

Determining and testing boolean expression from truth table to its simplest form using K-map

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

Table 2:

1 Introduction

K maps are used to Simplify Boolean Expressions the given Expression to solve $F(A,B,C)=(3,6)$

2 karnaugh-map

		BC			
		00	01	11	10
A	0	0	0	1	0
	1	0	0	0	1

$$X=ABC'+A'BC=B(A+C)(A'+C')$$

3 Components

Component	value	quantity
Resistor	220 ohm	1
Arduino	UNO	1
LED		1
Bread board		1
Jumper wires	M-M	10

4 Truth table for given expression

Table 1:

5 Connections and results

Also make connections to arduino UNO ,led and inputs based on table3.

Arduino UNO	2	3	4	8	gnd
Input	A	B	C		
led				+	-

Table 3:

Sample input	A	B	C	LED
1	1	1	0	ON
2	0	1	0	OFF

Table 4:

5.1 Code Link

<https://github.com/Darshan265/ASSIGNMENT-IDE-/blob/main/main.cpp>