

## PROGRAM MIKROKONTROLLER ARDUINO UNO

```
// Includes the Servo library
#include <Servo.h>.
#define raspi 7
// Defines Trig and Echo pins of the Ultrasonic Sensor
const int trigPin = 10;
const int echoPin = 11;
// Variables for the duration and the distance
long duration;
int distance;

Servo myServo; // Creates a servo object for controlling the servo motor

void setup() {
  pinMode(raspi, OUTPUT);
  pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output
  pinMode(echoPin, INPUT); // Sets the echoPin as an Input
  Serial.begin(9600);
  myServo.attach(12); // Defines on which pin is the servo motor attached
}
void loop() {
  // rotates the servo motor from 15 to 165 degrees
  for (int i = 0; i <= 180; i++) {
    myServo.write(i);
    delay(800);
    distance = calculateDistance(); // Calls a function for calculating the distance
    measured by the Ultrasonic sensor for each degree
    if (distance <= 40) {
      digitalWrite(raspi, HIGH);
    }
    else {
      digitalWrite(raspi, LOW);
    }
  }
  // Serial.print("Sudut = ");
  // Serial.println(i);
  // Serial.print("Distance = ");
  // Serial.println(distance);
  // Serial.println(digitalRead(raspi));
  Serial.print(i); // Sends the current degree into the Serial Port
  Serial.print(","); // Sends addition character right next to the previous value
  needed later in the Processing IDE for indexing
  Serial.print(distance); // Sends the distance value into the Serial Port
  Serial.print("."); // Sends addition character right next to the previous value
  needed later in the Processing IDE for indexing
}
// Repeats the previous lines from 165 to 15 degrees
```

```

for (int i = 180; i > 0; i--) {
  myServo.write(i);
  delay(800);
  distance = calculateDistance();
  // Serial.print("Sudut = ");
  // Serial.println(i);
  // Serial.print("Distance = ");
  // Serial.println(distance);
  // Serial.println(digitalRead(raspi));
  Serial.print(i);
  Serial.print(",");
  Serial.print(distance);
  Serial.print(".");
  if (distance <= 40) {
    digitalWrite(raspi, HIGH);
  }
  else {
    digitalWrite(raspi, LOW);
  }
}
}
// Function for calculating the distance measured by the Ultrasonic sensor
int calculateDistance() {

  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  // Sets the trigPin on HIGH state for 10 micro seconds
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH); // Reads the echoPin, returns the sound
wave travel time in microseconds
  distance = duration * 0.034 / 2;
  return distance;
}

```

