



Voice Controlled Light

Welcome to the future! Our voice-controlled light system is here to here to take your living experience to the next level.



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Objective

1

Efficiency

Reduce the hassle of
flicking light switches -
- make it hands-free!

2

Safety

Eliminate the risk of
tripping in the dark by
using voice control to
turn on lights.

3

Comfort

Control the ambiance of your home with just your voice
voice commands.

Problem Statement

Switches

Typical light switches are clunky and require a physical action to turn lights on or off, creating a hassle.

Accessibility

People with disabilities may find it challenging to physically reach a switch, particularly if they have mobility impairments, limiting their independence.

Situations

There are plenty of moments when we have our hands full, so so the ability to control our home's home's lights through our voice voice comes in as a help.

How Can We Solve the Problem?



Benefits of Using Voice Controlled Light

Accessibility

Voice-controlled lights are especially convenient for elderly people or those with disabilities, increasing their freedom and independence.

Hygiene

No need to touch germy light switches! Keep your hands clean from harmful bacteria.

Energy Efficiency

You won't forget to turn off lights ever again, saving a significant amount of energy and and decrease your monthly electricity bills!

Enhanced Experience

Voice-controlled lights provide an exciting and futuristic living experience, transforming your home into a smart and smart and innovative living space.

How Does Our Project Work?



Smart home integration

Our product Integrated with your smart smart home system like Alexa, Google Home, and Siri.



Voice recognition

With our built-in voice recognition system, system, that captures all vocals that give on give on the effective commands.

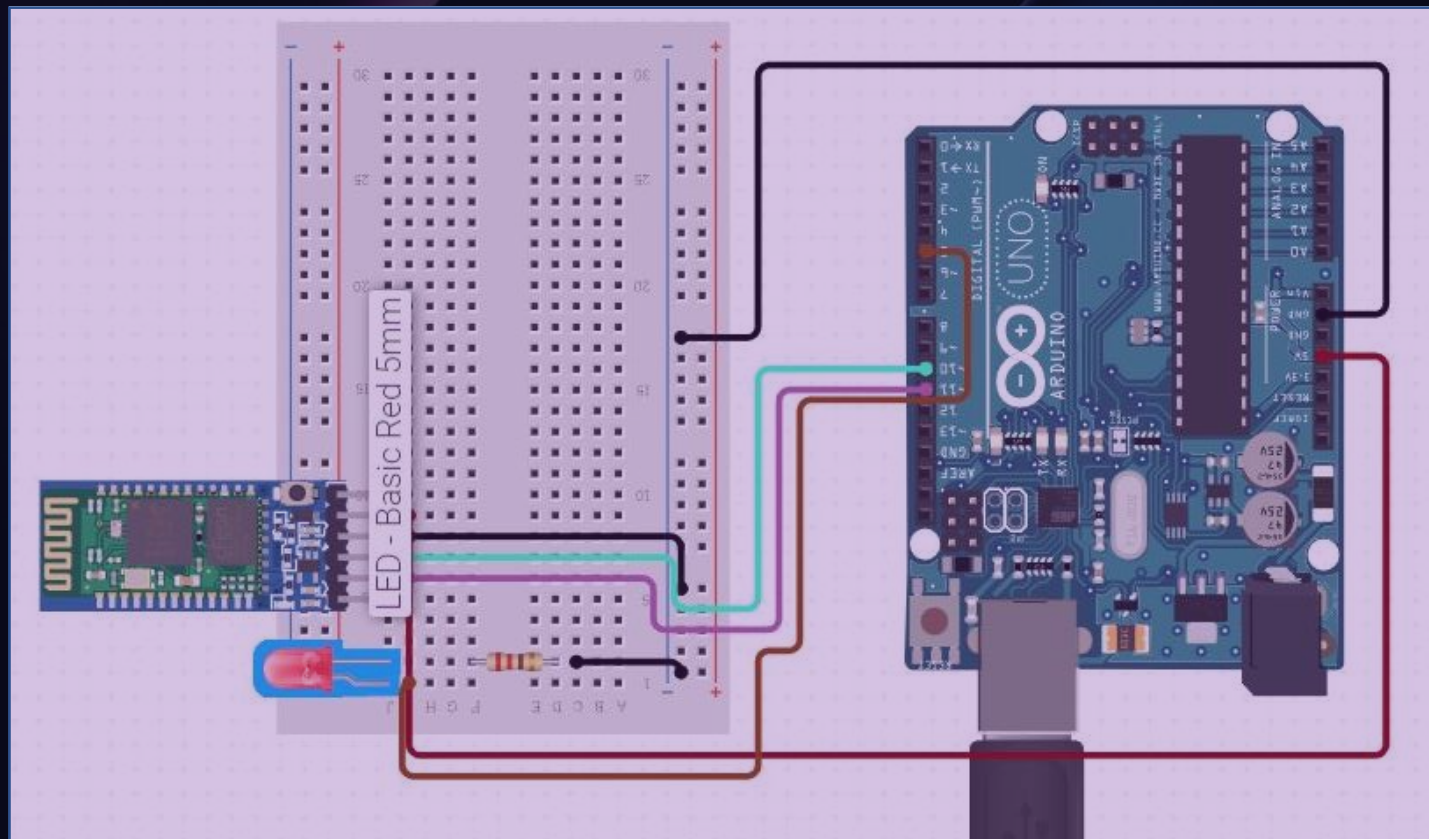


LED Light Intelligent Control

Compatible with several LED light models, models, providing flexibility, energy efficiency and options in individualizing individualizing your space.

Implementation

Circuit Diagram



Components:

- Arduino Uno
- Basic LED
- Bread board
- 220 Ohm Resistor
- HC 05 Bluetooth Module
- Wires
- A computer

Code

Uno Code

```
#include "SoftwareSerial.h"
SoftwareSerial serial_connection(10, 11);
#define BUFFER_SIZE 64
char inData[BUFFER_SIZE];
char inChar=-1;
int i=0;
void setup()
{
  Serial.begin(9600);
  serial_connection.begin(9600);
  serial_connection.println("Ready!!!");
  Serial.println("Started");
  pinMode(2, OUTPUT);
}
```



```
void loop()
{
  byte byte_count=serial_connection.available();
  if(byte_count)
  {
    Serial.println("Incoming Data");
    int first_bytes=byte_count;
    int remaining_bytes=0;
    if(first_bytes>=BUFFER_SIZE-1)
    {
      remaining_bytes=byte_count-(BUFFER_SIZE-1);
    }
    for(i=0;i<first_bytes;i++)
    {
      inChar=serial_connection.read();
      inData[i]=inChar;
    }
    inData[i]='\0';
    if(String(inData)=="Turn on" || String(inData)=="turn on")
    {
      digitalWrite(2, HIGH);
    }
  }
}
```

```
else if(String(inData)=="Turn off" || String(inData)=="turn off")
{
    digitalWrite(2, LOW);
}
for(i=0;i<remaining_bytes;i++)
{
    inChar=serial_connection.read();
}
Serial.println(inData);// }
delay(100);
}
```

Python Voice Recognition Code

```
import speech_recognition as sr
import serial
import time

def main():

    r = sr.Recognizer()

    with sr.Microphone() as source:
        r.adjust_for_ambient_noise(source)

        print("Please say something")

        audio = r.listen(source)

        print("Recognizing Now .... ")
```



```
# recognize speech using google
```

```
try:
```

```
    print("You have said \n" + r.recognize_google(audio))
```

```
except Exception as e:
```

```
    print("Say something? : " + str(e))
```

```
    return 'empty'
```

```
return r.recognize_google(audio)
```

```
if __name__ == "__main__":
```

```
    print("Start")
```

```
    port="COM9"
```

```
    bluetooth=serial.Serial(port, 9600)
```

```
    print("Connected")
```

```
    bluetooth.flushInput()
```

```
while True:
```

```
    x = main().strip()
```

```
    y = x
```

```
    x = bytes(x,'utf-8')
```

```
    if y == 'Hello' or y == 'hello':
```

```
        break
```

```
    bluetooth.write(b""+x)
```

```
    input_data=bluetooth.readline()
```

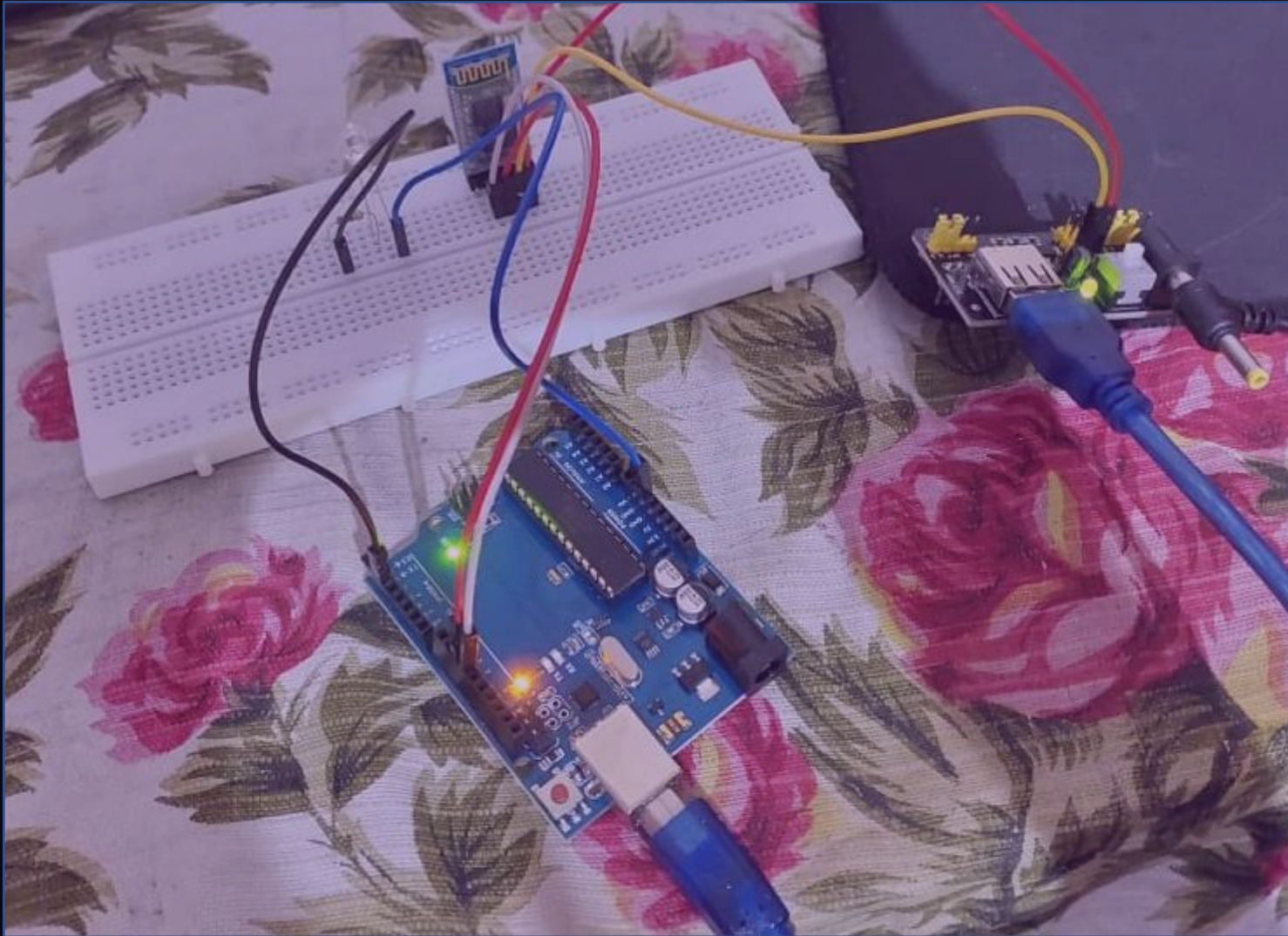
```
    print(input_data.decode('utf-8'))
```

```
    time.sleep(0.1)
```

```
bluetooth.close()
```

```
print("Done")
```

Hardware picture



Why Voice Controlled Light is the Future

Stylish and Convenient

Voice-controlled lights fit conveniently in any any decor style without compromising on style style and functionality.

1

Automation is Key

In the fast pace of life, A variety of daily life, life, repetitive tasks could use automation to to optimize energy use and use of time, and and voice control is part of this movement. movement.

2

3

Improved Home Security

Use your voice to turn on the lights to create an create an impression of occupancy while you're you're away, indicating the presence within the within the house.

Is it Worth it?

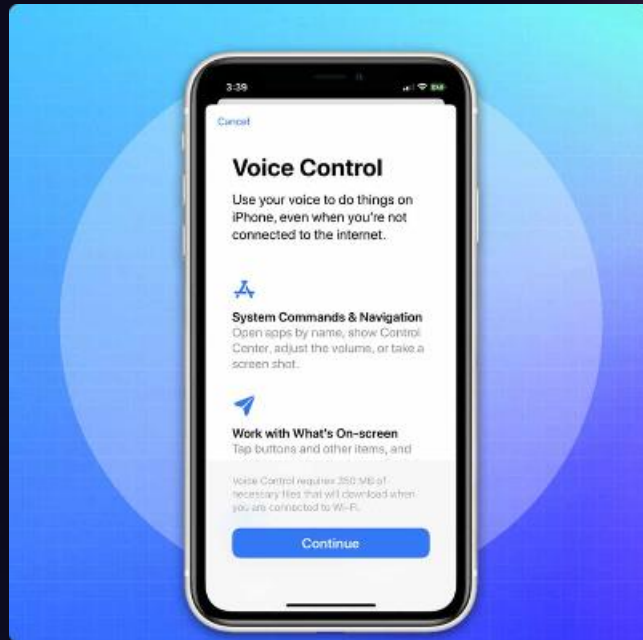
Yes!

If you care about modernizing your home and making it making it more comfortable and functional, this is a a highly recommended investment.

No!

If you prefer traditional light switches, don't own a smart home assistant or don't see any need for the benefits listed above.

Conclusion



Hands-free

Voice control provides the convenience of hands-free control over your lights.



Smart Living

Advanced features such as Siri and Alexa integration make voice-controlled lights the central pillar of smart living rooms.



Efficient

The energy-saving feature of this product ensures that you don't pay a penny more than necessary for your electricity bills.