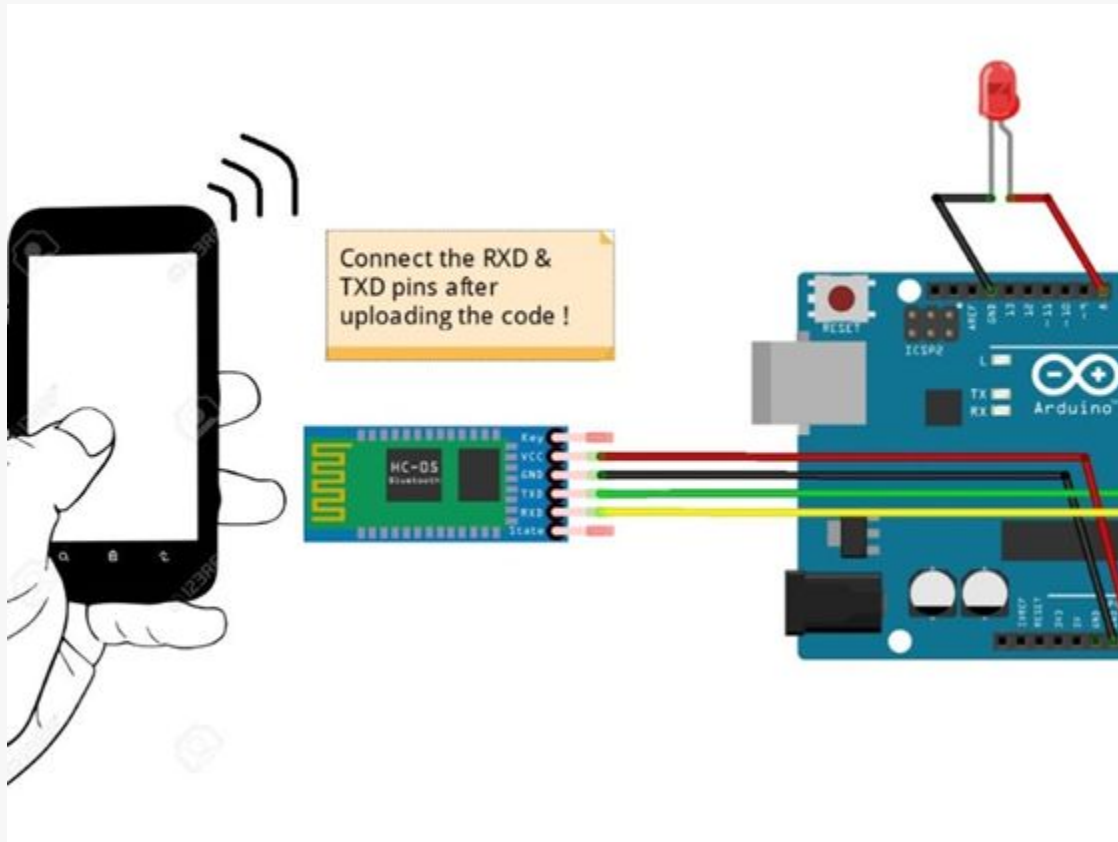# LED Controlling using Bluetooth

About this project

- In this project, we are showing you how to setup Bluetooth communication between Arduino and HC-06 (slave device).

- We will build simple circuit based on one LED with resistor and HC-06 connected to Arduino UNO.

- As the app used for communication between these two devices we will use app called: **Smart Bluetooth - Arduino Bluetooth Serial**
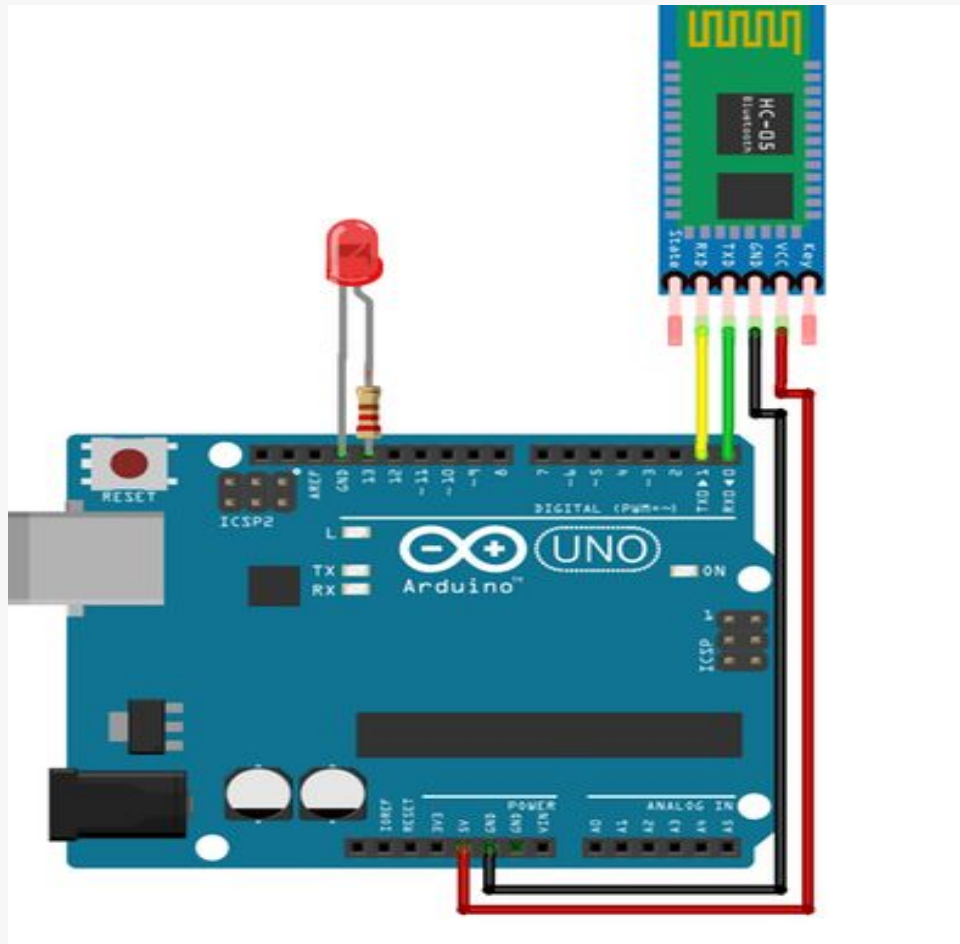
Working of Project

- HC 05/06 works on serial communication. Here the android app is designed sending serial data to the Bluetooth module when certain button is pressed.

- The Bluetooth module at other end receive the data and send to Arduino through the TX pin of Bluetooth module(RX pin of Arduino).

- The Code fed to Arduino check the received data and compares.

- If received data is 1 the LED turns on turns OFF when received data is 0.

Note: Don't Connect RX to RX and TX to TX of Bluetooth to Arduino you will receive no data , here TX means Transmit and RX means Receive.

Components Required

- Arduino board

- Breadboard

- Bluetooth module/sensor – HC05

- Couple of jumpers wires

- LED

- An ANDROID phone [not in kit]

Connection Diagram

Connections :-

Arduino Pins   **Bluetooth Pins**

RX (Pin 0)   ———->   TX

TX (Pin 1)   ———->   RX

5V   ———->   VCC

GND   ———->   GND

Connect a LED negative to GND of Arduino and positive to pin 13 with a resistance valued between 220Ω – 1KΩ.

Steps to Connect with Android Apk.

- Download: https://play.google.com/store/apps/details?id=com.kopunectomas.smartbluetooth

- Open the app, slide through the intro, hit SEARCH button and search for nearby devices.

- When your device is found, select it by clicking on it.

- Select preferred theme (dark or light) and hold the button you selected.

- Wait for the connection, if it fails, try to reconnect.

- After successful connection, tap on the big led in the first tab (led) and check the LED connected to your Arduino if it blinks.

Code

File Edit Sketch Tools Help

LED_control_using_bluetooth_module

```
//#include<SoftwareSerial.h>
//SoftwareSerial bl(2,3);
/*
* Bluetooh Basic: LED ON OFF - Avishkar
* Coder - Mayoogh Girish
* Website - http://bit.do/Avishkar
* Download the App : https://github.com/Mayoogh/Arduino-Bluetooth-Basic
* This program lets you to control a LED on pin 13 of arduino using a bluetooth module
*/
char data = 0;            //Variable for storing received data
void setup()
{
    Serial.begin(9600);   //Sets the baud for serial data transmission
    pinMode(13, OUTPUT);  //Sets digital pin 13 as output pin
}
void loop()
{
    if(Serial.available()>0)      // Send data only when you receive data:
    {
        data = Serial.read();         //Read the incoming data & store into data

        Serial.print(data);           //Print Value inside data in Serial monitor
        Serial.print("\n");
        if(data == HIGH)             // Checks whether value of data is equal to 1
            digitalWrite(13, HIGH);   //If value is 1 then LED turns ON
        else            //  Checks whether value of data is equal to 0
            digitalWrite(13, LOW);    //If value is 0 then LED turns OFF
    }
}
```

Project Link : https://youtu.be/-vK_pKBSHbE