```
//Servo
#include <Servo.h>
Servo servo1;

//Sensor ultrasonico
#include "Ultrasonic.h"
#define echoPin 5
#define trigPin 6
Ultrasonic ultrasonic(6,5);

//Motores (shield)
#define dir1A 12
#define dir2A 13
#define velA 10
#define dir1B 11
#define dir2B 8
#define velB 9
void setup()
{
  // setup do servo
   servo1.attach (3);

  //setup do ultrasom
   Serial.begin(9600);
   pinMode(echoPin, INPUT);
   pinMode(trigPin, OUTPUT);

  //setup dos motores (shield)
   pinMode (dir1A, OUTPUT);
   pinMode (dir2A, OUTPUT);
   pinMode (velA, OUTPUT);
   pinMode (dir1B, OUTPUT);
   pinMode (dir2B, OUTPUT);
   pinMode (velB, OUTPUT);
}

//bibliotecas de movimento
void tras (){
  digitalWrite (dir1A, LOW);
  digitalWrite (dir2A, HIGH);
  analogWrite (velA, 255);
  digitalWrite (dir1B, LOW);
  digitalWrite (dir2B, HIGH);
  analogWrite (velB, 255);

}
void frente (){
  digitalWrite (dir1A, HIGH);
  digitalWrite (dir2A, LOW);
  analogWrite (velA, 255);
  digitalWrite (dir1B, HIGH);
  digitalWrite (dir2B, LOW);
```

```
  analogWrite (velB, 255);
}
void horario (){
  digitalWrite (dir1B, LOW);
  digitalWrite (dir2B, HIGH);
  analogWrite (velB, 255);
  digitalWrite (dir1A, HIGH);
  digitalWrite (dir2A, LOW);
  analogWrite (velA, 255);
}
void anti_horario (){
  digitalWrite (dir1B, HIGH);
  digitalWrite (dir2B, LOW);
  analogWrite (velB, 255);
  digitalWrite (dir1A, LOW);
  digitalWrite (dir2A, HIGH);
  analogWrite (velA, 255);
}
void pausa (){
  digitalWrite (dir1A, LOW);
  digitalWrite (dir2A, LOW);
  analogWrite (velA, 0);
  digitalWrite (dir1B, LOW);
  digitalWrite (dir2B, LOW);
  analogWrite (velB, 0);
}
//fim das bibliotecas de movimento

void loop ()
{
  servo1.write (90);
  frente ();
  int distancia = (ultrasonic.Ranging (CM));
  if (distancia < 10)
  {
    pausa ();
    delay (1000);

    //verificar direita
    servo1.write (160);
    int medidaD = (ultrasonic.Ranging (CM));
    delay (700);

    //verificar esquerda
    servo1.write (30);
    int medidaE = (ultrasonic.Ranging (CM));
    delay (700);

    // comparar e decidir
    servo1.write (90);
    if (medidaD > medidaE)
    {
```

```
      anti_horario ();
      delay (2000);
    }
    if (medidaD > medidaE && medidaE < 10)
    {
      anti_horario ();
      delay (4000);
    }
    if (medidaD < medidaE)
    {
      horario ();
      delay (2000);
    }
    if (medidaD < medidaE && medidaD < 10)
    {
      horario ();
      delay (4000);
    }
  }
}
```