

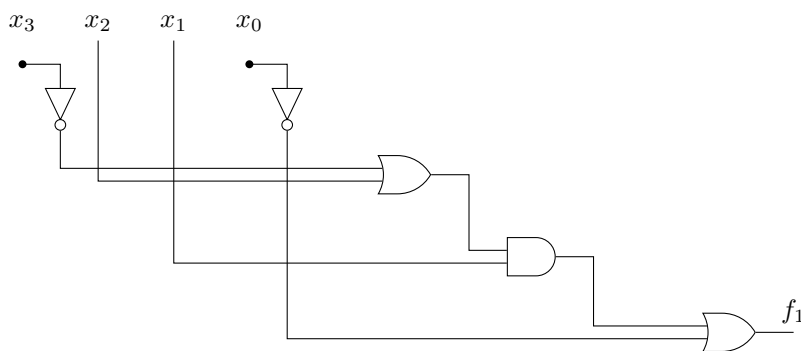
Name: Mannava Venkatasai

ASSIGNMENT-1

roll : FWC22030

PROBLEM STATEMENT:

Draw the Logic Circuit for the following Boolean Expression : $f(x_3, x_2, x_1, x_0) = (!x_3 + x_2).x_1 + !x_0$



sollution:

AIM:

To Draw the Logic Circuit and implement using Arduino for the following Boolean Expression : $f(x_3, x_2, x_1, x_0) = (!x_3 + x_2).x_1 + !x_0$

Components:

S.No	Component	Number
1	Arduino	1
2	Bread Board	1
3	Jumer Wires(M-M)	10
4	7474 IC	1
5	Seven segment display	1

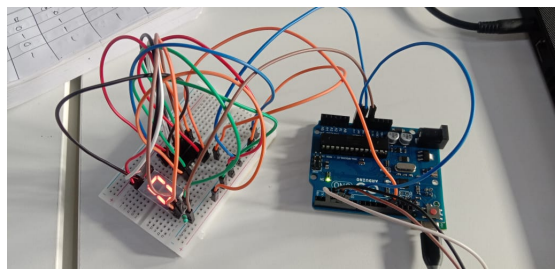
Procedure:

- 1) First make the 2,3,4,5 digital pins of arduino as input pins and declare the 13 pin as output pin.
- 2) Write the given logic in code and upload in to the arduino.
- 3) Connect the output pin i.e pin 13 of arduino to the one of the input of 7447 IC and the remaining input pins are connected to ground.
- 4) Connect the outputs of IC 7447 to the corresponding pins of seven segment display.
- 5) The out put will be displayed in display either 1 or 0 corresponds to the out given boolean expression.

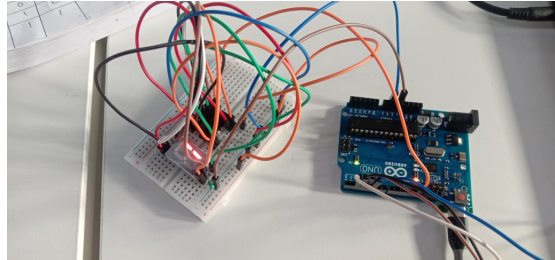
OUTPUTS:

Truthtable:

x3	x2	x1	x0	f
0	0	0	1	1
0	0	0	1	0
0	0	1	1	1
0	0	1	1	1
0	1	0	1	1
0	1	0	1	0
0	1	1	1	1
1	1	1	1	1
1	0	0	1	1
1	0	0	1	0
1	0	1	1	1
1	0	1	1	0
1	1	0	1	1
1	1	0	1	0
1	1	1	1	1
1	1	1	1	1



The output is displayed as 0 in seven segment display corresponds to the given inputs.



The output is displayed as 1 in seven segment display corresponds to the given inputs.

Conclusion:

Hence I have drawn the logic circuit for the given logic expression and I have implemented the circuit in arduino and verified the outputs.