

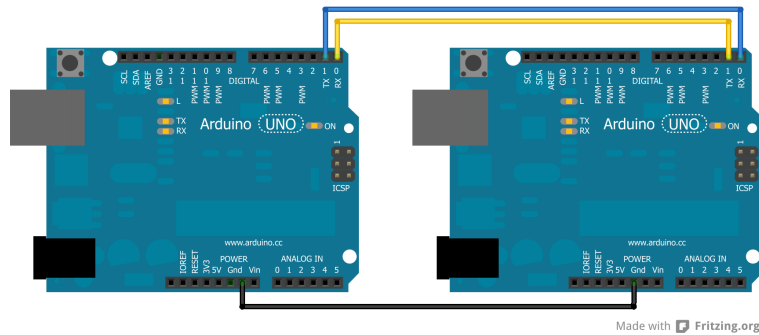
# Lab #2

## USART

### (w/o printf and UART Setup)

Board to Board ver 1.00

This week, you will connect two Arduino's together (you and another student), in the following fashion:



You will add 3 switches connected to PC0-2 and 3 led's connected to PB0-2 (not shown above) and do the following:

Input Switch setting (decimal representation)	Transmit character
0	A
1	B
2	C
3	D
4	E
5	F
6	G
7	H

Received character	LED's showing binary equivalent of decimal number
A	7
B	6
C	5
D	4
E	3
F	2
G	1
H	0

The Usart should be programmed manually (do NOT use printf / USART setup when creating the project). In your code, set up the USART for 9600 baud, 1 stop bit, no parity, 8 data bits.

Refer to Chapter 11 in your textbook and/or [ATmega328P Datasheet](#) Chapter 20 (USART0) for information on registers needed for this program.

It is suggested that you look at example 11-13 in your textbook for ideas on how to setup and use the Usart.

Behavior: A character should only be transmitted when the dip switch input changes. The LED's should only change when a character is received.

Note on behavior: Since we are using dip switches, it is most likely you will see the effects of switch bounce (See last semester Apr 4ths class notes) during this experiment. It is expected and acceptable to get more than one character when flipping a switch.

You can use putty for testing (send a A-H) and see what character is printing while changing dip switches.

For full credit: submit commented code and demo to instructor.