

LAB-1 REPORT

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Aim: Study of Digital ICs and basic components like power supply, DSO etc.

Summary of the experiment: Study of basic digital ICs and verifying their functionality, learning the usage of function generator (FG) and digital storage oscilloscope (DSO), and rigging up of circuits.

Components used: IC 7400, 7408, 7432, 7486, 1Kohm resistor array, DIP switches, LED displays, breadboard, power supply.

Design Procedure: Truth table/Excitation table of all logic gates.

NOT

A	X
0	1
1	0

AND

A	B	X
0	0	0
0	1	0
1	0	0
1	1	1

NAND

A	B	X
0	0	0
0	1	1
1	0	0
1	1	1

OR

A	B	X
0	0	0
0	1	1
1	0	1
1	1	1

NOR

A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

XOR

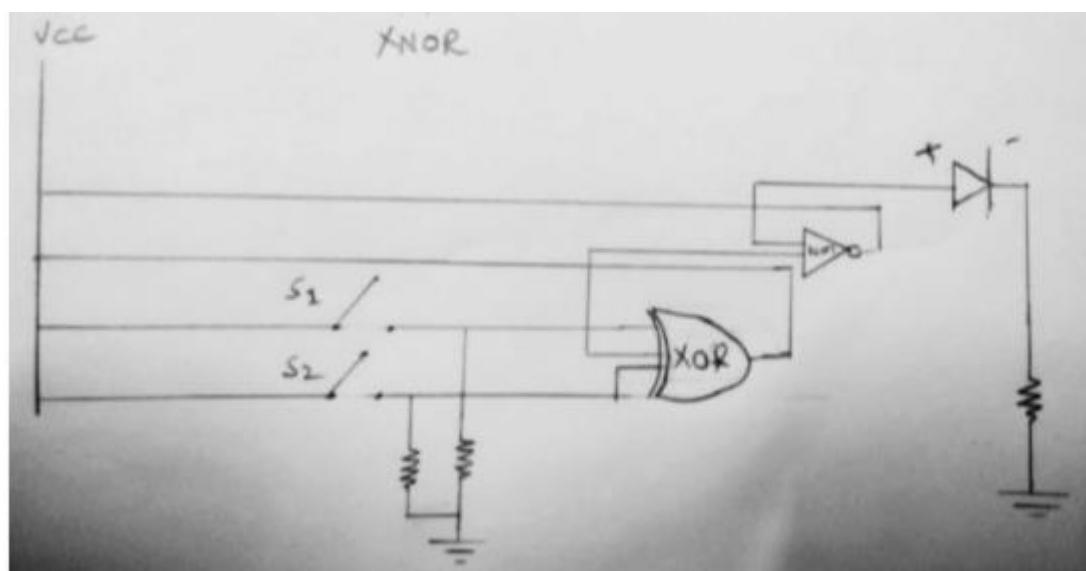
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

XNOR

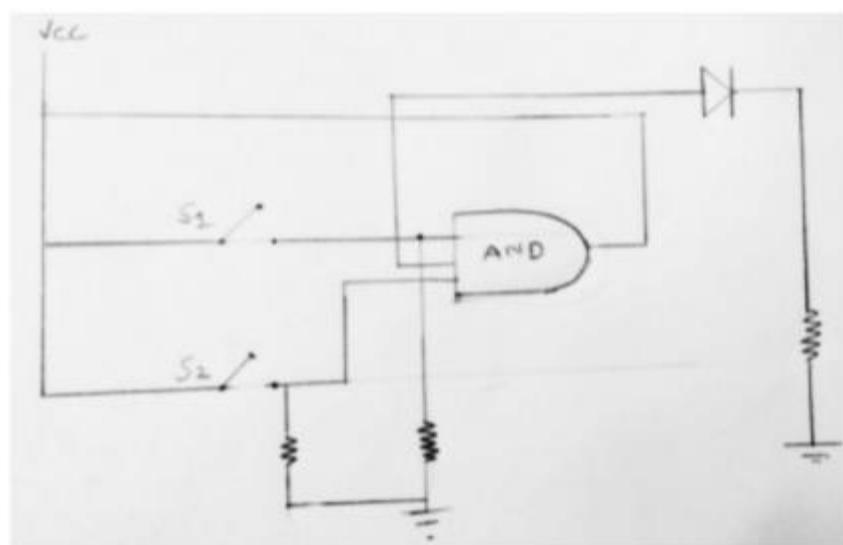
A	B	X
0	0	1
0	1	0
1	0	0
1	1	1

Circuit diagram: Logic circuits of gates.

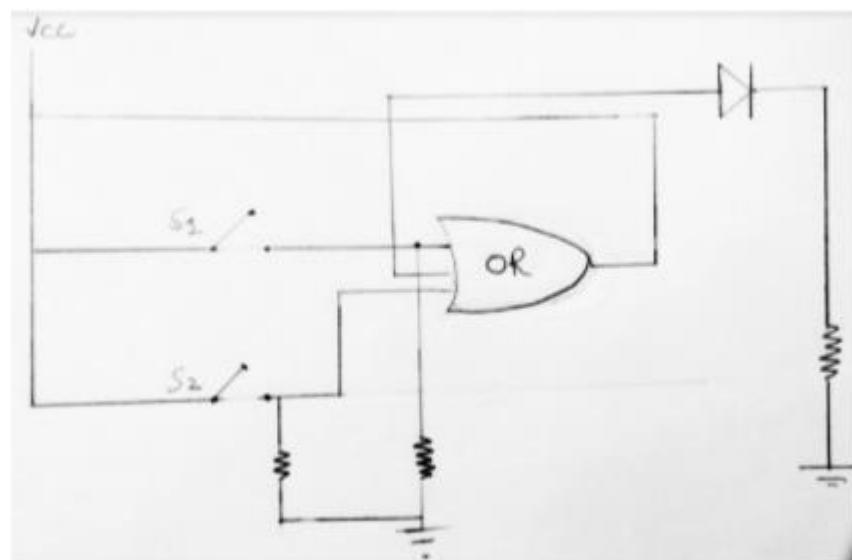
XNOR



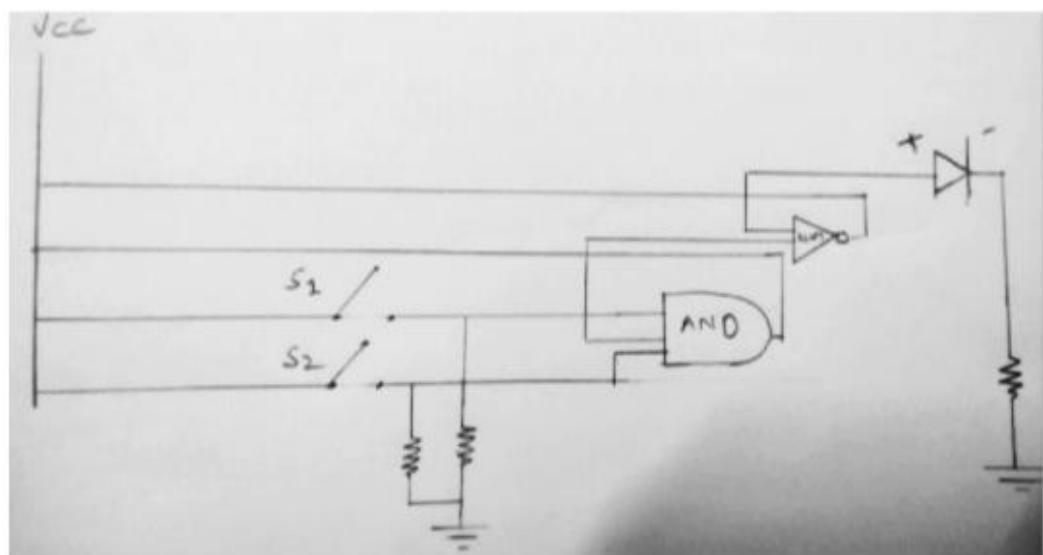
AND



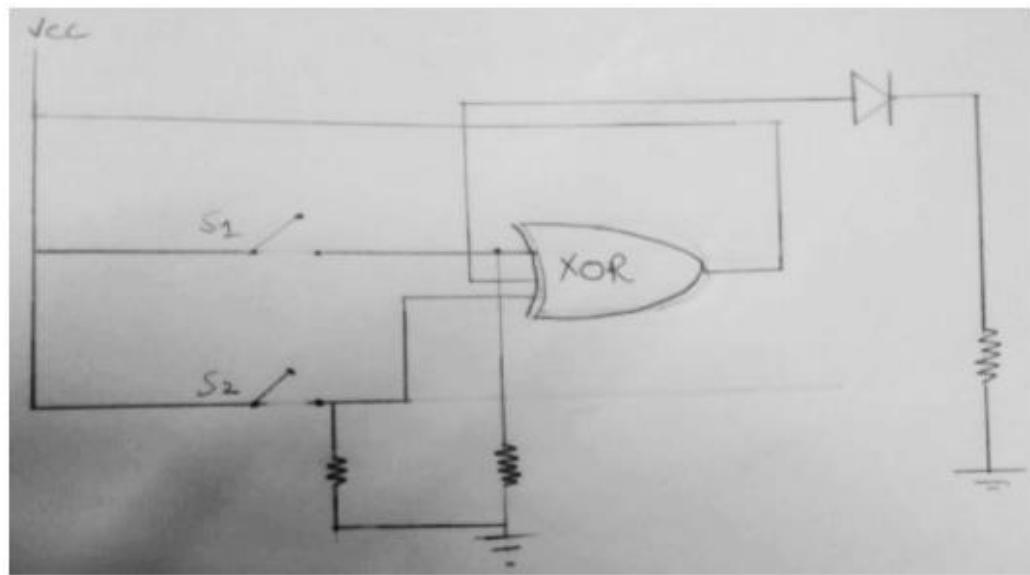
OR



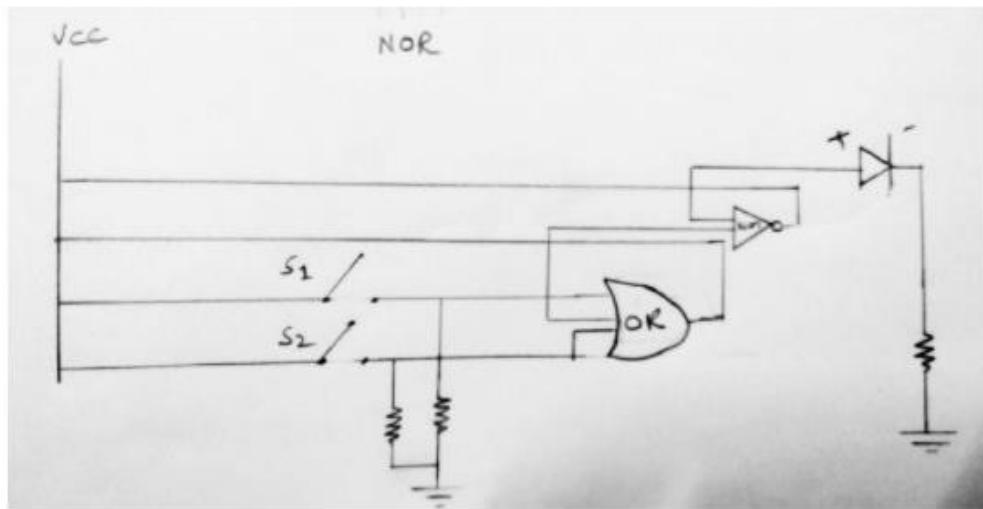
NAND



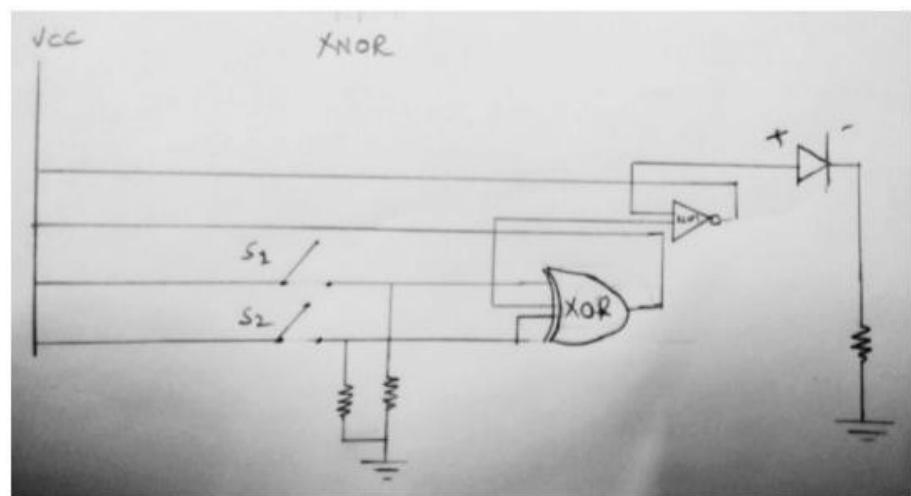
XOR



NOR

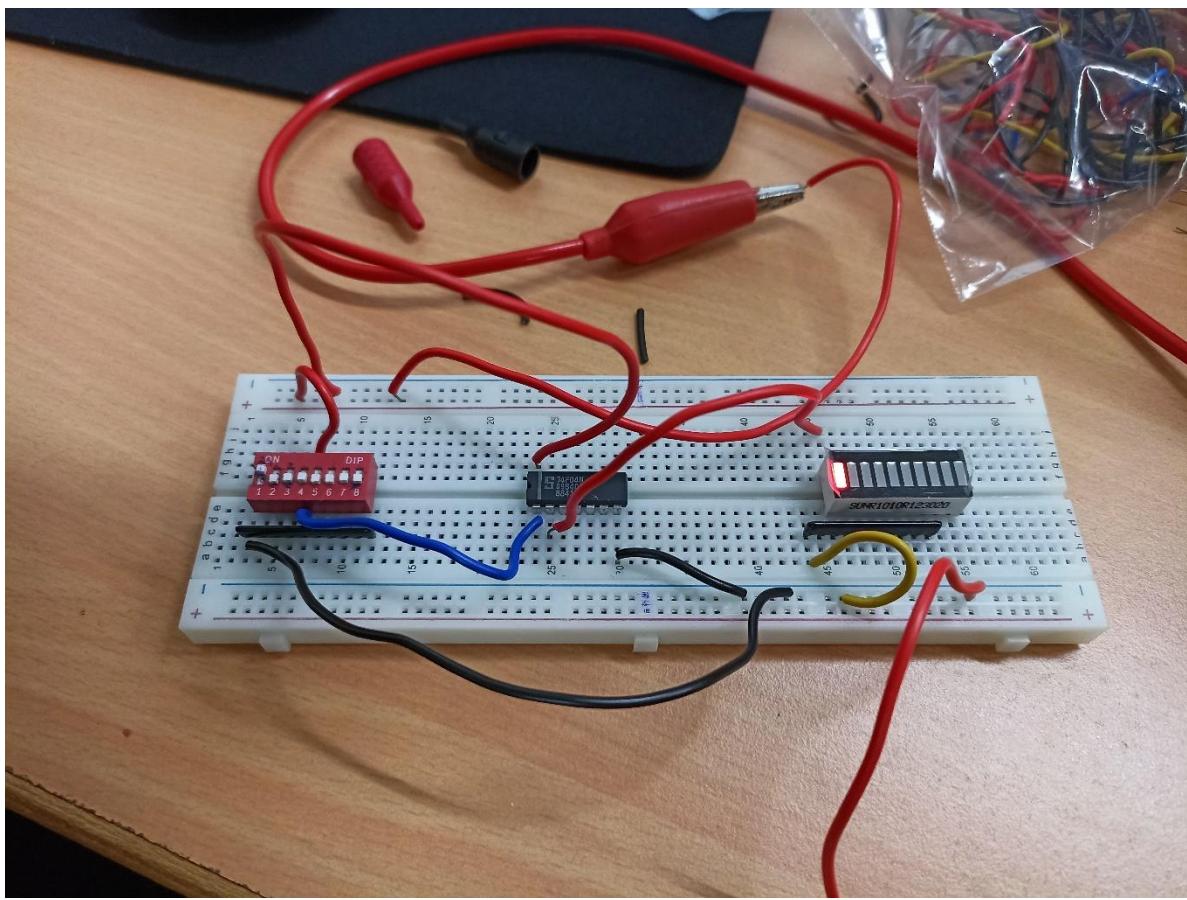


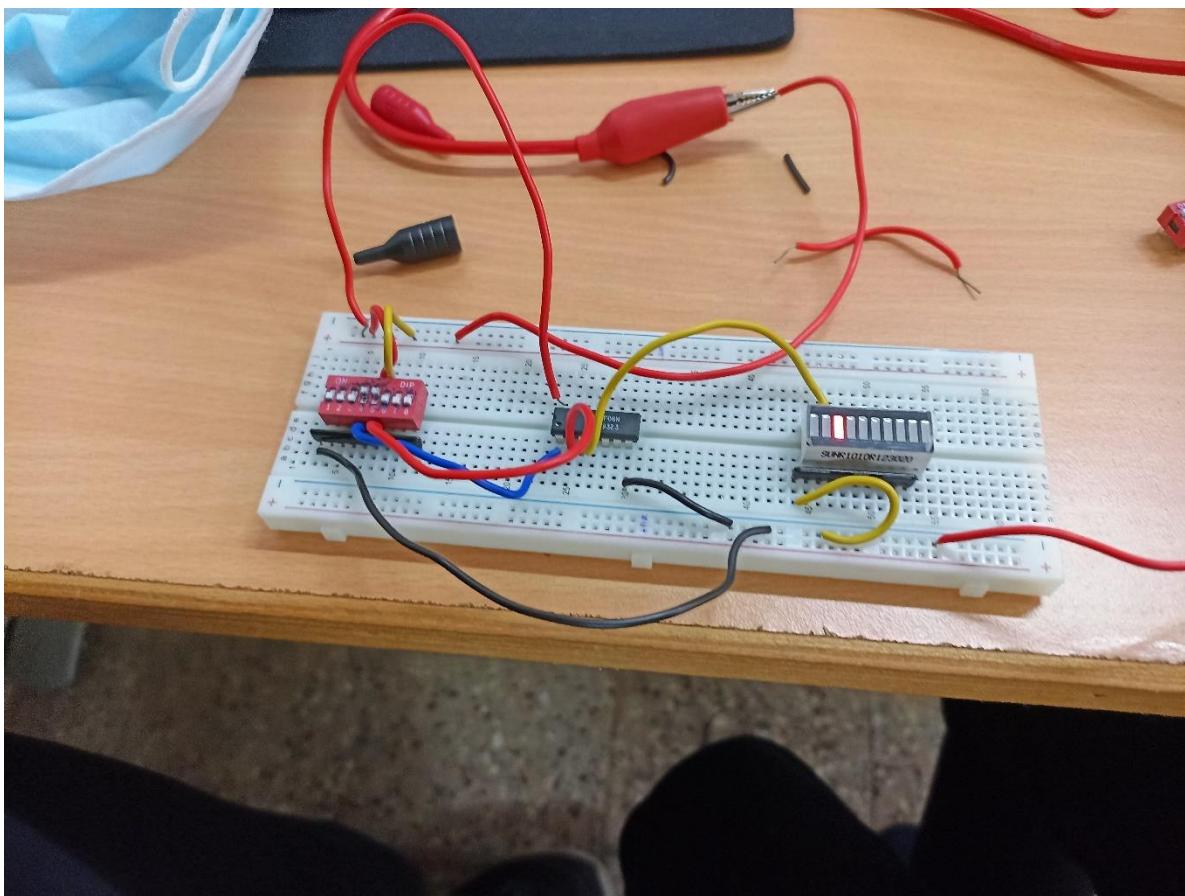
XNOR

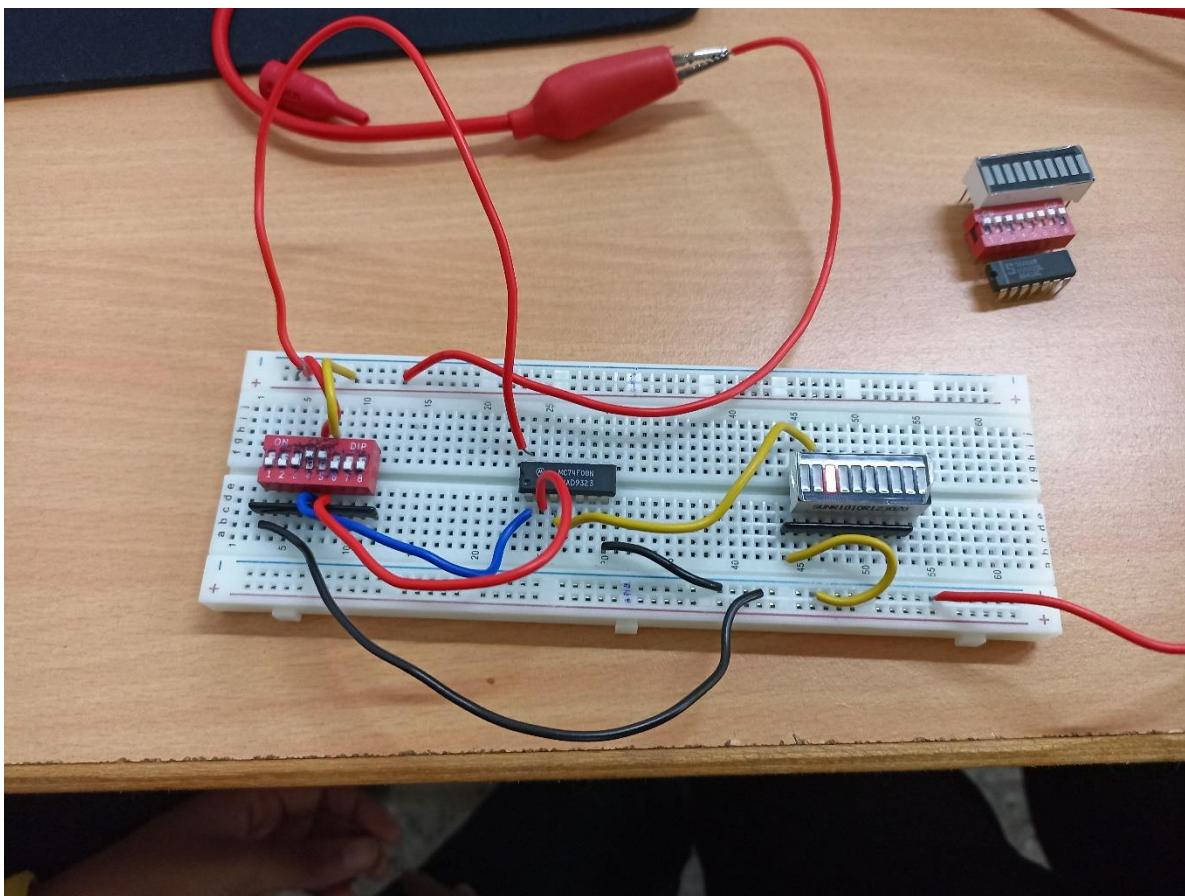


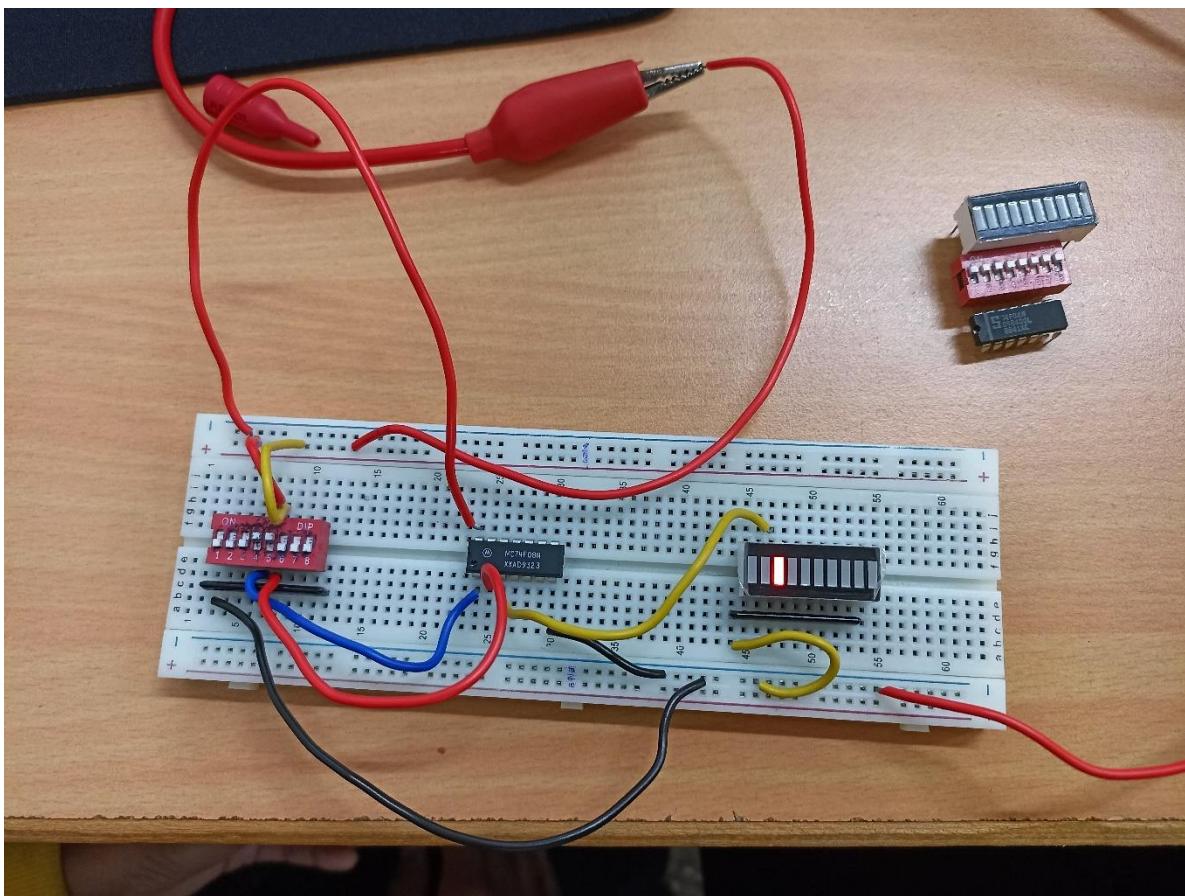
HDL code (for CPLD experiments):

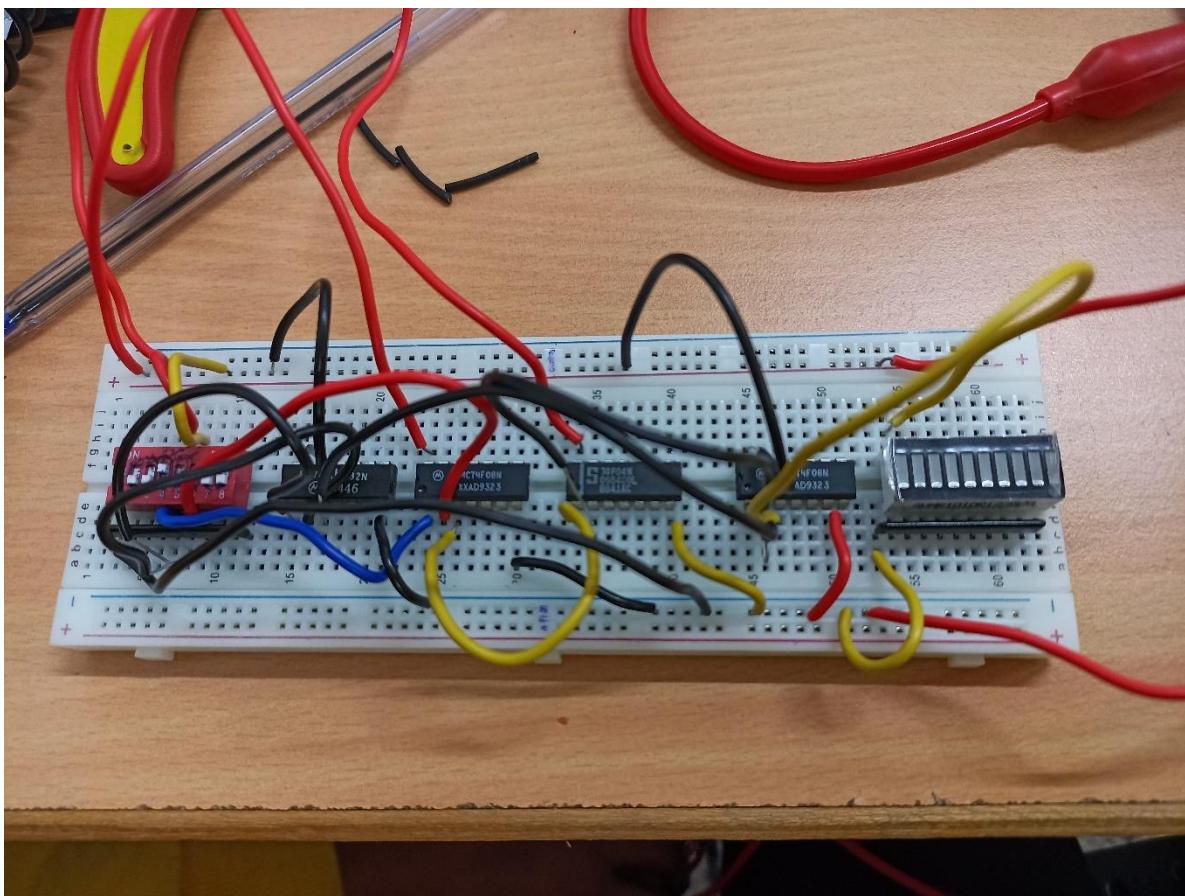
Circuit and Simulation (for CPLD experiments) Snapshots :

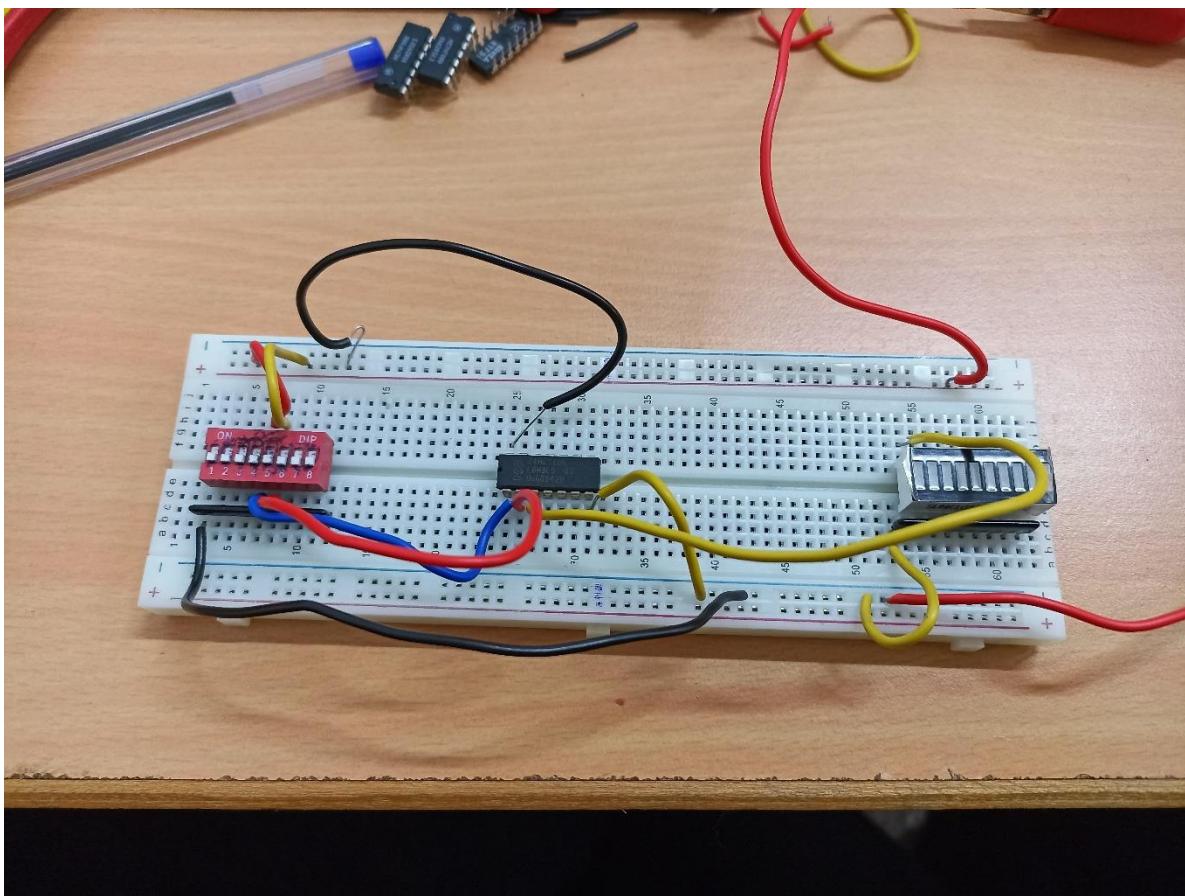


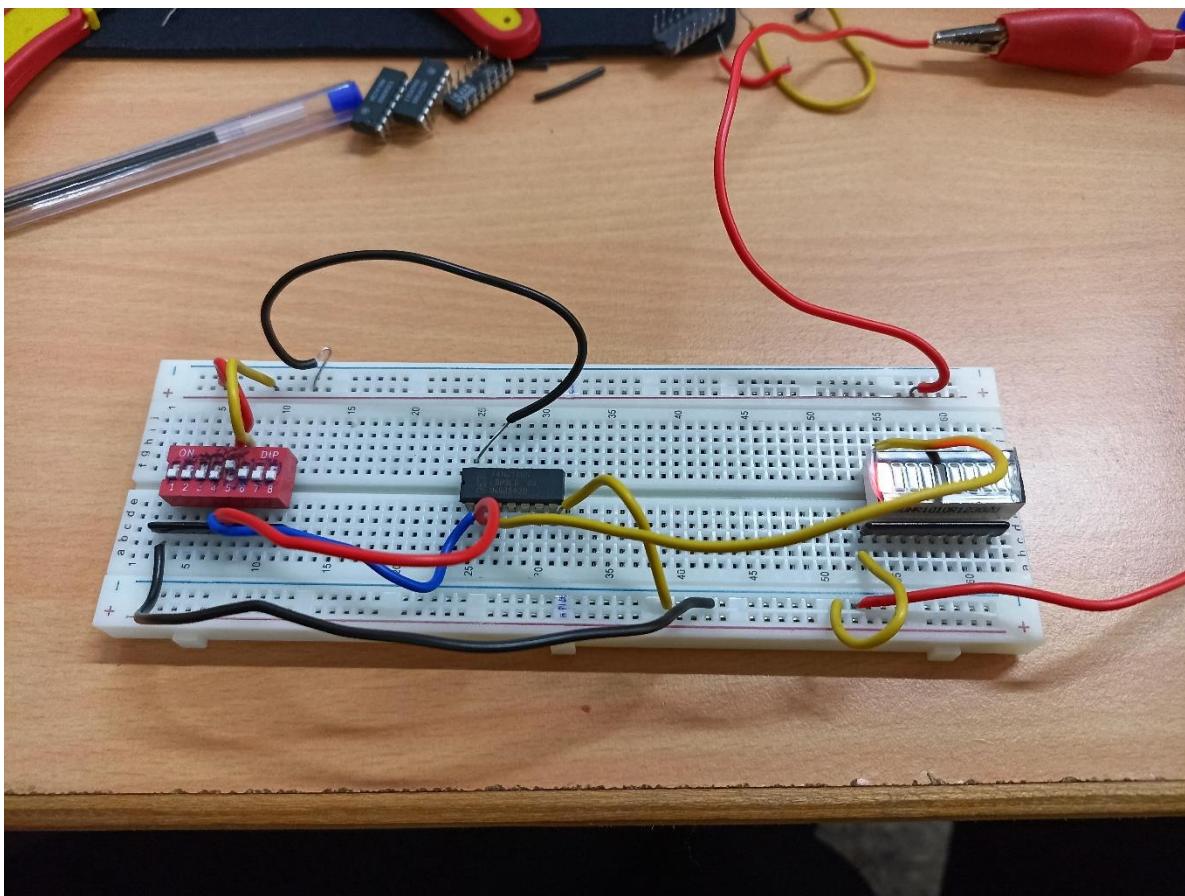


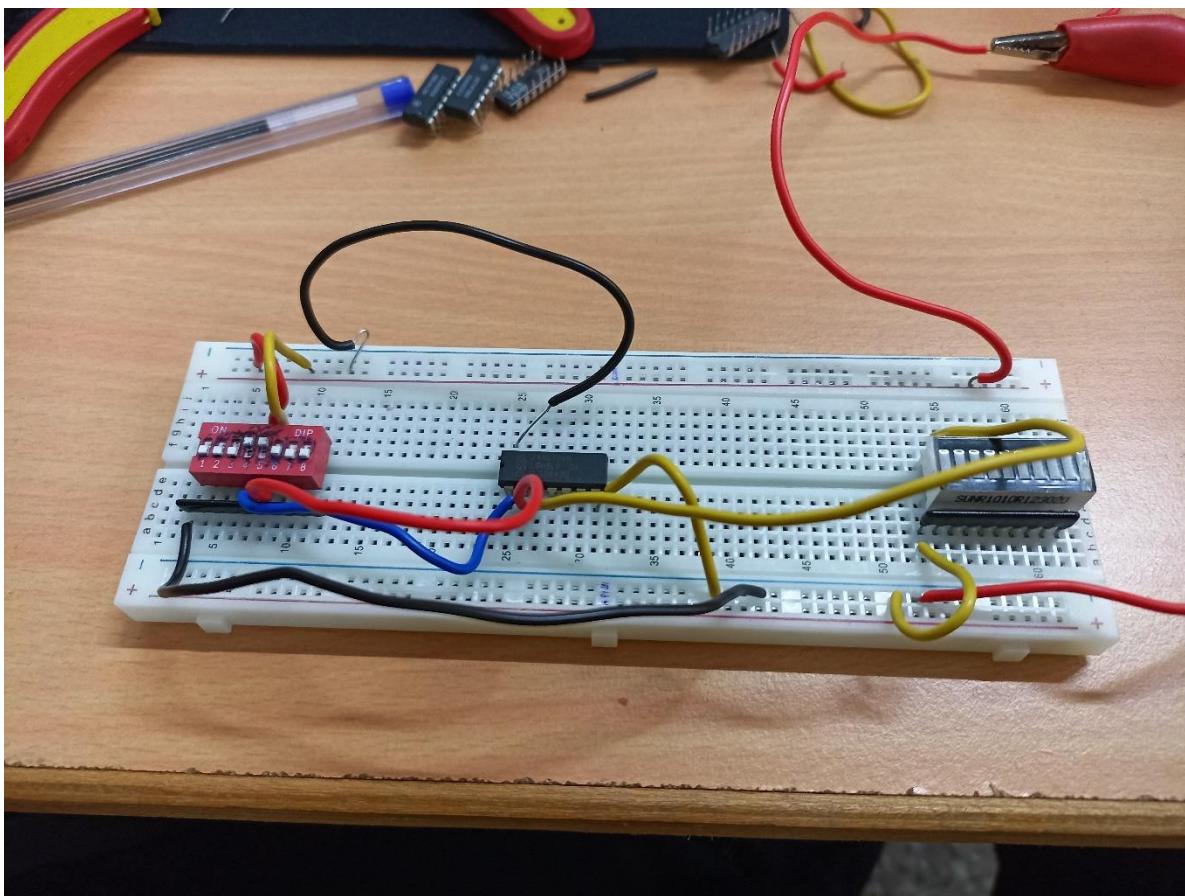


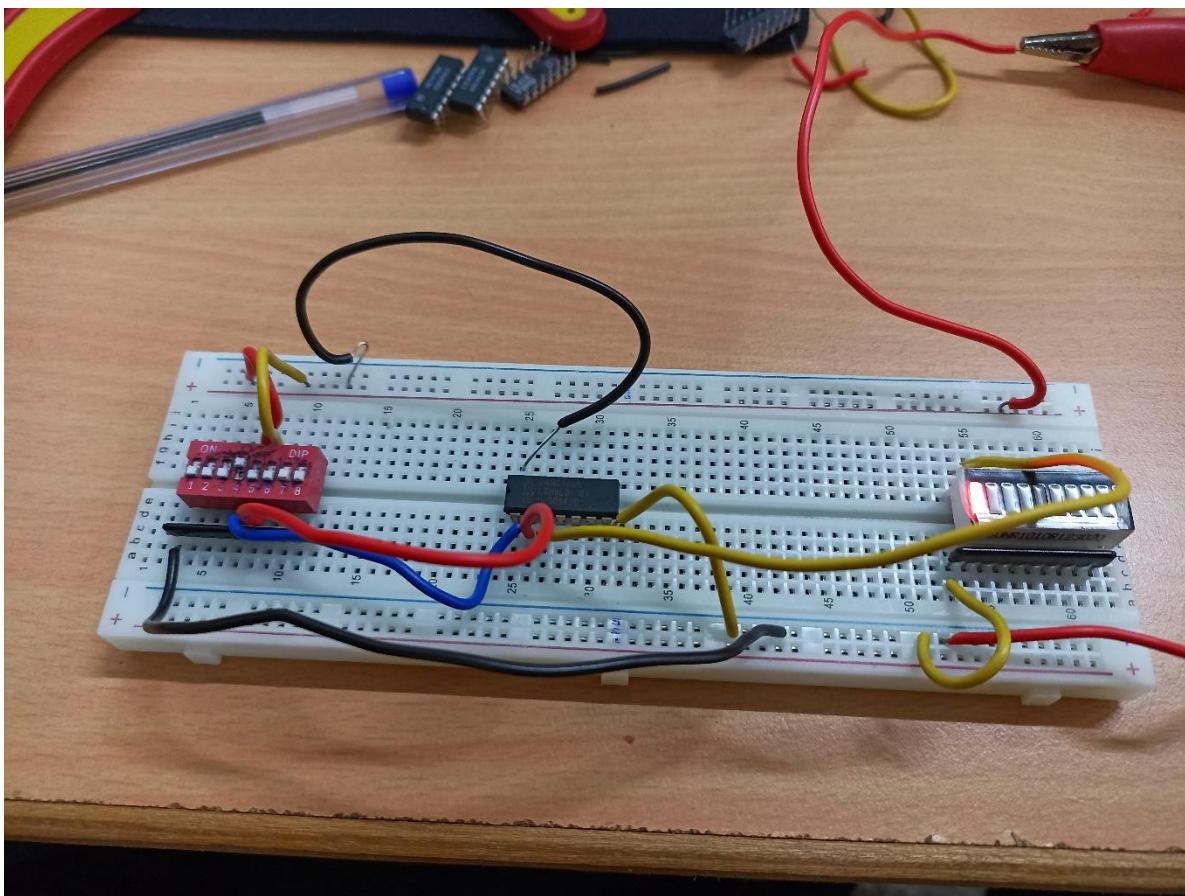


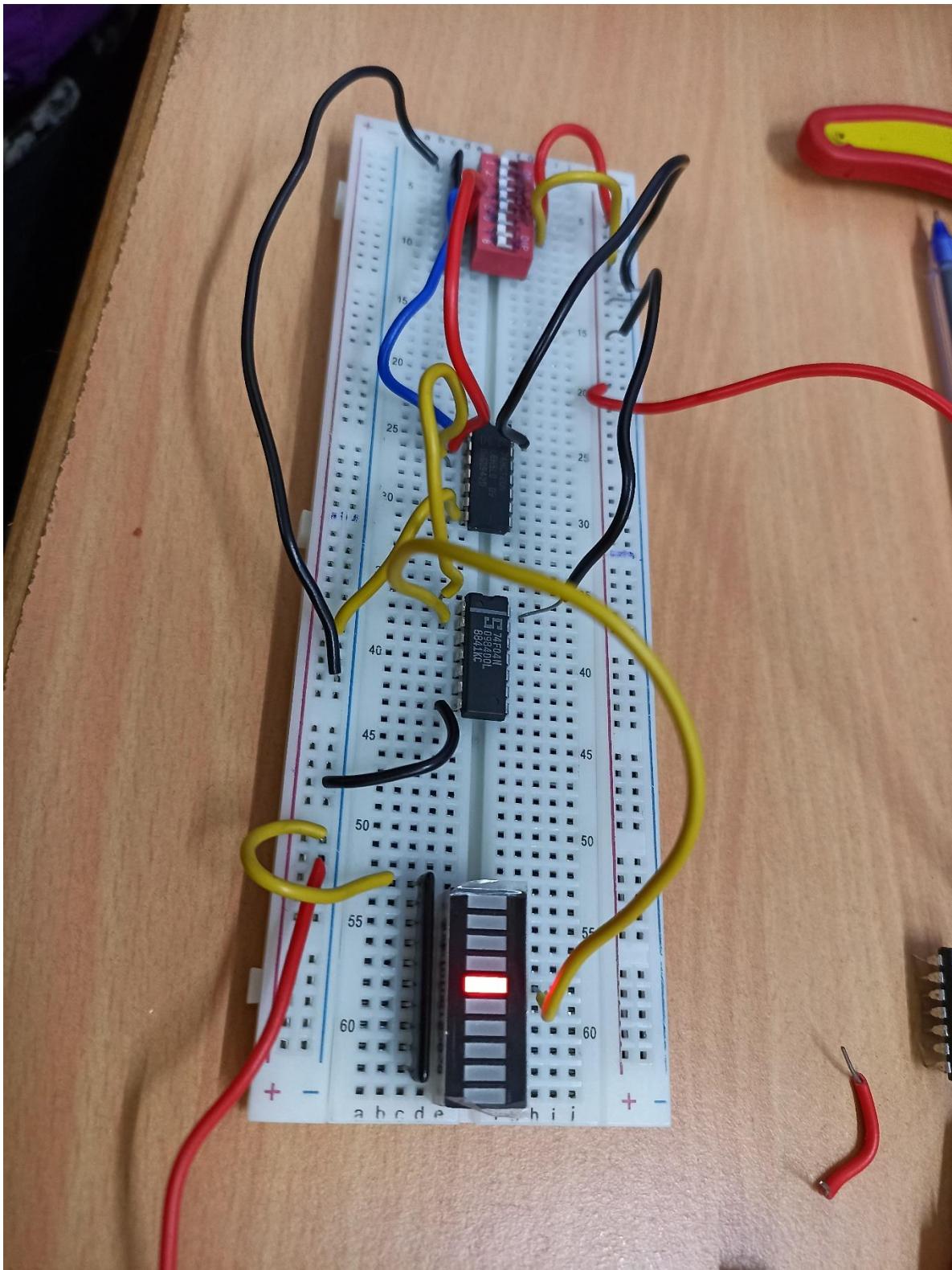


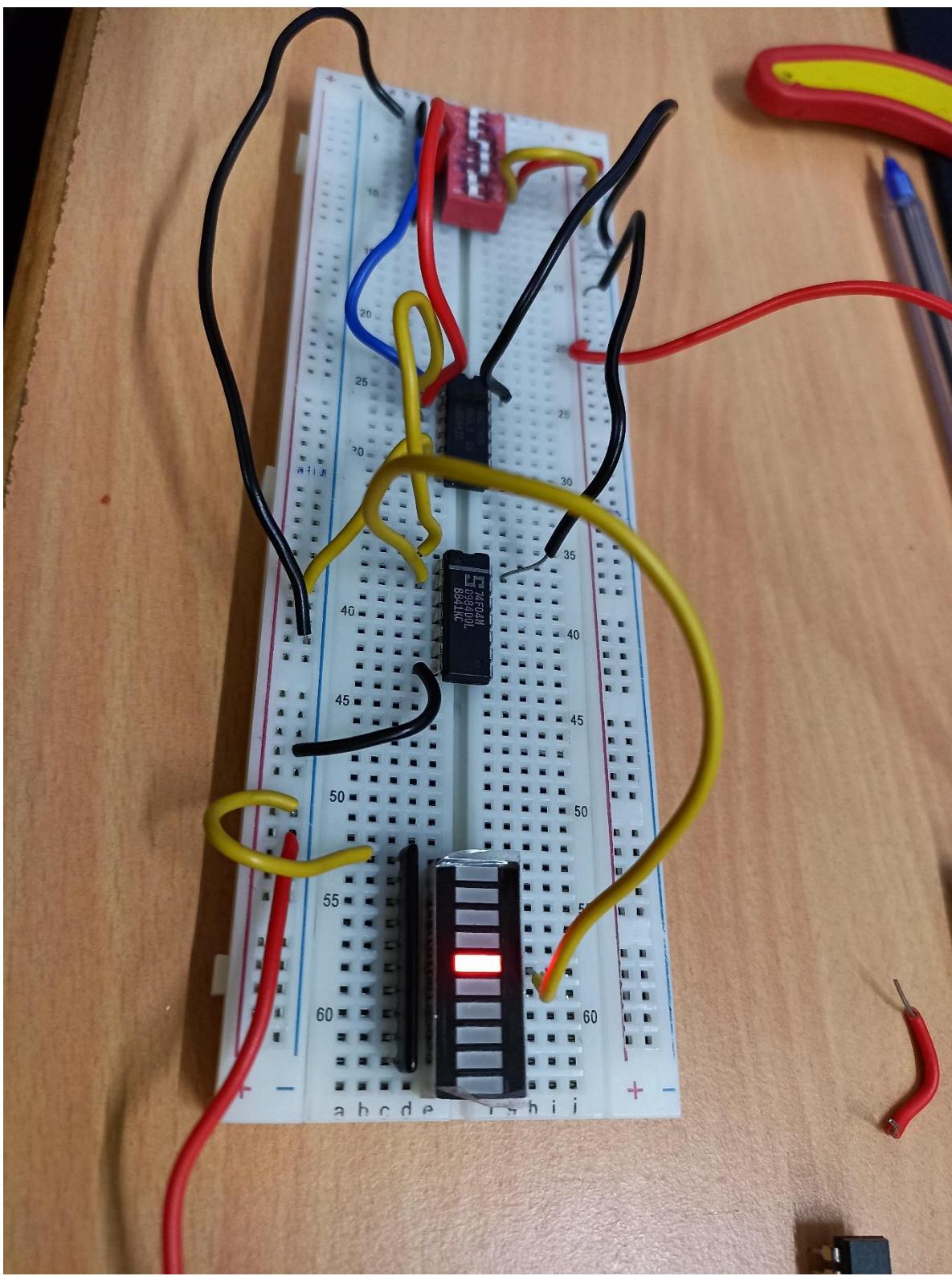


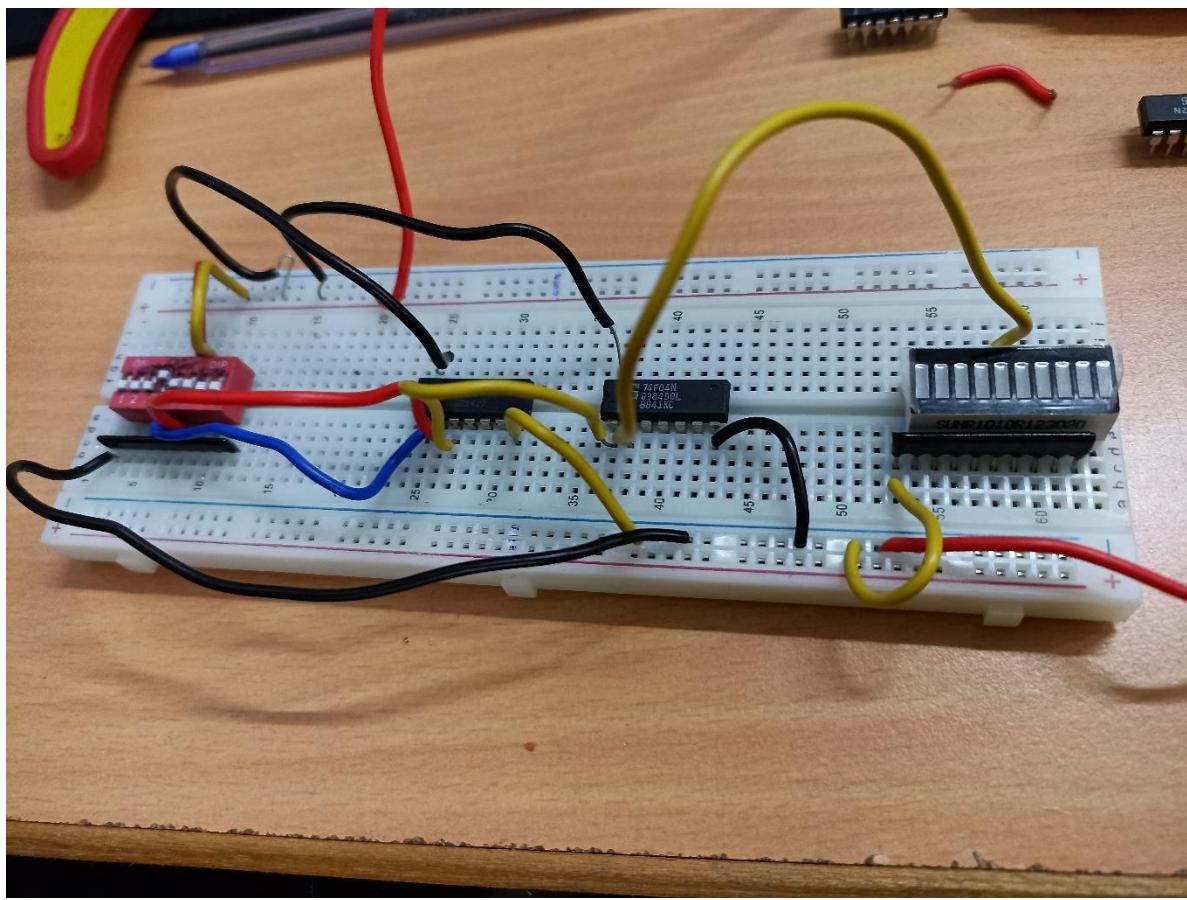


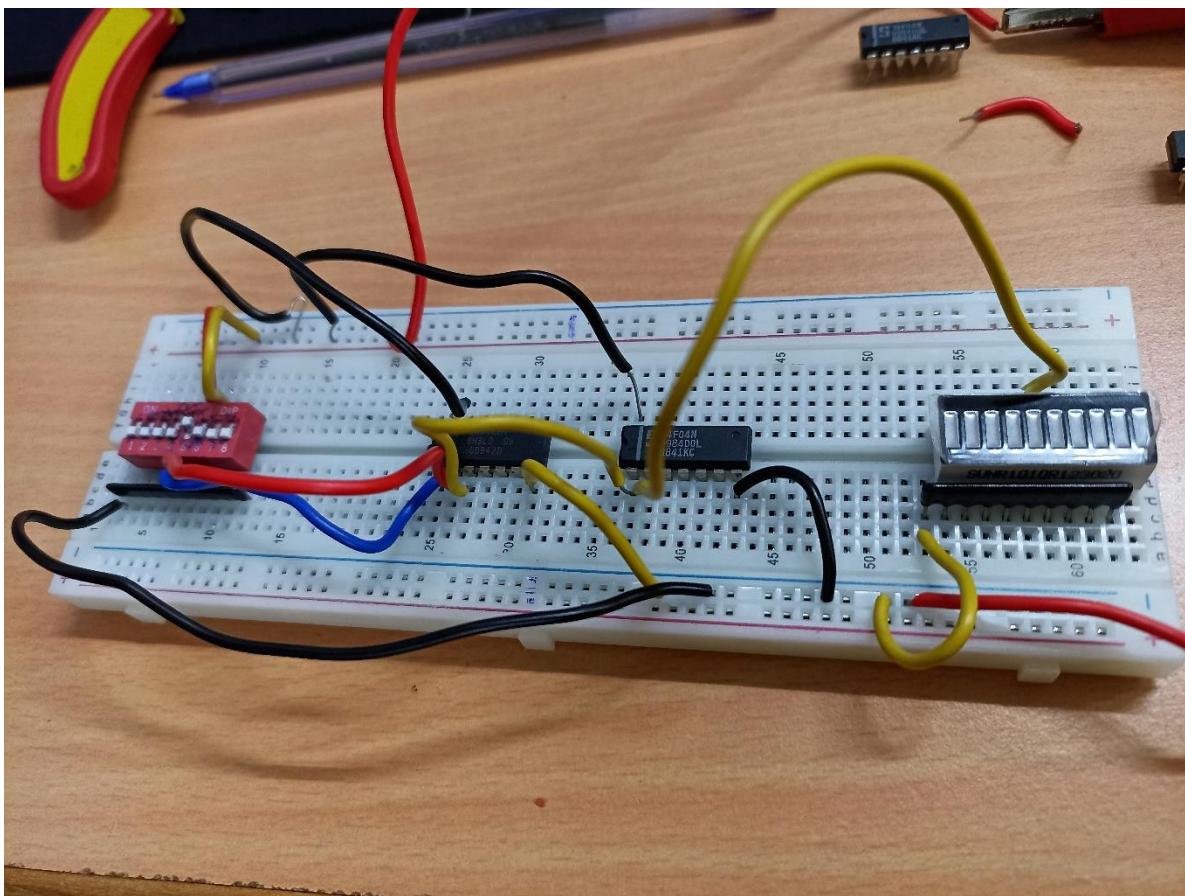


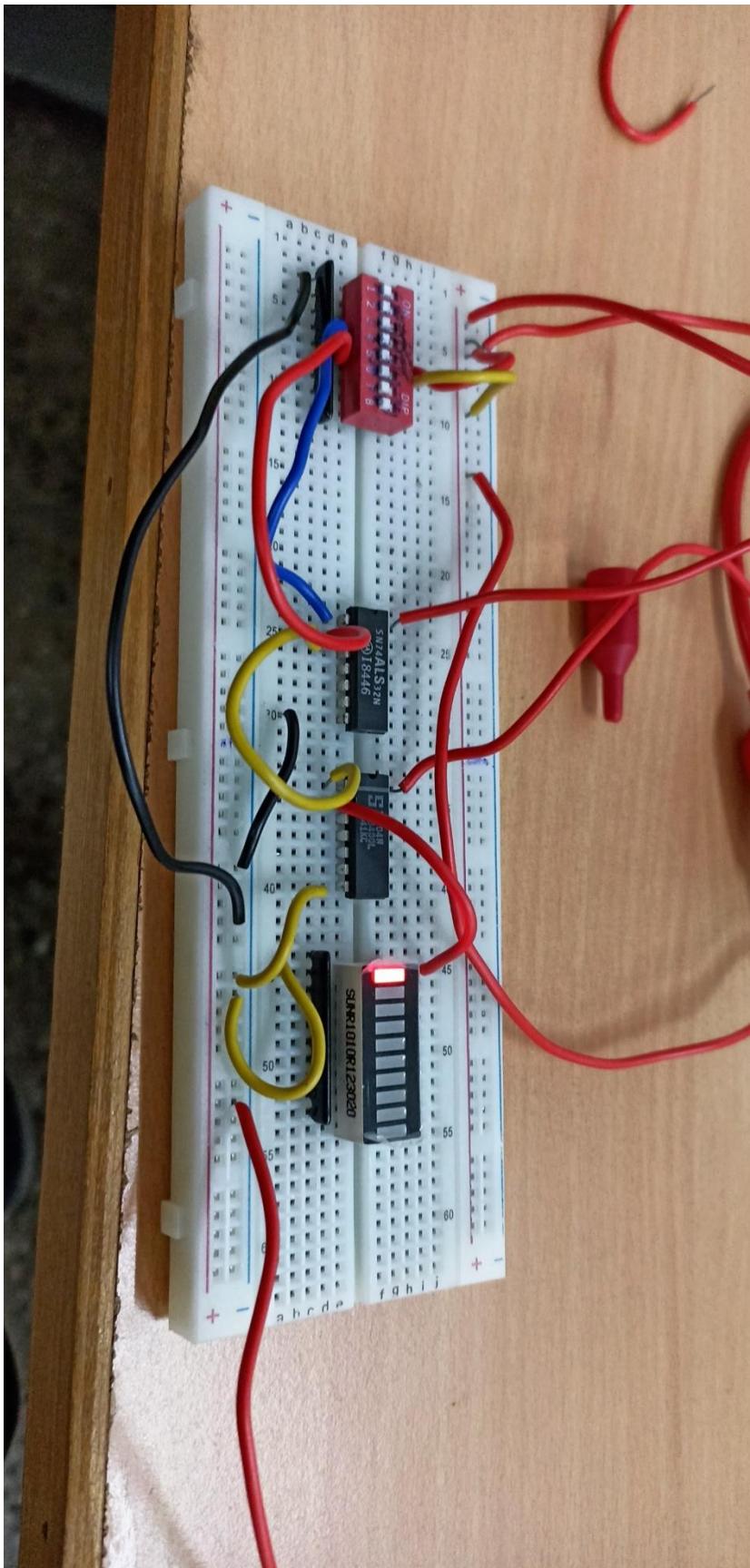


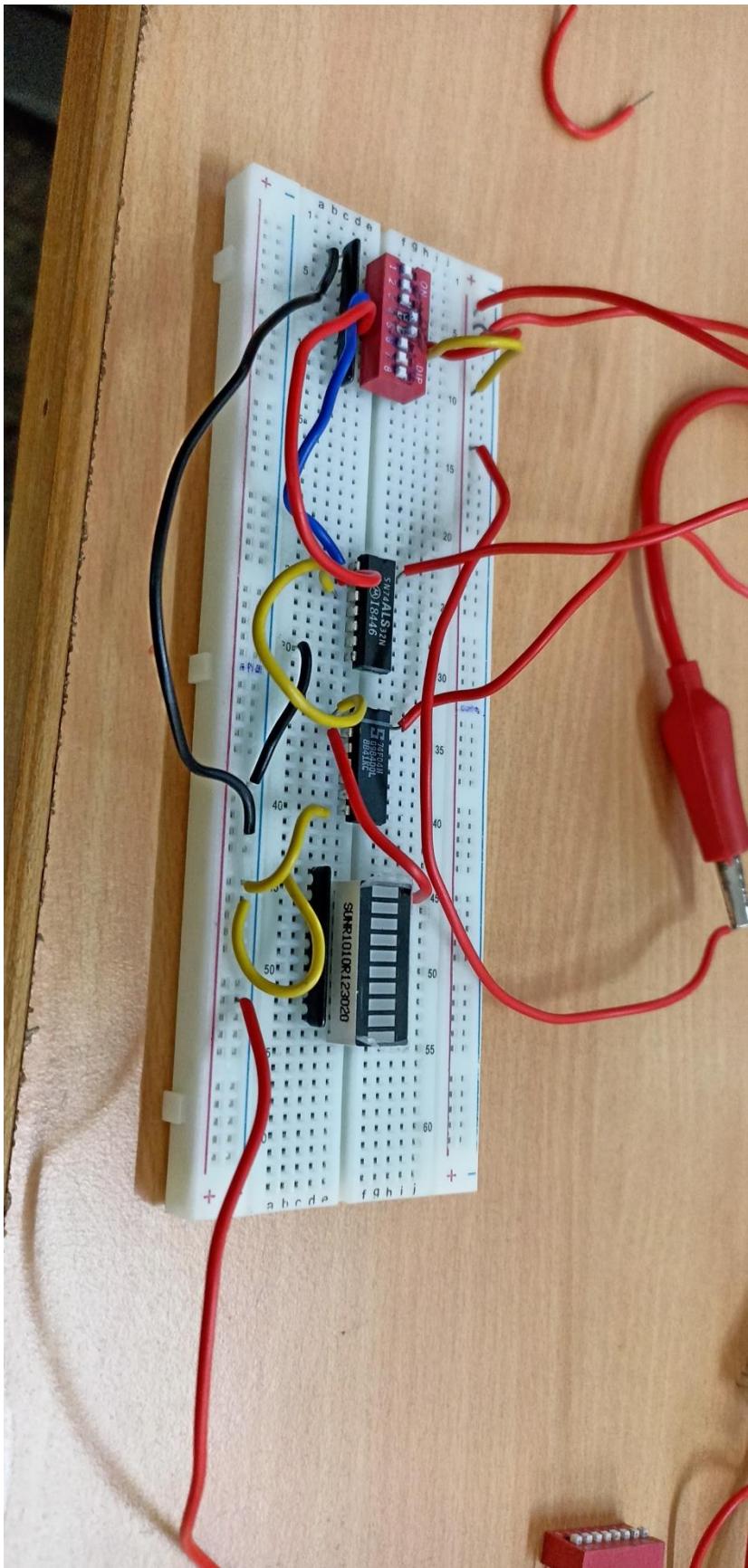


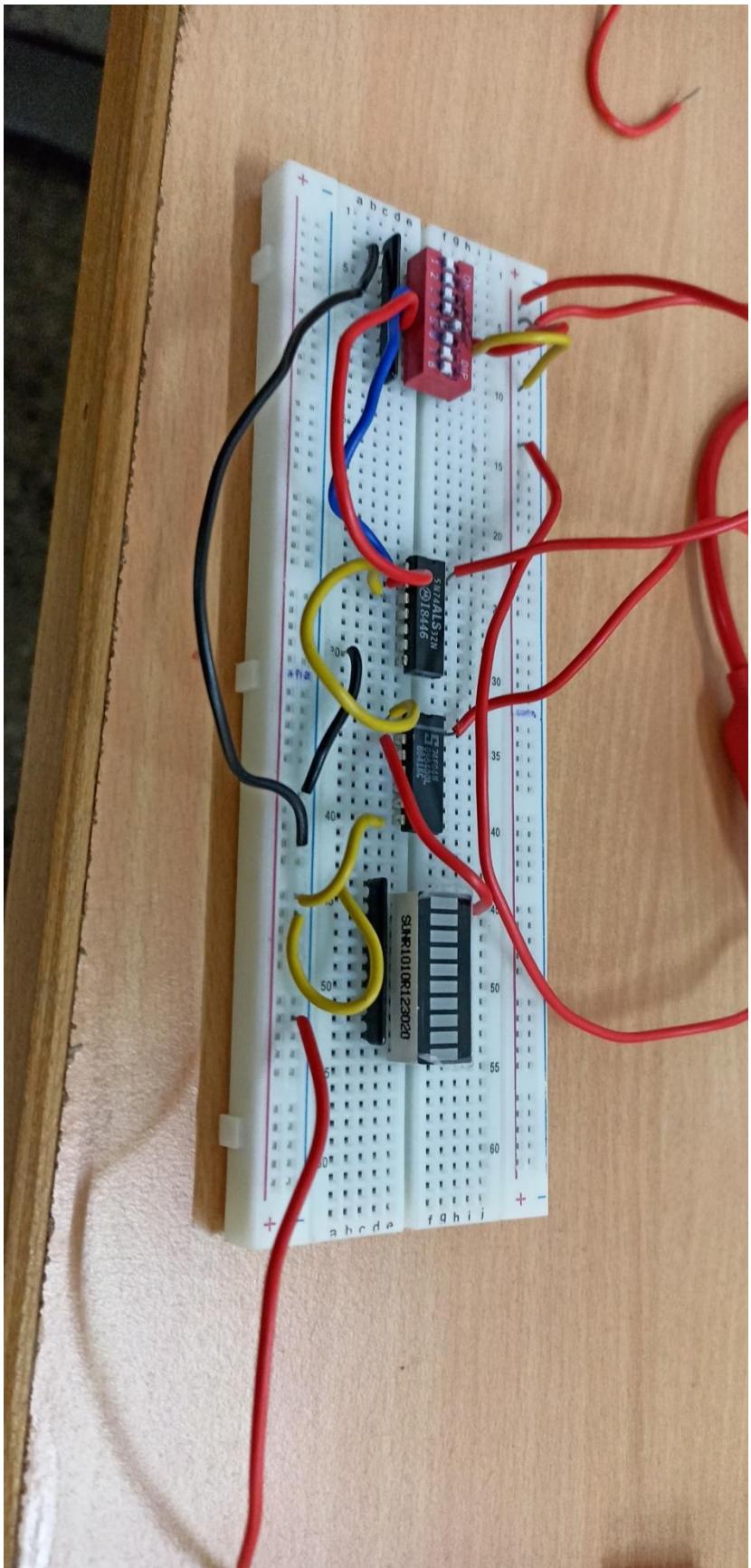


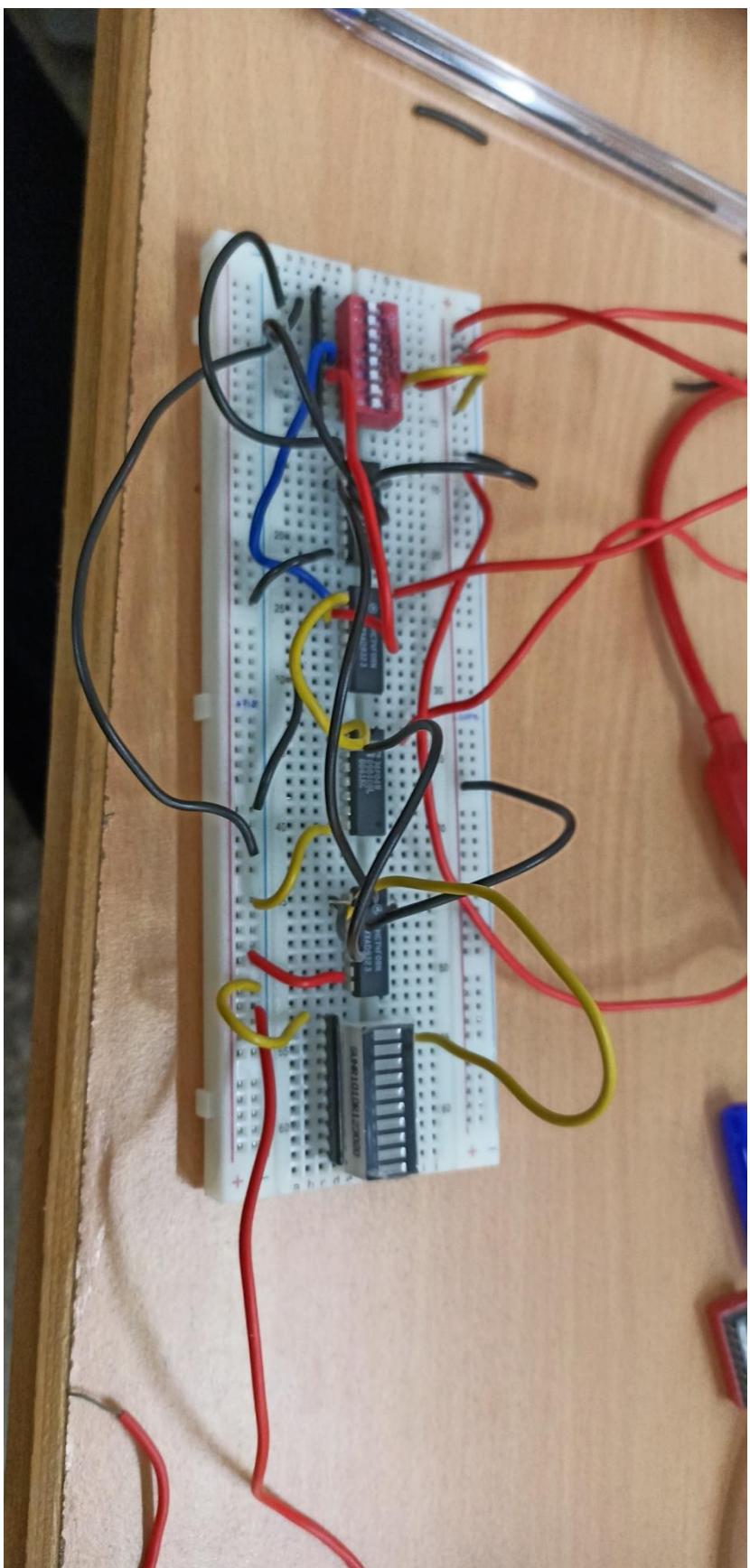


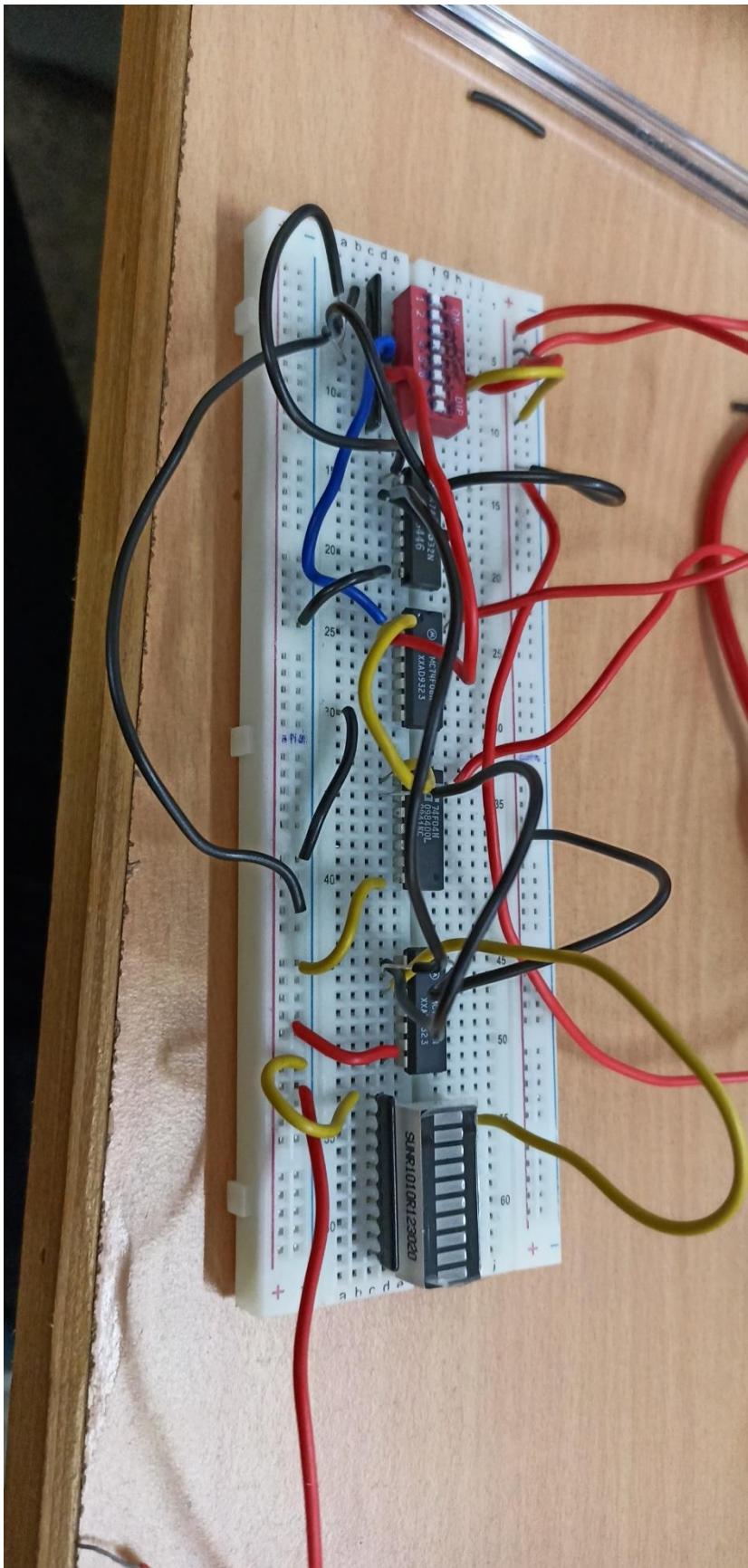


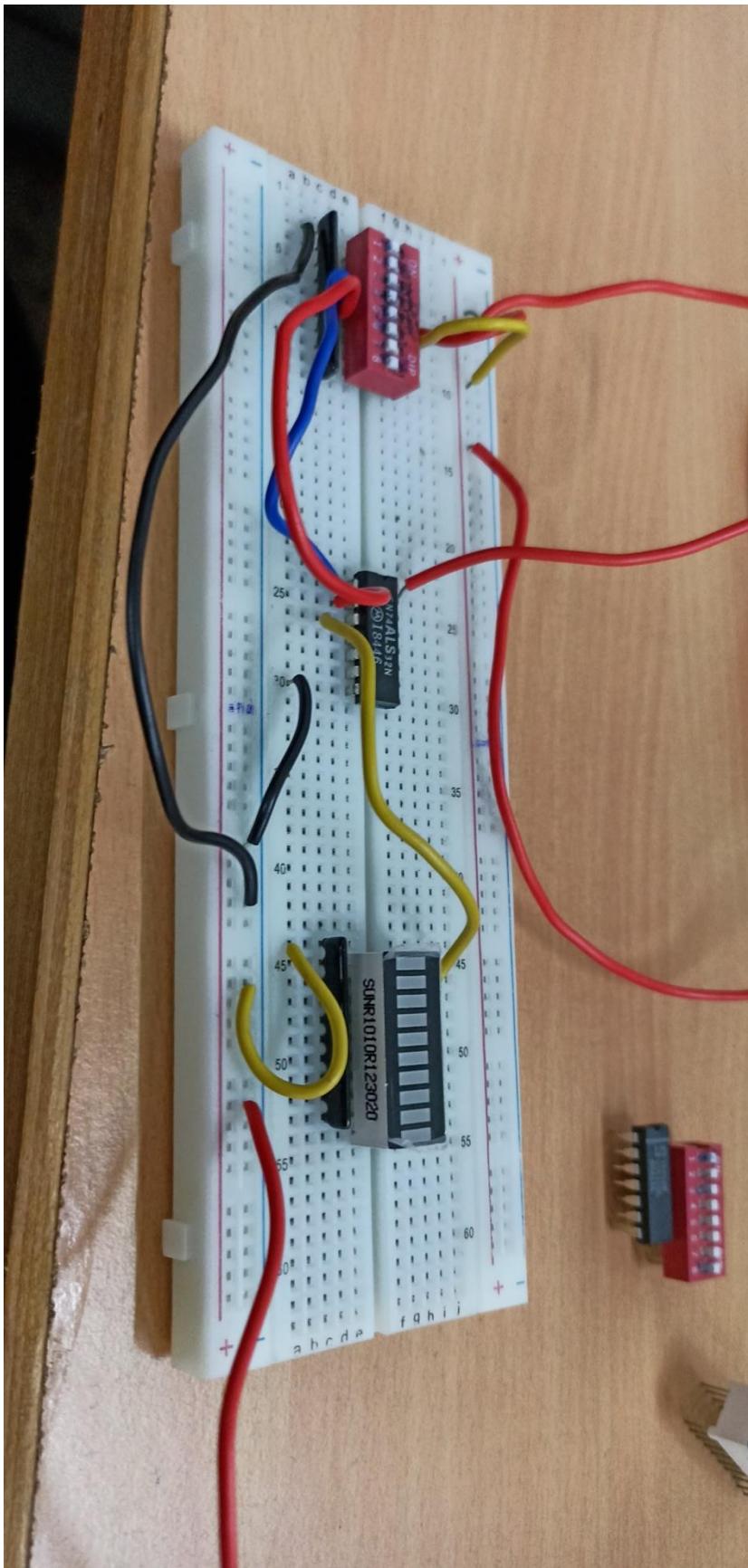


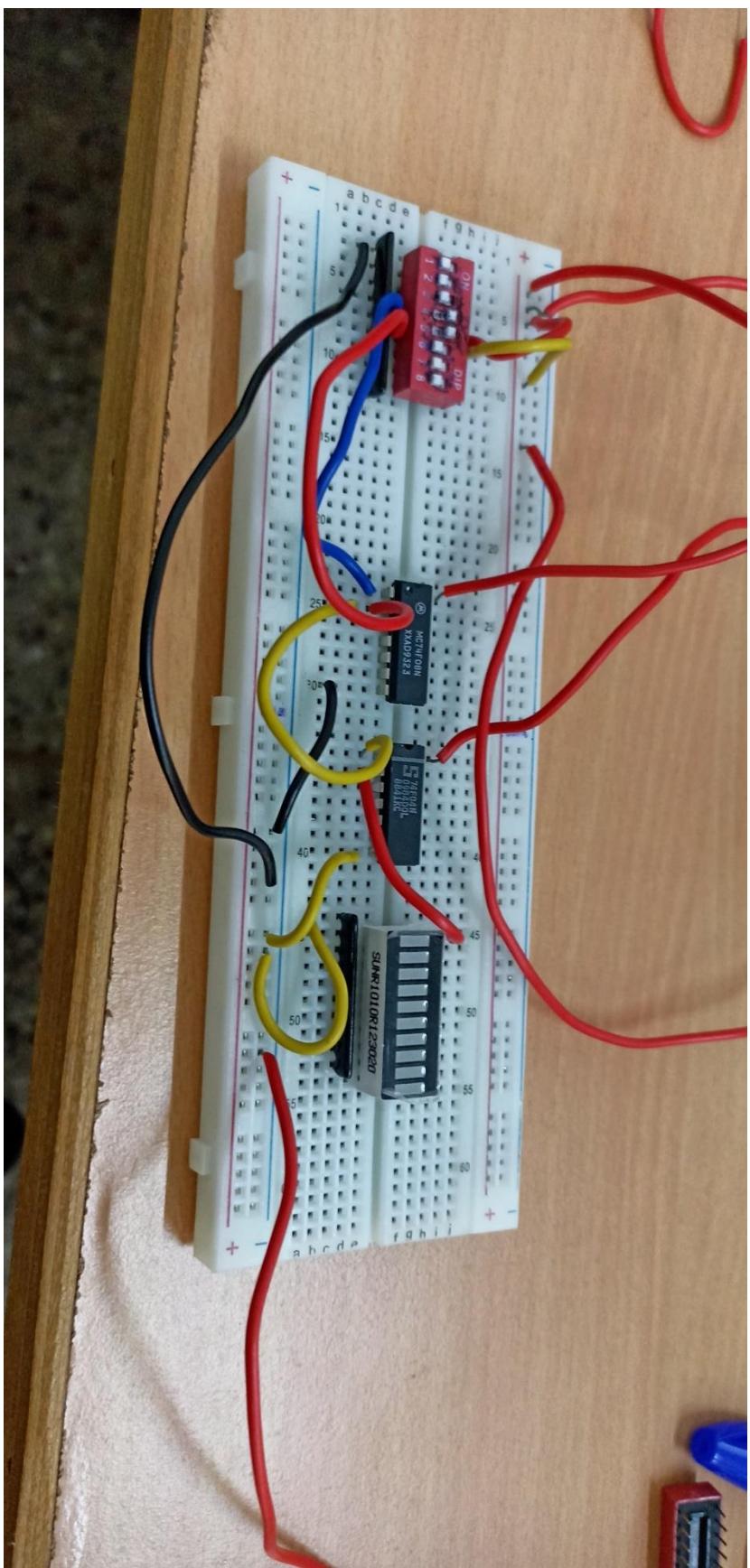


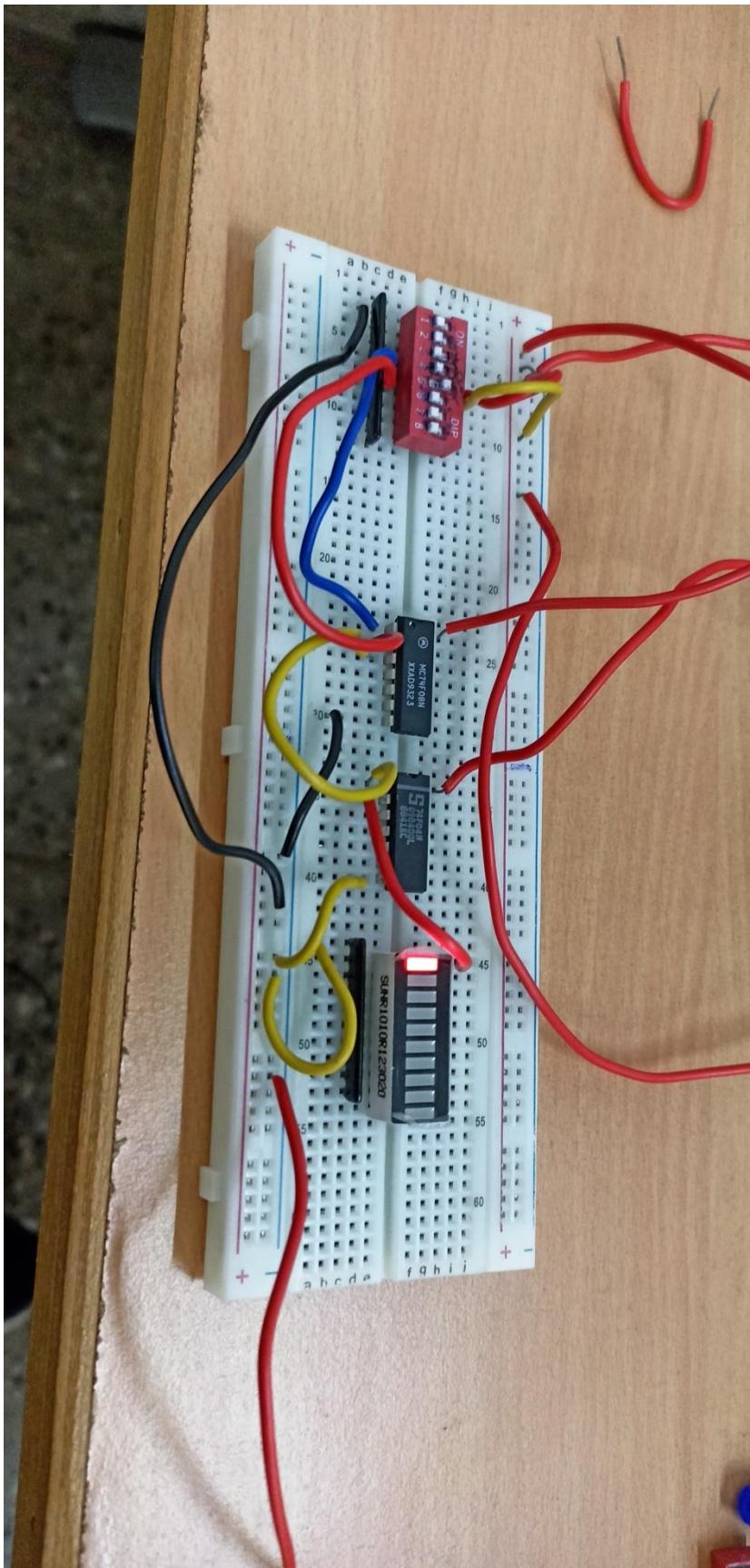


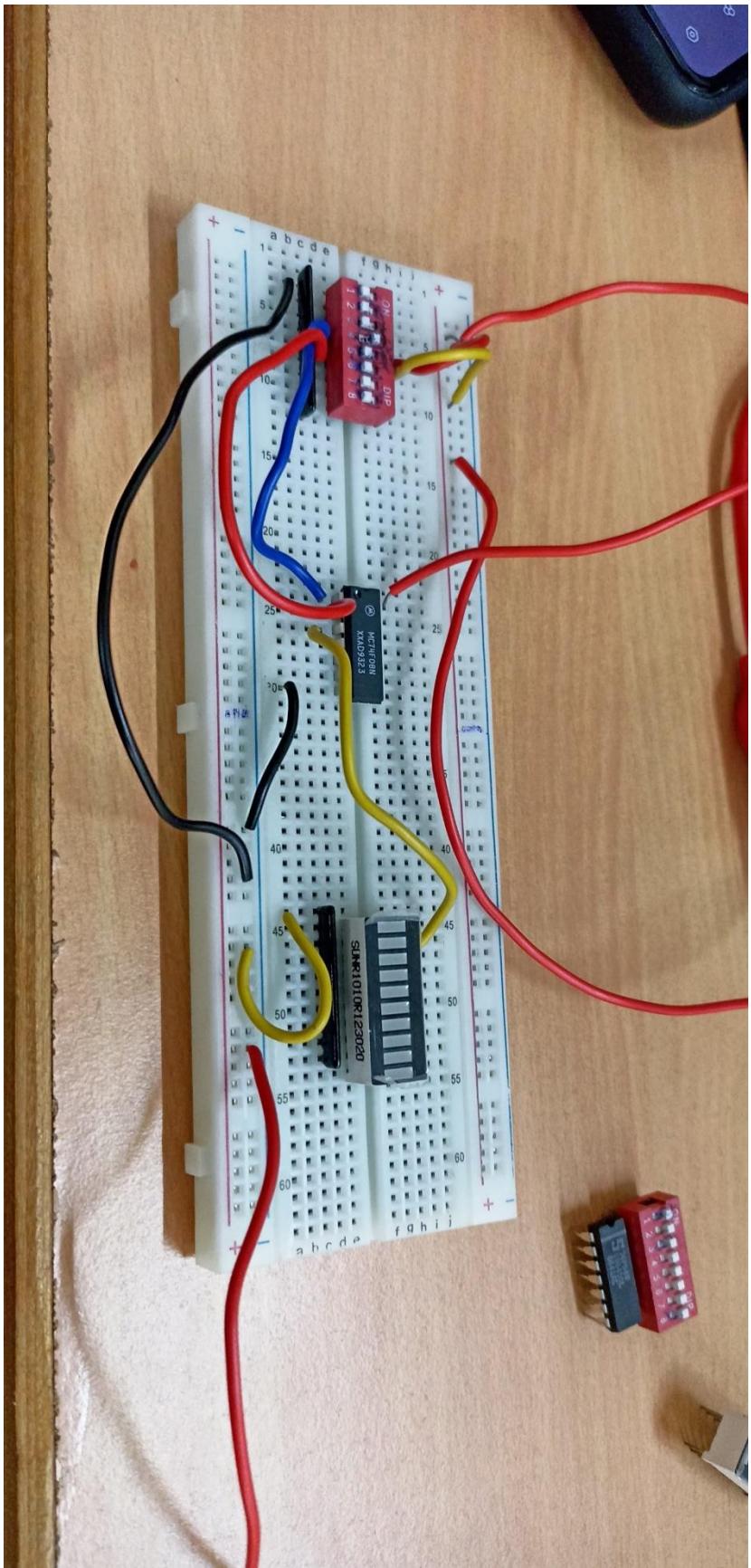


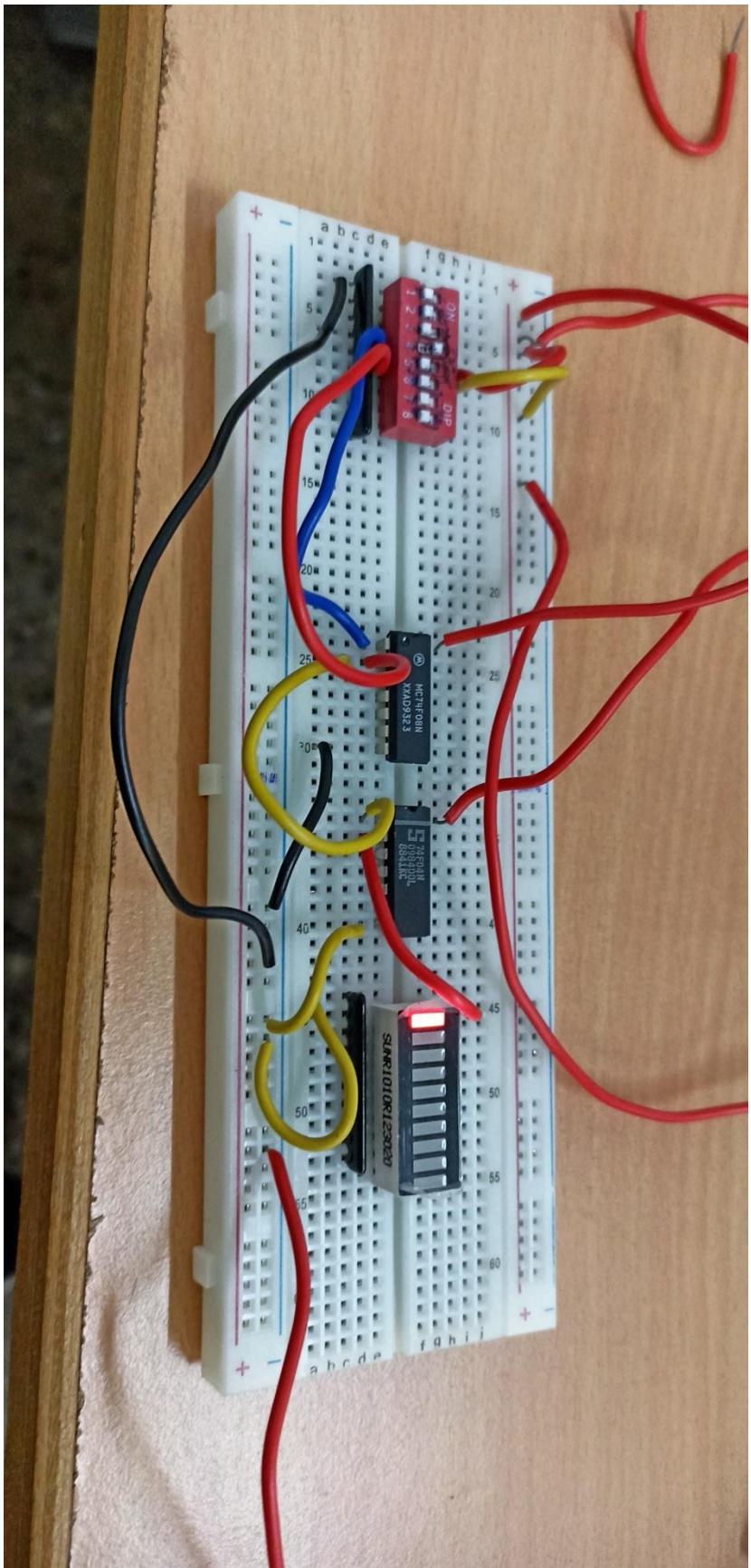


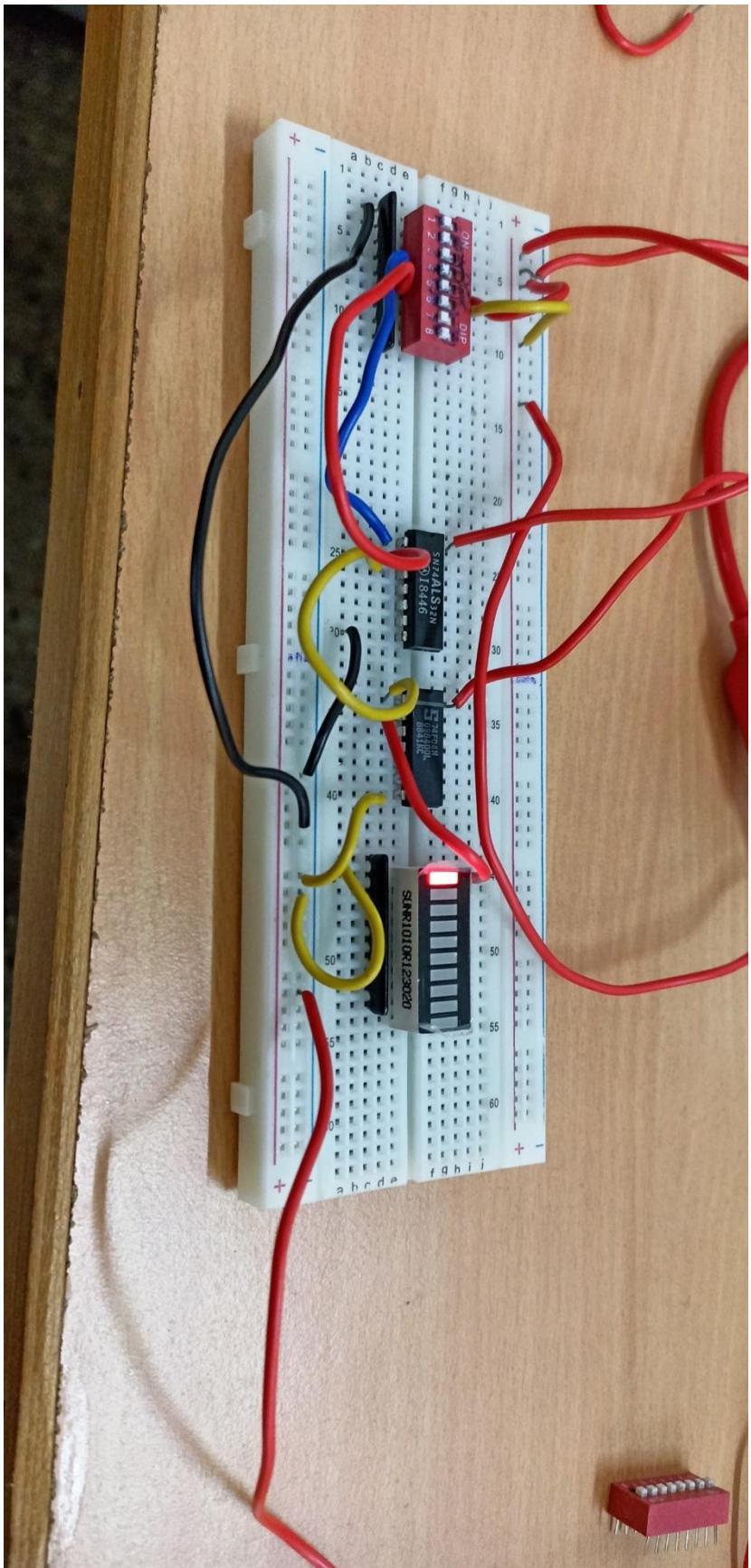


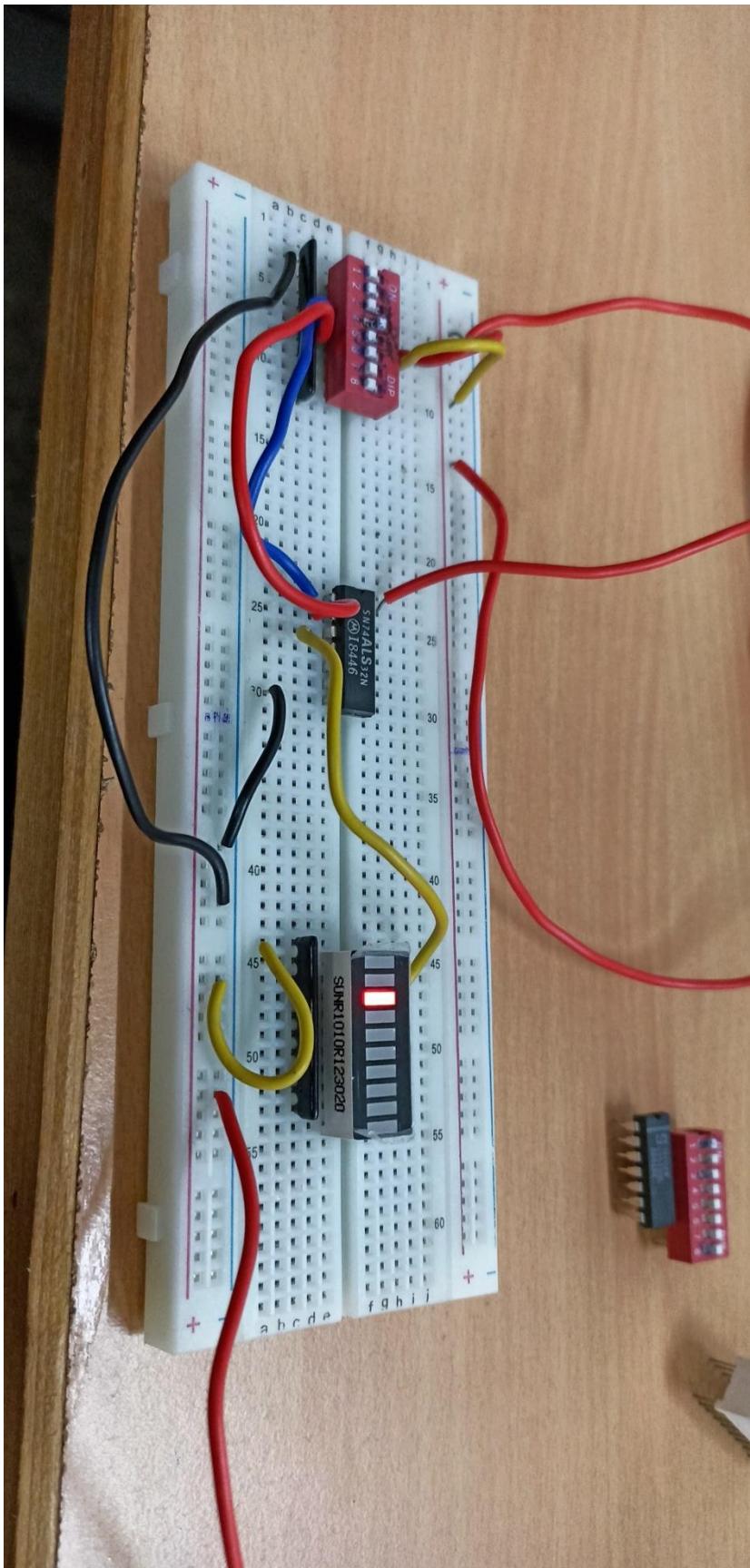


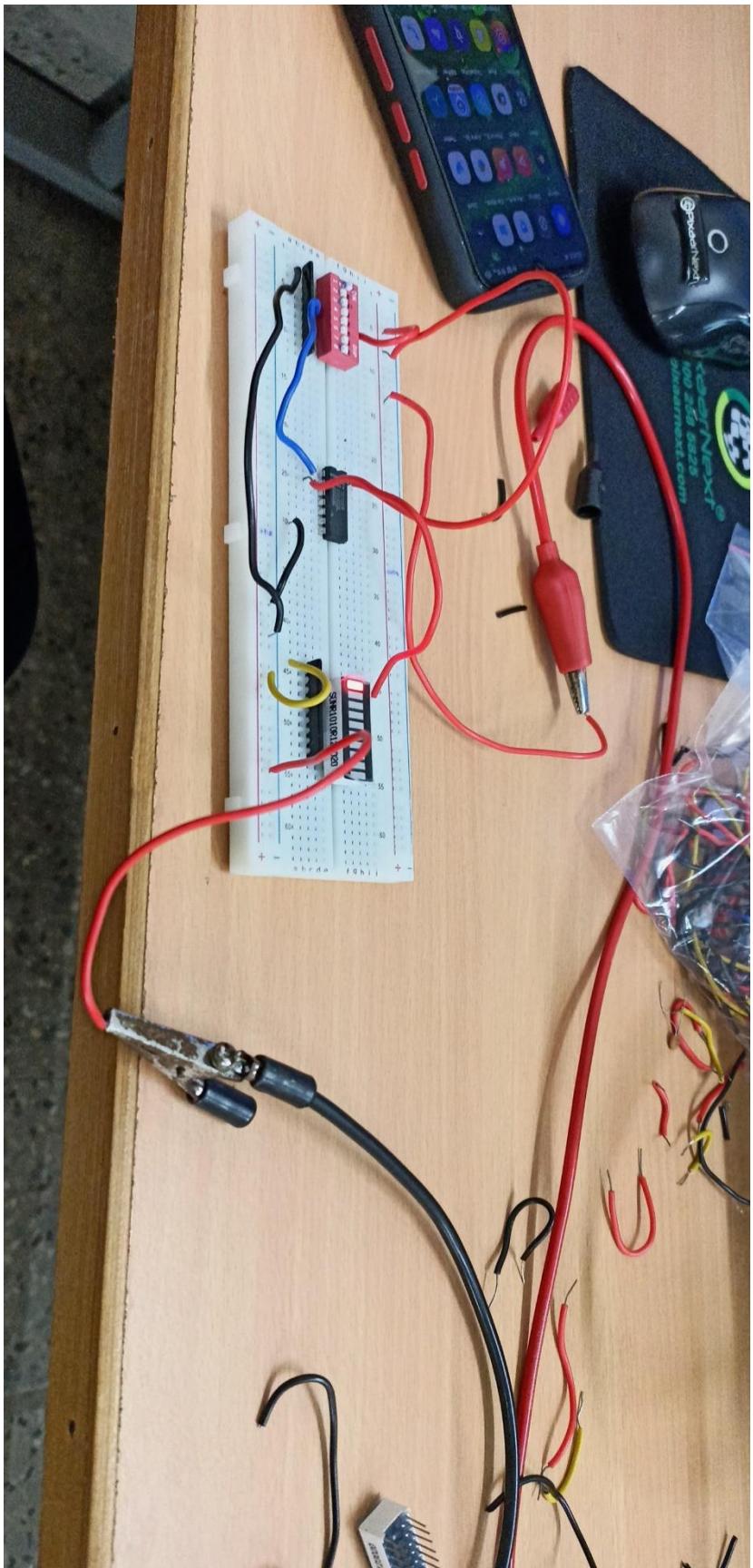


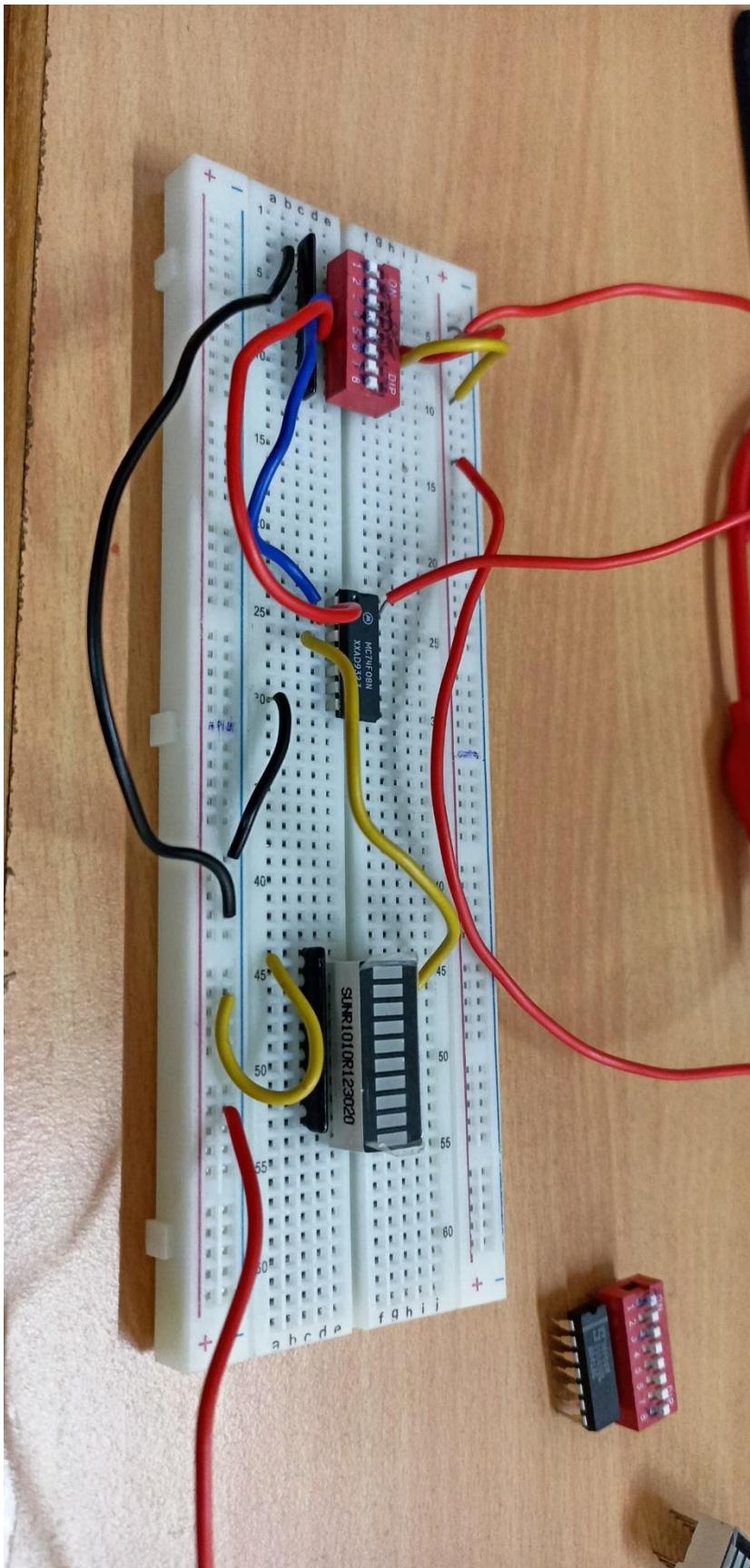


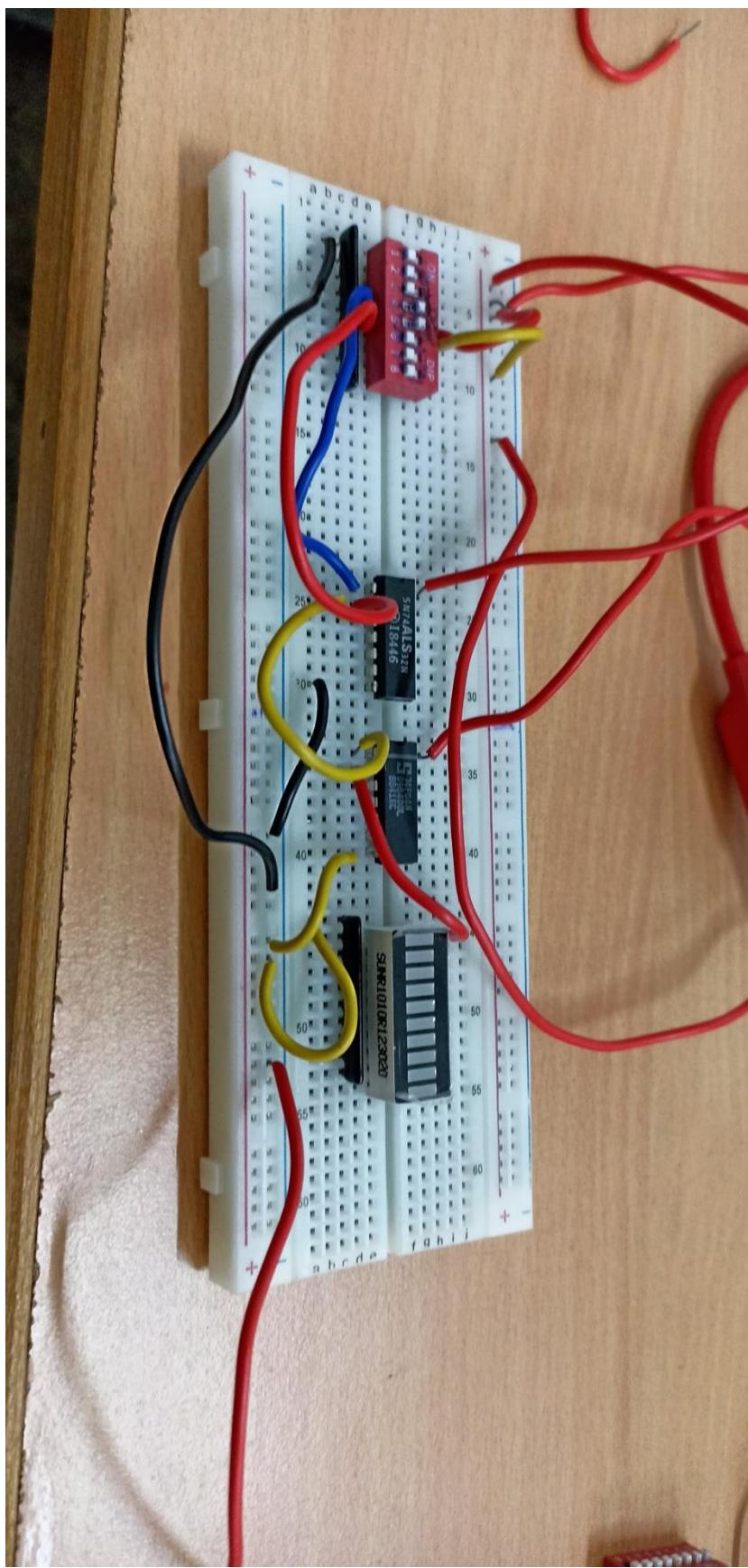


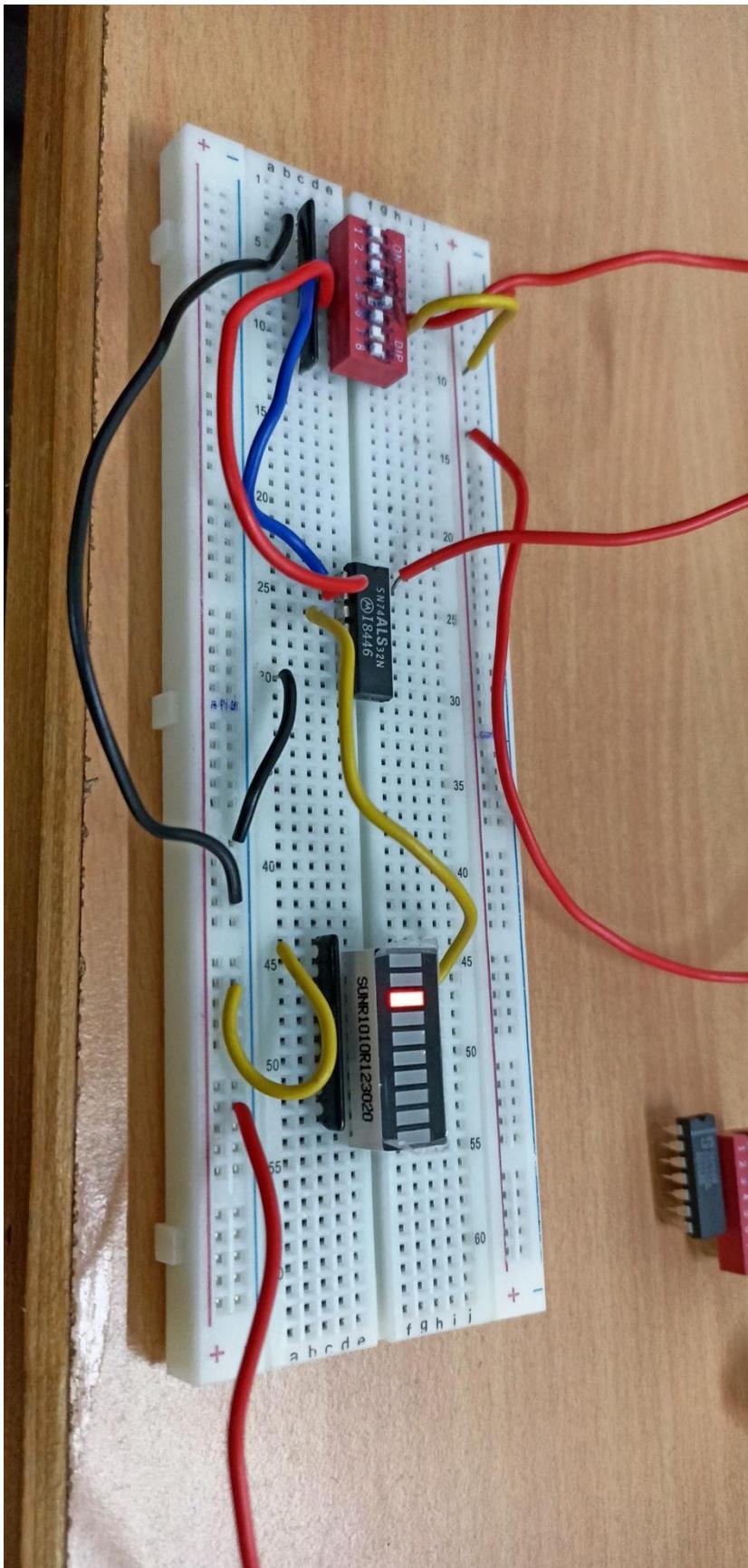


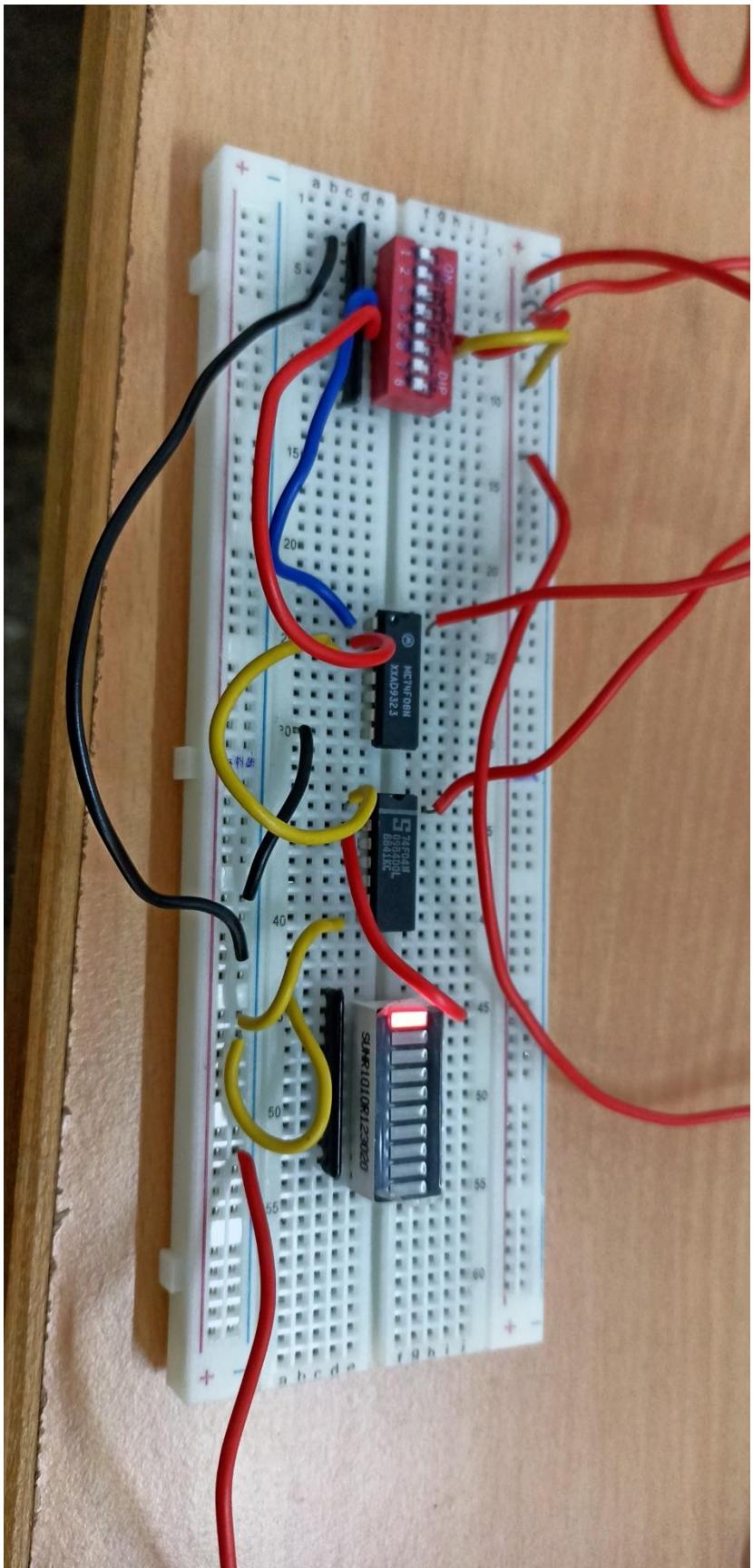


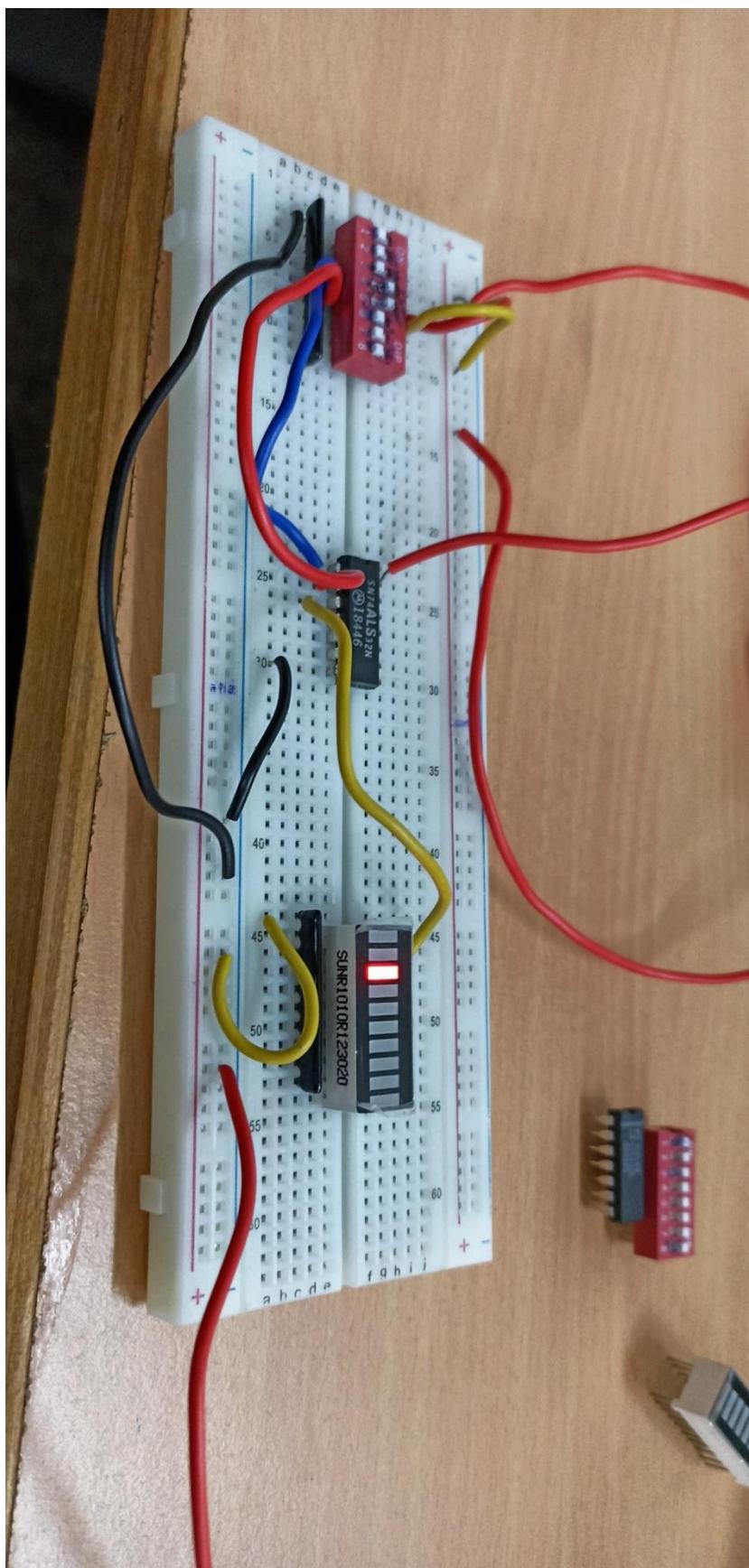


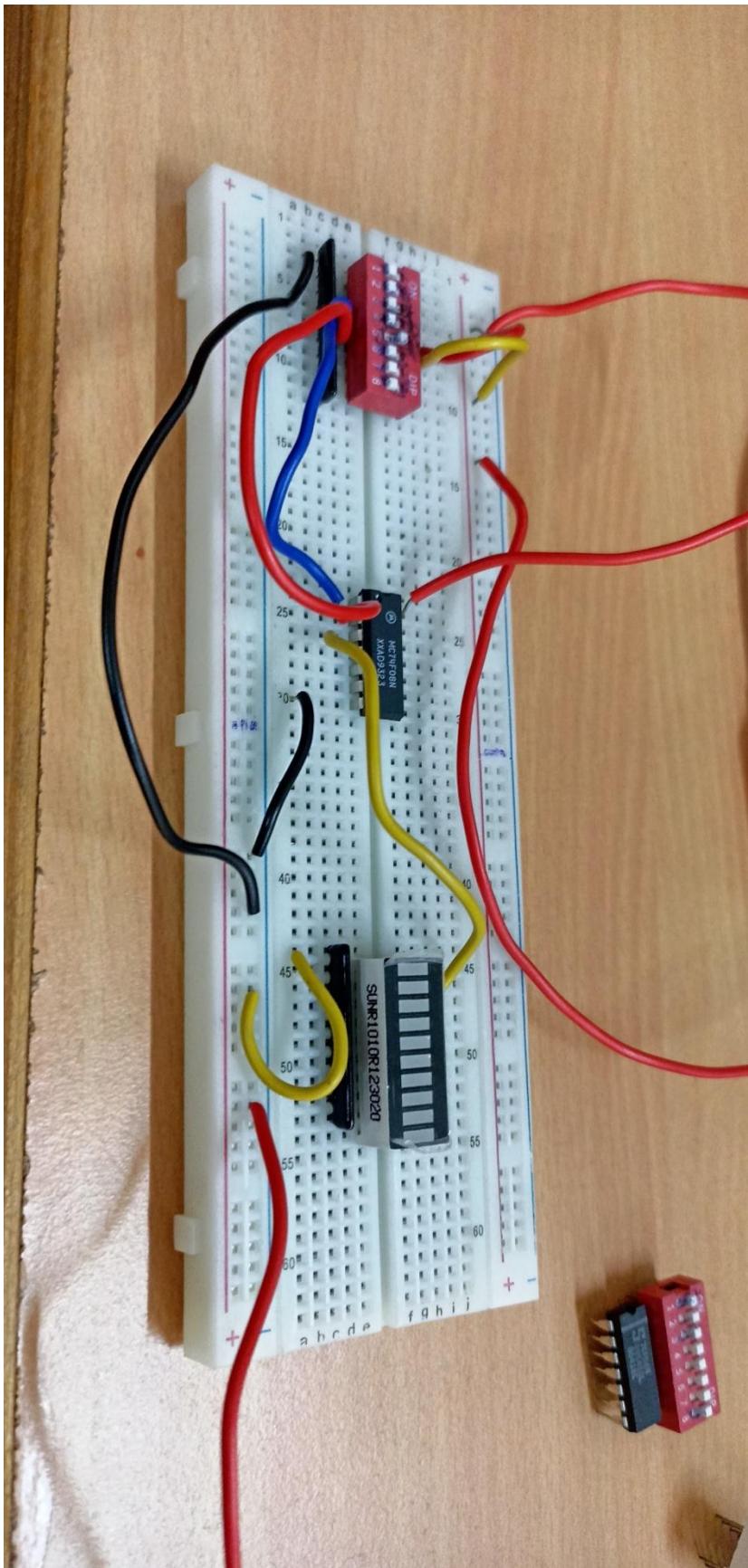












Conclusion:

We got to how gates function , we used OR,AND,NOT ,NAND(by putting NOT in front of AND gate),NOR(by putting NOT in front of OR gate),XOR,XNOR.
