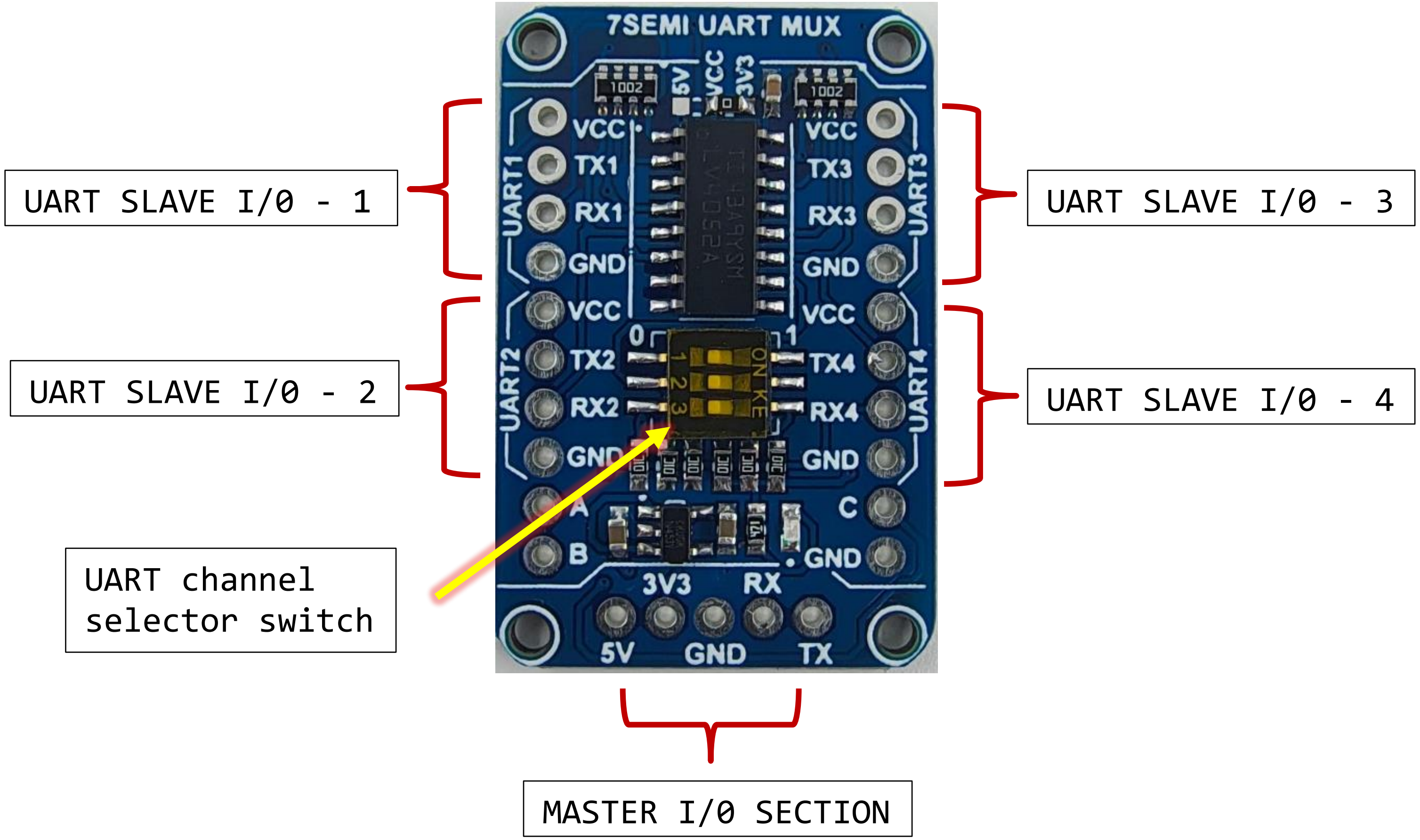
7Semi UART MUX DEMUX USER GUIDE

What this board can do?

- Using this board, you can perform UART communication between one master and multiple slave devices (up to four channels specifically for this board).
- You can do this by changing the switch positions provided on the board.

PINOUTS



UART SLAVE I/0 - 1

UART SLAVE I/0 - 2

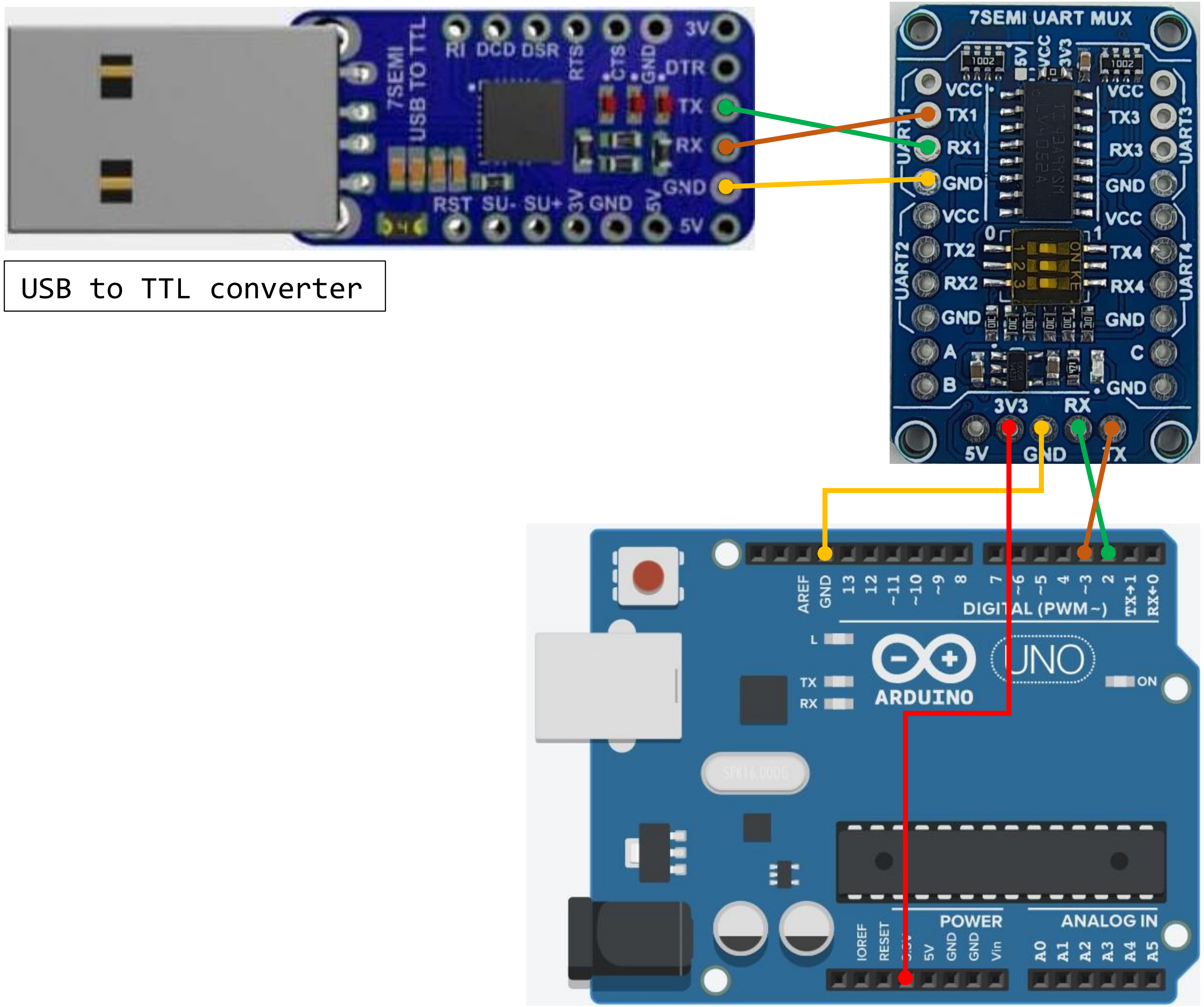
UART channel selector switch

UART SLAVE I/0 - 3

UART SLAVE I/0 - 4

MASTER I/0 SECTION

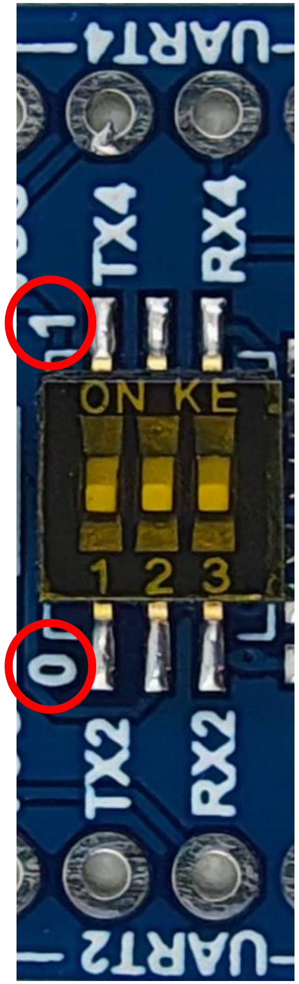
CONNECTION DIAGRAM OF UART MUX



USB to TTL converter

Logic of ‘A’	Logic of ‘B’	UART output selected
0	0	UART-1
0	1	UART-3
1	0	UART-2
1	1	UART-4

Note:- Logic of C (INH) should be kept low in order to switch on the module



By default, all the switches are connected to Logic Low ‘0’.

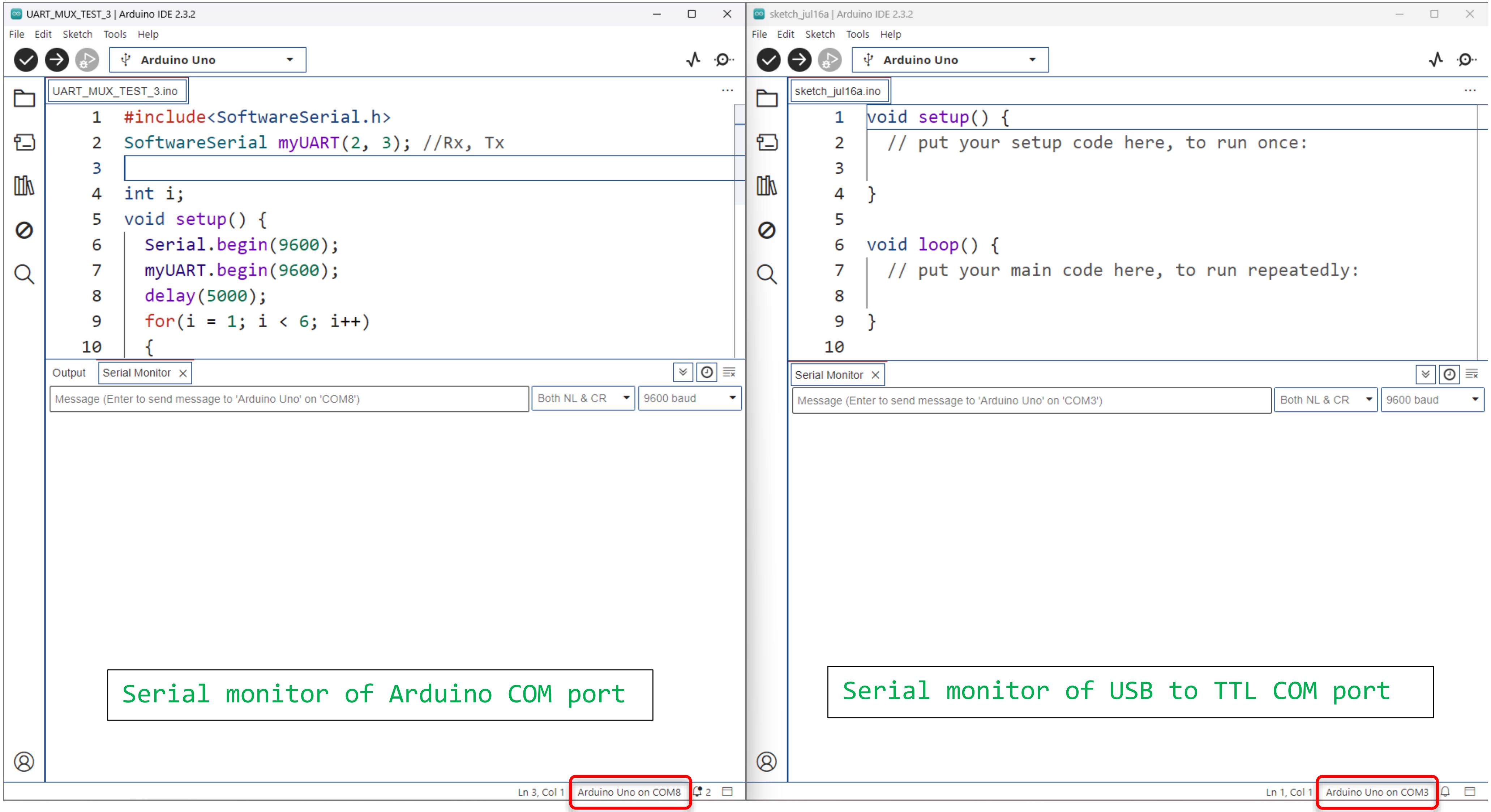
Switch 1 is connected to A
Switch 2 is connected to B
Switch 3 is connected to C

Make the connections as shown in the diagram above and upload the code in your Arduino board given in the link - UART mux test code

EXPLANATION OF THE ARDUINO CODE TESTING

1. For this particular code of testing we are considering Arduino board as ‘MASTER’ and USB to TTL converter as ‘SLAVE’.
2. The UART communication will now take place between Arduino and USB to TTL.
3. For this testing we need to open two serial monitors in the Arduino IDE.
4. First serial monitor will open at the COM port to which your Arduino board is connected.
5. To open the second serial monitor in your Arduino IDE go to **File → New sketch**
6. After connecting USB to TTL converter to your Computer/ Laptop USB you will get one more COM port. To check the port you can open **Device Manager** in your system and search under the option **PORTS (USB & LPT).**
7. In the second serial monitor select the COM port of the USB to TTL for which you searched in the device manager.
8. The serial monitor at USB to TTL COM port should display **‘UART, Hello 1 to UART, Hello 5’** after pressing the reset button of the Arduino board.
9. Now to send message from second serial monitor to first one you can type message in the second serial monitor and press enter.
10. You can also follow the images provided below for reference.

STEP-1:- Open both serial monitors



UART_MUX_TEST_3 | Arduino IDE 2.3.2

UART_MUX_TEST_3.ino

```
#include<SoftwareSerial.h>
SoftwareSerial myUART(2, 3); //Rx, Tx

int i;
void setup() {
  Serial.begin(9600);
  myUART.begin(9600);
  delay(5000);
  for(i = 1; i < 6; i++)
  {
```

Message (Enter to send message to 'Arduino Uno' on 'COM8')

Both NL & CR

9600 baud

Serial monitor of Arduino COM port

Ln 3, Col 1 Arduino Uno on COM8

sketch_jul16a | Arduino IDE 2.3.2

sketch_jul16a.ino

```
void setup() {
  // put your setup code here, to run once:

}

void loop() {
  // put your main code here, to run repeatedly:

}
```

Message (Enter to send message to 'Arduino Uno' on 'COM3')

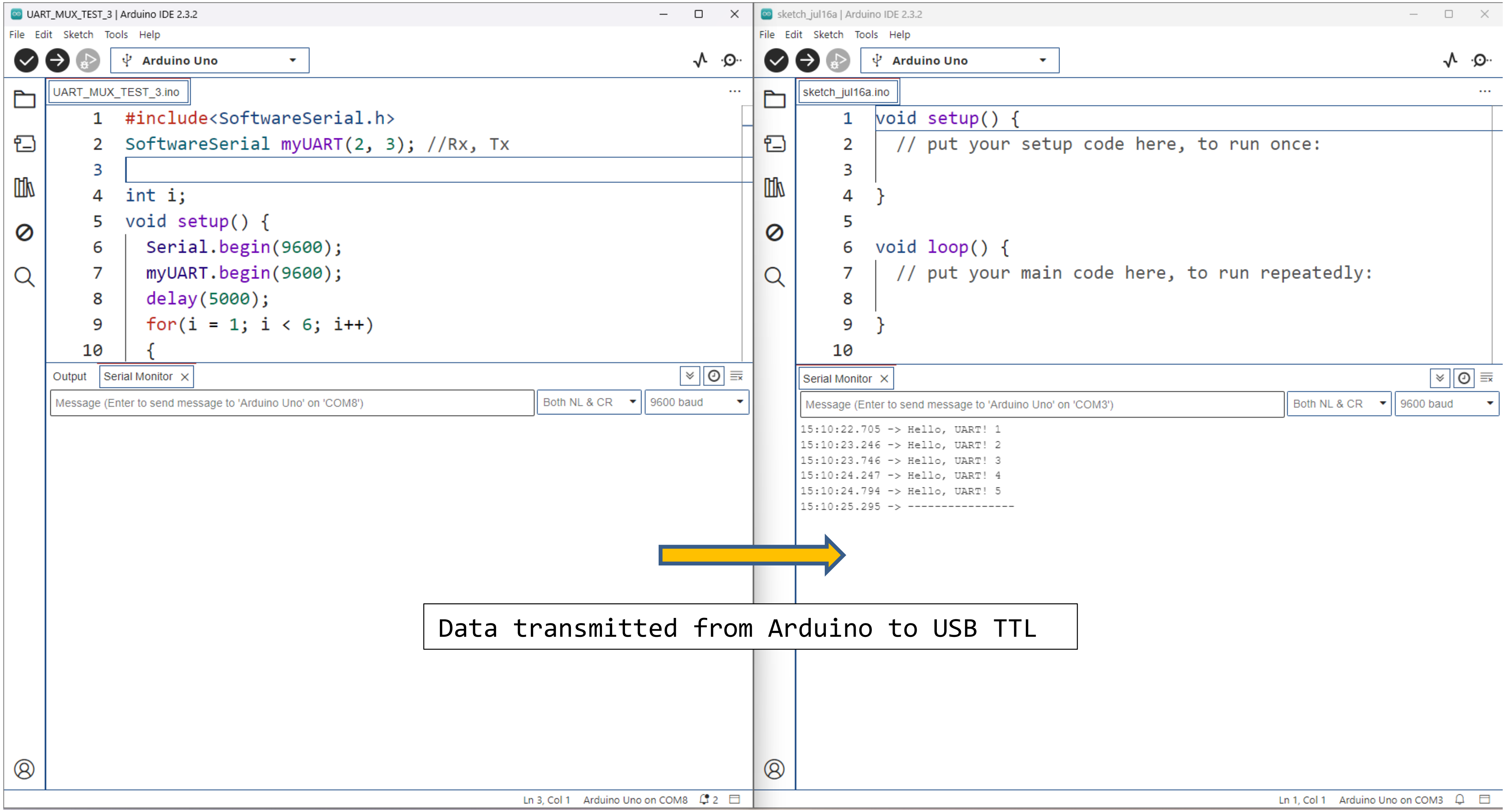
Both NL & CR

9600 baud

Serial monitor of USB to TTL COM port

Ln 1, Col 1 Arduino Uno on COM3

STEP-2:- Press the reset button of your Arduino board. Data will be transmitted from Arduino to USB TTL


UART_MUX_TEST_3 | Arduino IDE 2.3.2
File Edit Sketch Tools Help
Arduino Uno
UART_MUX_TEST_3.ino
Output
Serial Monitor
sketch_jul16a | Arduino IDE 2.3.2
File Edit Sketch Tools Help
Arduino Uno
sketch_jul16a.ino
Serial Monitor

UART_MUX_TEST_3.ino

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  myUART.begin(9600);
  delay(5000);
  for(i = 1; i < 6; i++)
  {
```

Message (Enter to send message to 'Arduino Uno' on 'COM8')
Both NL & CR
9600 baud

Ln 3, Col 1 Arduino Uno on COM8 2

sketch_jul16a.ino

```
void setup() {
  // put your setup code here, to run once:

}

void loop() {
  // put your main code here, to run repeatedly:

}

```

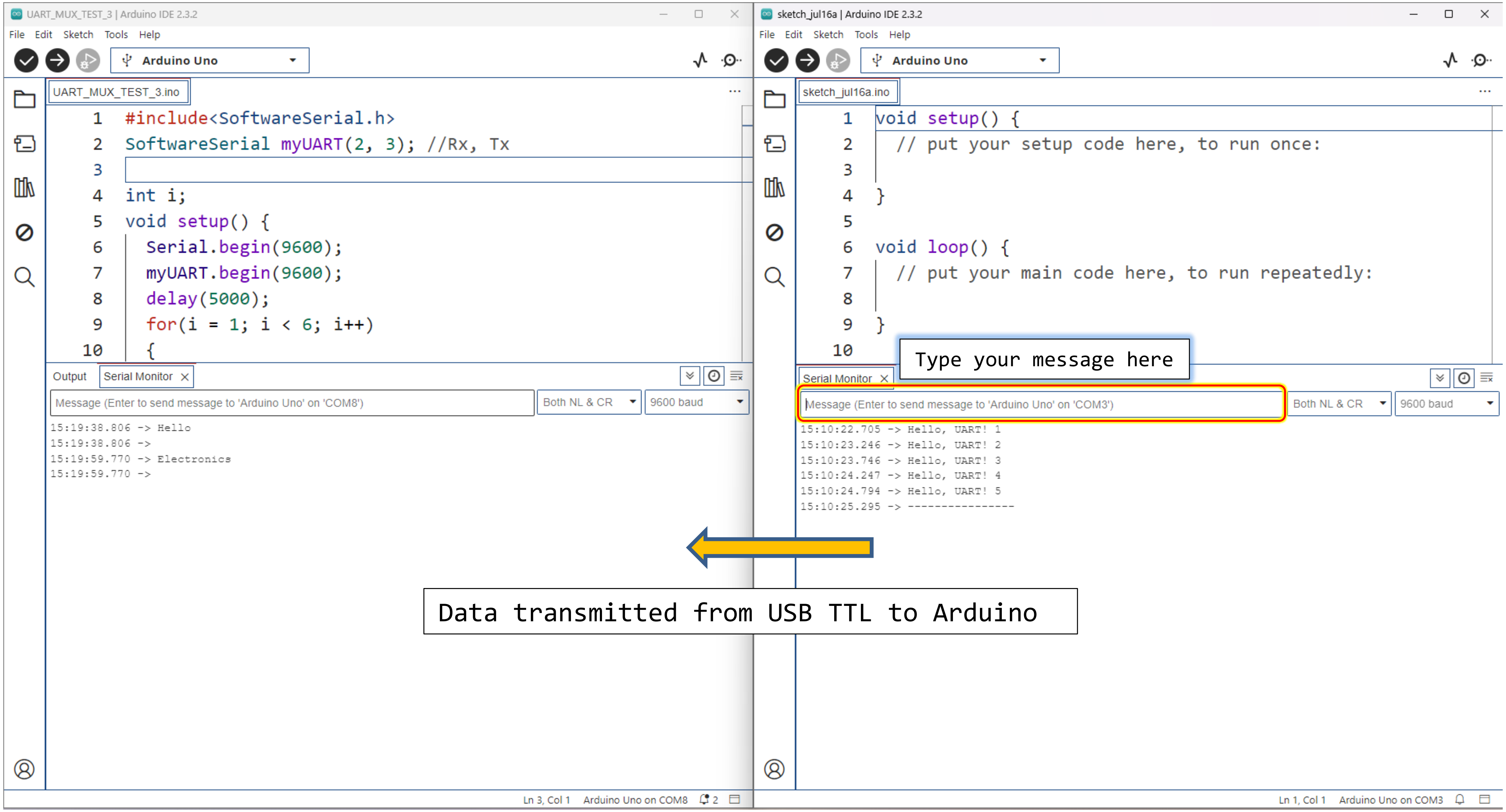
Message (Enter to send message to 'Arduino Uno' on 'COM3')
Both NL & CR
9600 baud

```
15:10:22.705 -> Hello, UART! 1
15:10:23.246 -> Hello, UART! 2
15:10:23.746 -> Hello, UART! 3
15:10:24.247 -> Hello, UART! 4
15:10:24.794 -> Hello, UART! 5
15:10:25.295 -> ----------------
```

Ln 1, Col 1 Arduino Uno on COM3

Data transmitted from Arduino to USB TTL

STEP-3:- Data transmitting from USB TTL to Arduino board. Press enter after typing your message.


UART_MUX_TEST_3 | Arduino IDE 2.3.2
File Edit Sketch Tools Help
Arduino Uno
UART_MUX_TEST_3.ino
Output
Serial Monitor
Ln 3, Col 1 Arduino Uno on COM8 2
sketch_jul16a | Arduino IDE 2.3.2
File Edit Sketch Tools Help
Arduino Uno
sketch_jul16a.ino
Serial Monitor
Ln 1, Col 1 Arduino Uno on COM3

```
#include<SoftwareSerial.h>
SoftwareSerial myUART(2, 3); //Rx, Tx

int i;
void setup() {
  Serial.begin(9600);
  myUART.begin(9600);
  delay(5000);
  for(i = 1; i < 6; i++)
  {
```

Message (Enter to send message to 'Arduino Uno' on 'COM8') | Both NL & CR | 9600 baud

```
15:19:38.806 -> Hello
15:19:38.806 ->
15:19:59.770 -> Electronics
15:19:59.770 ->
```

```
void setup() {
  // put your setup code here, to run once:

}

void loop() {
  // put your main code here, to run repeatedly:

}
```

Type your message here

Message (Enter to send message to 'Arduino Uno' on 'COM3') | Both NL & CR | 9600 baud

```
15:10:22.705 -> Hello, UART! 1
15:10:23.246 -> Hello, UART! 2
15:10:23.746 -> Hello, UART! 3
15:10:24.247 -> Hello, UART! 4
15:10:24.794 -> Hello, UART! 5
15:10:25.295 -> ---------------
```

Data transmitted from USB TTL to Arduino