

# **AHSANULLAH UNIVERSITY of SCIENCE and TECHNOLOGY**

## **Project Report**

### ***Operating Switch by Voice( with Arduino)***

#### **Introduction:**

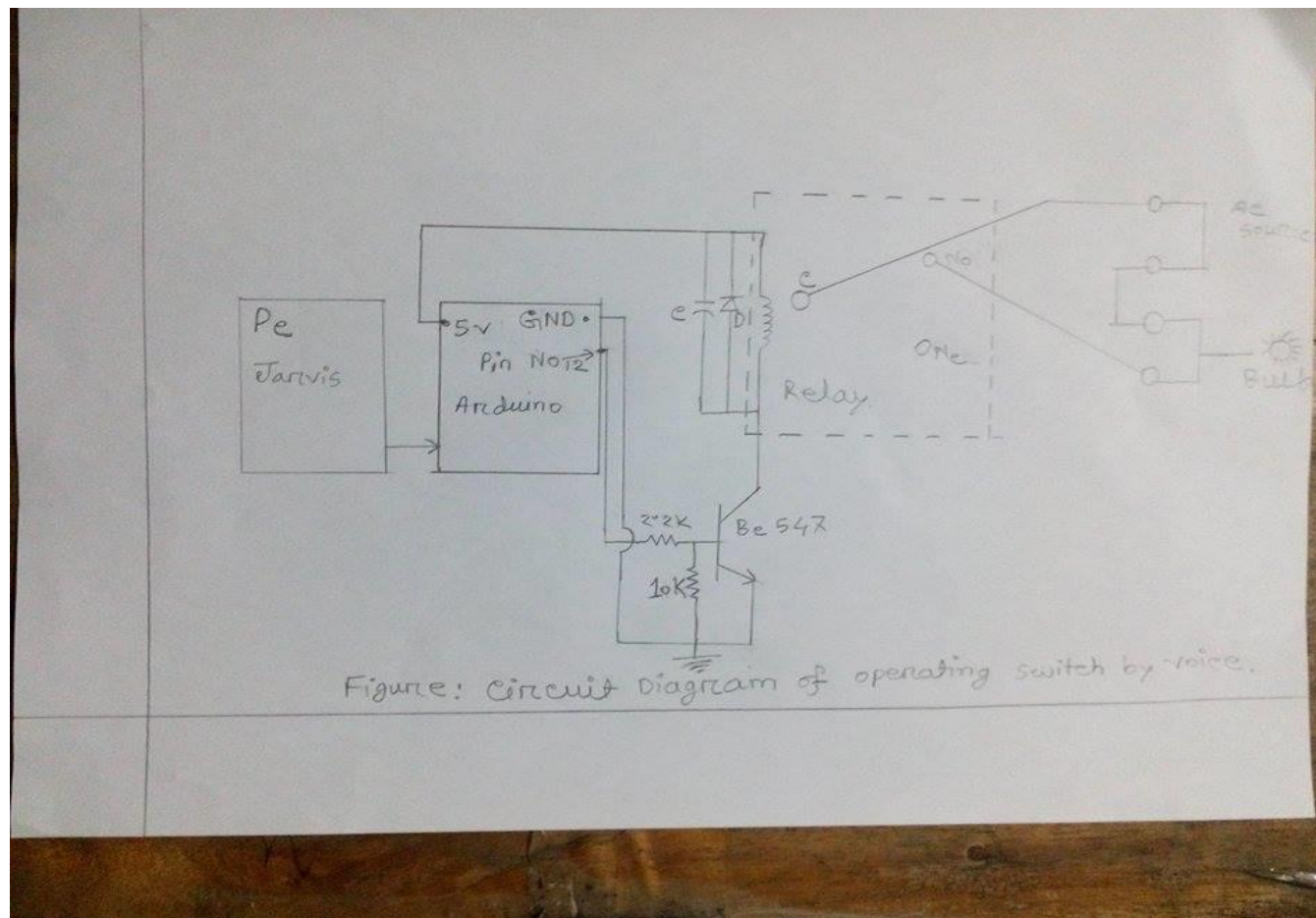
To turn on or off a bulb ,we need a switch. But a bulb can be turned on or off by voice .Using Jarvis and arduino we can easily turn on or off a bulb. Here, we have created scope to control a bulb by voice which is operated with Jarvis.

#### **Equipments:**

1. Arduino UNO R32.
2. Relay 6v
3. Transistor BC 547
4. Capacitor (100uF,50v)
5. Diode (4007)
6. Bulb
7. Bulb Holder
8. Resistor(10k,2.2k)
9. 2 pin socket
10. Connector
11. Vero board

## 12. Connecting wire

Circuit diagram:



Working Principle:

At first we give command to Jarvis. Jarvis takes the command then process and finally give a output (corresponding to the input browsing at Jarvis location). In the Jarvis location we browse two codes .One for light on and another for light off. After that we set arduino program. At the arduino we use pin 12 for output. Then output pin is connected to the base of transistor. Here we use transistor for switching the relay. Another 5 v is directly connected to the relay. .220 v (AC) is directly connected to the common pin of relay and bulb is connected from the NO pin of relay. When output pin is high ,then base current is flowing and relay is switched on. At that moment light is on. When output pin is low ,then base current is zero and relay is switched off, then light is off.

**Code:****Arduino code:**

```
int incomingByte = 0;

void setup()

{

Serial.begin(9600);

pinMode(12,OUTPUT); }

void loop()

{

if (Serial.available() > 0)

{

incomingByte = Serial.read();

Serial.print("I received: ");

Serial.println(incomingByte, DEC); }

if (incomingByte==100)

digitalWrite(12,HIGH);

else if (incomingByte==97)

digitalWrite(12,LOW); }
```

**Code for switch on:**

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.IO.Ports;
```

```

using System.IO;

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            SerialPort sp= new SerialPort();
            sp.PortName = "com4" // write your
com port connected to arduino
            sp.BaudRate=9600;
            sp.Open();
            sp.Write("d");
            sp.Close();
        }
    }
}

```

### **Code for switch off:**

```

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.IO.Ports;

using System.IO;

namespace ConsoleApplication1
{
    class Program

```

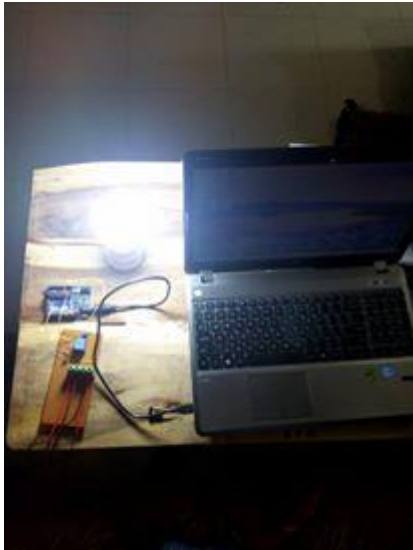
```
{  
    static void Main(string[] args)  
    {  
        SerialPort sp= new SerialPort();  
        sp.PortName = "com4" // write your  
com port connected to arduino  
        sp.BaudRate=9600;  
        sp.Open();  
        sp.Write("a");  
        sp.Close();    }  
    }  
}
```

Picture :

Light off:



Light on:



### **Troubleshooting:**

1. Jarvis software may not work in all pc .It is very difficult for set up Jarvis in pc.

### **Applications:**

Can be used to control light, fan and so on.

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*Reference:*

**<http://www.instructables.com/id/Voice-operated-lights-with-Arduino/>**