Week - 3.

Aim: Write a Program to transfer sensor data to smart Phone using bluetooth on Arduino.
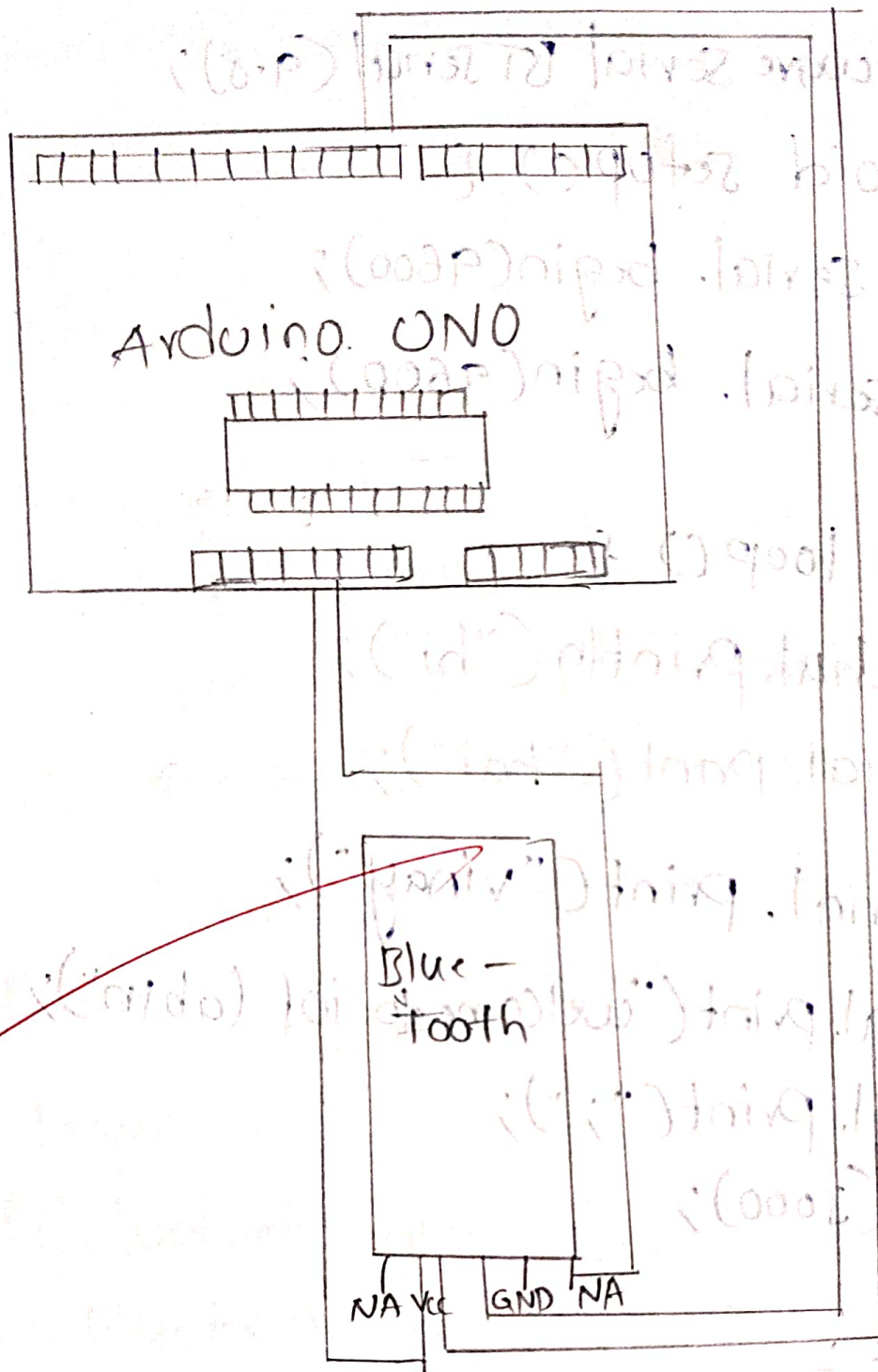
Hardware Requirements:

1. Arduino UNO
2. Android Smartphone that has Bluetooth
3. Hc-05 Bluetooth module
4. Android studio (To develop the required Andriod App)
5. USB cable for Programming and Powering the Arduino.

Procedure:

→ connect your arduino cable to the USB board of the system.

→ Go to tools select Port.

→ Select board (Arduino UNO).

→ connect Jumper wires to the Pin. Store the Program.

→ Verify / compile.

→ upload.

Vcc	5V
GND	GND
TX	9
Rx	8

Arduino UNO

Blue-tooth

NA Vcc   GND NA

ARDUINO UNO	BT sensor
9	TX
8	Rx
Vcc	5.0v
GND	GND

Program:

```
#include <SoftwareSerial.h>

SoftwareSerial BTSerial(9,8);  // Rx↑TX

void setup() {
    Serial.begin(9600);

    BTSerial.begin(9600);

}

void loop() {
    Serial.println("hi");

    BTSerial.println("hai");

    BTSerial.println("Struuth");
```

```
BT Serial. Println ("welcome To iot LAB \n");
    BT Serial. Println (" ");
    delay (3000);
    }
```

Output:

Shonnu.

welcome to iot LAB
;

Program:

```
#include <softwareSerial.h>.

SoftwareSerial Bluetooth (9,8); // Rx, Tx

int LED =13;  // the on-board LED

int Data;  // the data received.

void setup() {

    Bluetooth. begin (9600);
    serial. begin (9600);
    Serial. Println ("waiting for command: ");
    Bluetooth. Println ("send 1 to turn on the LED.
                        send 0 to turn off the LED");

    PinMode (LED, OUTPUT);

}
```

```
Void loop () {
    if (Bluetooth.available ()) {
    Data = Bluetooth.read ();

    if (Data == '1') {
    digitalWrite (LED, HIGH);
    Serial.Println ("LED on!");
    Bluetooth.Println ("LED on!");
    }
    else if (Data == '0') {

    digitalWrite (LED, LOW);
    Serial.Println ("LED off!");
    Bluetooth.Println ("LED off!");
        }
    }
    else (;)
    delay (1000);
}.
```

Terminal	Serial monitor
connecting to HC-05	
connected	New line 9600
waiting For command	
send 1 to turn on	LED ON!
send 0 to turn off	LED OFF!
1	
LED On !!	
0	
LED OFF!	