IOT Assignment

P.Sravan kumar
sravankumar912126@gmail.com
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1 Introduction

There are different type of boolean algebra rules to simplify the boolean expression.One of the important law is distributive law.This can be stated as follows: A.(B+C)=A.B+A.C (OR distributive law). A+(B.C)=(A+B).(A+C) (AND distributive law).

2 Method to solve

To prove distributive law I used 3 lED's for LHS(A.(B+C)), RHS((A+B).(A+C)) and for condition of LHS=RHS.

3 Components

Component	value	quantity
Resistor	220 ohm	1
Arduino	UNO	1
LED		3
Bread board		1
Jumper wires	M-M	20

Table 1:

4 Distributive law proof with truth table

A	B	C	x(LHS)	y(RHS)
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	0	0
1	0	0	0	0
1	0	1	1	1
1	1	0	1	1
1	1	1	1	1

Table 2:

5 Connections

Make connections to the LED's and Vamanboard based on table3 and figure1.

Vaman Pins	4	5	7	GND
LED	LED1+	LED2+	LED3+	-ve of 3 LED's

Table 3:

6 Conclusion

The output of LED3 is 1 for all possible inputs.So LHS=RHS i.e A.(B+C)=A.B+A.C hence distributive law verfied.

code link :

https://github.com/Sravan24365/iith-fwc/tree/main/iot

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