DIY: Arduino Chatting

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Networking is the one of the most important mean of communication used to communicate with people who are connected to one. Most of the available network communication modules in the market are not affordable by the overall end users. Considering this problem, a prototype has been developed, which can be used as networking module. It is made up of cheap and easily available standard modules.

Working of the system

The overall communication system uses the I2C protocol to send or receive data. Consider the two devices between which the data transfer is going to take place. One of these will connected as master and the other as slave. The master device is going to connect with the slave devices and control communication between them.

Modules Used

The Bluetooth Module (HC-05) has been used as the communication medium for building the basic prototype. Two such devices are required, since this would be a two way communication in master-slave mode.
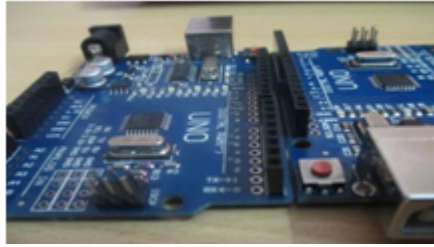
For controlling the data transmission in the prototype, an Arduino microcontroller board has been used.

About the Modules

Arduino

Arduino is open source hardware and software which is used to create the prototype of the idea what is in your mind. The software for the machine is given by the same

developer of the hardware.

Bluetooth Module (HC-05)

Bluetooth (HC-05) is a Interactive way for the communication wirelessly around the distance of 9m (30ft)Approx. It is capable to send the discrete data with the Synchronized baudrates.

But now most of the Bluetooth devices (HC-05) which are now available at very cheap cost and low power consumption. And most importantly it is available with the Arduino compatible version.

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There are lots of configured types of BT Modules are available in the home market. Which can varies in configuration according to it's version.
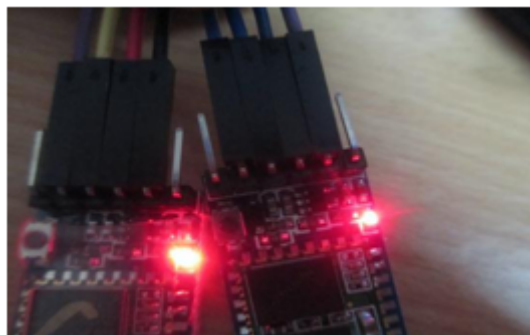
Wiring Diagram

We have to configure the HC-05 module to meet the requirement. For the configuration AT commands for the HC-05 module is used. The wiring and the AT Commands are detailed. Using this AT commands described the configuration of this BT is changed.
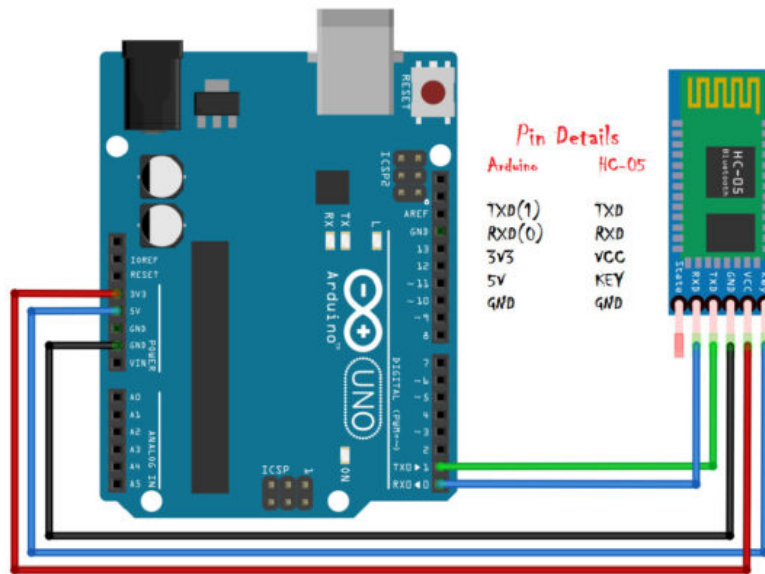
Slave Role

To configure the HC-05 as the slave role. Do the AT commands after entering your BT into the AT commands.

HC-05 AT COMMANDS

Function	Command	Response	Parameter
Test	AT	OK	None
Restore default	AT+ORGL	OK	None
Name	AT+NAME?	OK	HC-05 (Default)
Passkey	AT+PSWD?	OK	1234 (Default)
Role perform	AT+ROLE?	OK	0-Slave 1-Master
Role Assign	AT+ROLE=0	OK	Work as slave to connect to master device
To know address	AT+ADDR?	OK	2015:4:234568
Sync speed	AT+UART?	OK	38400,0,0 (Default)
Ready to pair	AT+INIT	OK	None

After done this. Remember the address of your slave device.

Time for Master

It's time to configure the master devices. After following the below steps.

HC-05 AT COMMANDS

Function	Command	Response	Parameter
Test	AT	OK	None
Restore default	AT+ORGL	OK	None
Name	AT+NAME?	OK	HC-05 (Default)
Passkey	AT+PSWD?	OK	1234 (Default)
Role perform	AT+ROLE?	OK	0-Slave 1-Master
Role Assign	AT+ROLE=1	OK	Work as master to connect to slave
Sync speed	AT+UART?	OK	38400,0,0 (Default)
Ready to pair	AT+INIT	OK	None
Search nearby	AT+INQ	OK	Inquire the nearby BT to connect
Connection mode	AT+CMODE?	OK	0-Connects to specified available address 1-Connect to any available address
Connecting	AT+LINK=<addr>	OK	Type slave address to connect with.

Use **AT+LINK <address of the slave>** to interconnect the master and the slave device.

After config. Circuit reconnect

After configuring your BT module reconnect the circuit as show.
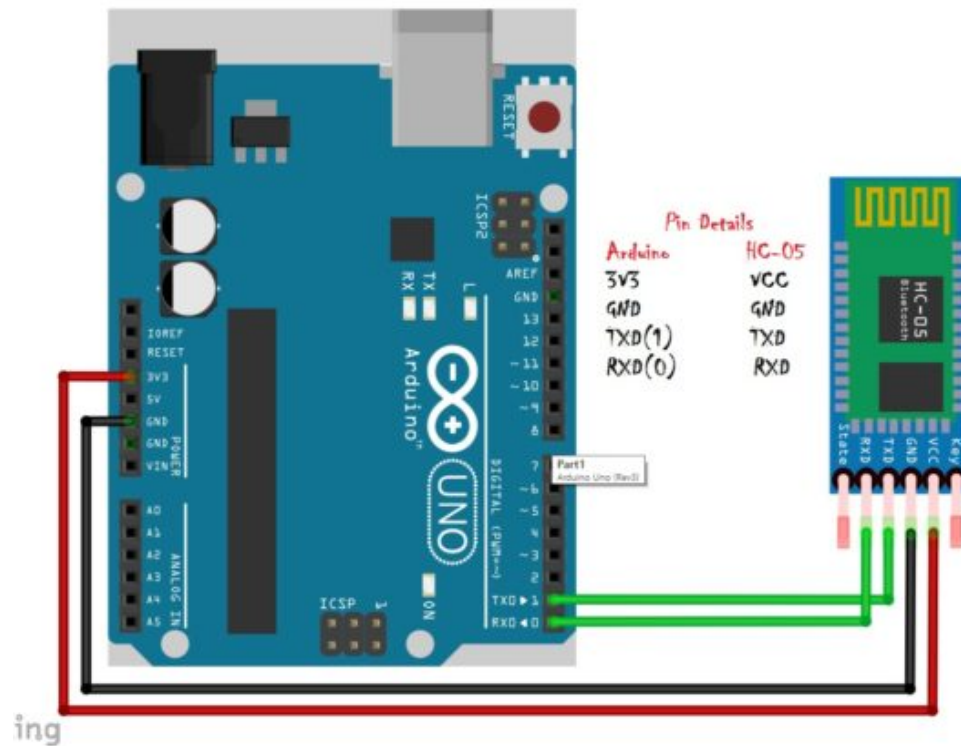
Programming

The important tool to control the Hardware is the software. We have to do the software programming to finish the job.

```
#include <SoftwareSerial.h>//Serial communication header
SoftwareSerial a(6, 7); // RX | TX
void setup()
{
  Serial.begin(9600);//begin serial monitor with 9600 baud
  Serial.println("Type message");
  a.begin(38400);  // HC-05 default baud
}
void loop()
{
  if (a.available())
    Serial.write(a.read());//reads data from BT
  if (Serial.available())
```

```
      a.write(Serial.read());//reads data from serial monitor
  }
```

This is the work we have done to get the prototype of the Intra networking communication. It's cheap easy to do and reliable.

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