AUTOMATIC DOOR OPENER

**purpose :**

**this prototype is there just to automatise the door and windows using electrical equipment when there is presence of human being near the door, it open up it self but it can be used to the public places son as to never misbehave.**

**automatic door opening is used nowdays inside smart house due to the improving technology in the world some individual enjoy making there life more easily so as to be able to life happy and there are used also at public doors to avoid the damages to there door and avoid spreading bacteria through touching where the another person touched**

**PROGRAMING CODE:**

#include<Servo.h>

Servo myservo;

int pos=20;

const int trigpin=5;

const int echopin=6;

long duration;

float distance;

void setup()

{

myservo.attach(11);

pinMode(trigpin,OUTPUT);

pinMode(echopin,INPUT);

myservo.write(pos);

}

void loop()

{

//serial.begin(9600);

digitalWrite(trigpin,LOW);

delayMicroseconds(1);

digitalWrite(trigpin,HIGH);

delayMicroseconds(1000);

digitalWrite(trigpin,LOW);

duration=pulseIn(echopin,HIGH);

distance=0.034\*(duration/2);

//serial.println(distance);

if(distance<10)

{

myservo.write(pos+160);

delay(3000);

}

else

{

myservo.write(pos);

}

delay(1000);

}

**HERE IS EQUIPMENT USED TO THIS PROJECT:**

* Arduino Uno x 1
* Ultrasonic Sensor x 1
* Servo Motor x 1
* Breadboard

Description

**Arduino uno**: is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a [microcontroller](http://en.wikipedia.org/wiki/Microcontroller)) and a piece of [software](http://arduino.cc/en/Main/Software), or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board.

The Arduino platform has become quite popular with people just starting out with electronics, and for good reason. Unlike most previous programmable circuit boards, the Arduino does not need a separate piece of hardware (called a programmer) in order to load new code onto the board -- you can simply use a USB cable. Additionally, the Arduino IDE uses a simplified version of C++, making it easier to learn to program. Finally, Arduino provides a standard form factor that breaks out the functions of the micro-controller into a more accessible package.



**Jumper wire:**

A jump wire (also known as jumper, jumper wire, DuPont wire) is an electrical wire, or group of them in a cable, with a connector or pin at each end (or sometimes without them – simply "tinned"), which is normally used to interconnect the components of a breadboard or other prototype or test circuit, internally or with other equipment or components, without soldering.



**Ultrasonic sensor**:  is an electronic device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal. Ultrasonic waves travel faster than the speed of audible sound (i.e. the sound that humans can hear). Ultrasonic sensors have two main components: the transmitter (which emits the sound using piezoelectric crystals) and the receiver (which encounters the sound after it has travelled to and from the target).  is an electronic device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal. Ultrasonic waves travel faster than the speed of audible sound (i.e. the sound that humans can hear). Ultrasonic sensors have two main components: the transmitter (which emits the sound using piezoelectric crystals) and the receiver (which encounters the sound after it has travelled to and from the target



**Servo motor**:  a small device that has an output shaft. This shaft can be positioned to specific angular positions by sending the servo a coded signal. As long as the coded signal exists on the input line, the servo will maintain the angular position of the shaft.



Bread board: A breadboard (sometimes called a plugblock) is used for building temporary circuits. It is useful to designers because it allows components to be removed and replaced easily. It is useful to the person who wants to build a circuit to demonstrate its action, then to reuse the components in another circuit.

BREAD BOARD



**Conclusion** : during this project making i wanted to solve the problems of damaging door lock while opening every time at public places so to have automated door every time when there is presence of object and human being .