thoigian / 2 / 29.412;

}

void quaycbsangtrai()

{

  myservo.write(180);              // tell servo to go to position in variable 'pos'

  delay(1000);

  dokhoangcach();

  myservo.write(90);              // tell servo to go to position in variable 'pos'

}

void quaycbsangphai()

{

  myservo.write(0);              // tell servo to go to position in variable 'pos'

  delay(1000);

  dokhoangcach();

  myservo.write(90);              // tell servo to go to position in variable 'pos'

}

void resetservo()

{

  myservo.write(90);

}