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Practica 15 – Bluetooth

Objetivo:
Conocer y aplicar los conocimientos de comunicaciones con conectado el dispositivo de bluetooth a la computadora utilizando Arduino.

Competencias:

Identifica las características eléctricas de un microcontrolador.
Conoce la arquitectura interna del microcontrolador.
Comprende la estructura de registros del microcontrolador.
Analiza dispositivos de entrada/salida y puertos del microcontrolador.
Organiza y clasifica información proveniente de fuentes diversas.

Material necesario:
1 Tarjeta ARDUINO UNO
1 Cable USB para Arduino
1 Tarjeta Protoboard
1 Software IDE de Arduino
1 Dispositivo bluetooth HC-06
1 Software TeraTerm

Cables

Descripción:

Setting up the HC-06 is as easy as ABC. All you need to know is the pin configuration. The HC-06 has 6 pins: wakeup, VCC, GND, TXD, RXD and State. Right now I will only deal with 4 pins, which are VCC, GND, TXD and RXD.

Here is how you should connect the Bluetooth module to your Arduino. HC-06>>>Arduino

VCC>>>>3.3v
GND>>>>GND
TXD>>>>RXD
RXD>>>>TXD

The HC-06 acts as a serial port through which you can send and receive data.

So using a serial terminal or a Bluetooth customized application on your computer or phone, you can control and monitor your project. I used Teraterm as the serial terminal.

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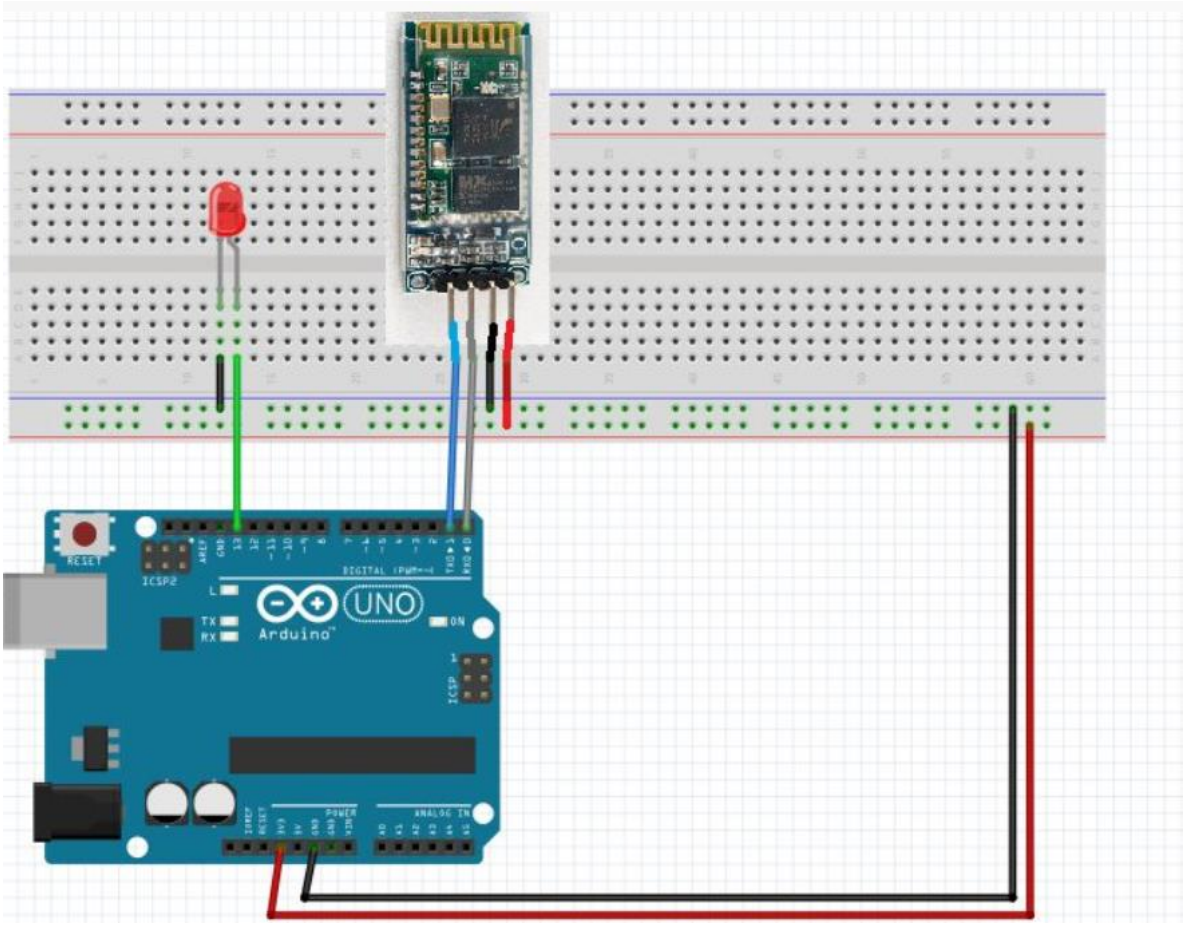
Before, uploading the code to the Arduino, disconnect the HC-06 module, since it shares the tx/rx pins and will interfere with the upload. Connect it back once the code has been uploaded successfully.



Instalar el TeraTerm.

Configurar el Bluetooth de la computadora con el dispositivo HC-06

Código:

This code enables you to send a string to the Arduino via Bluetooth and get an echo back on your serial monitor.

NB: if you are using an **arduino mega** change this line of code **while(Serial.available());** to **while(Serial.available()>0);** otherwise the code will not work

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Otra nota: la instrucción Serial podría ser cambiada al Serial1 por ejemplo.

```
String message; //string that stores the incoming message

void setup()
{
  Serial.begin(9600); //set baud rate
}

void loop()
{
  while(Serial.available()>0)
  {//while there is data available on the serial monitor
    message+=char(Serial.read());//store string from serial command
  }
  if(Serial.available()>0)
  {
    if(message!="")
    {//if data is available
      Serial.println(message); //show the data
      message=""; //clear the data
    }
  }
  delay(5000); //delay
}
```