

IOT ASSIGNMENT

Koushik Kalyani
koushikkalyani369@gmail.com
IITH - Future Wireless Communication

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II. ANSWER

The above question can be solved by grouping 1's. Therefore the answer is $\bar{R}Q + S$

PQ

		PQ				
		00	01	11	10	
1	1	00	0	1	1	0
2	2	01	1	1	1	1
2	RS	11	1	1	1	1
2		10	0	0	0	0

I. QUESTION

The output expression for the karnaugh map shown below is

PQ

		00	01	11	10
RS	00	0	1	1	0
	01	1	1	1	1
	11	1	1	1	1
	10	0	0	0	0

- (A) $\bar{R}Q + S$
(B) $QR + \bar{S}$
(C) $QR + S$
(D) $QR + \bar{S}$

III. TRUTH TABLE

R	S	P	Q	F
0	0	0	0	0
0	0	0	1	1
0	0	1	0	0
0	0	1	1	1
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

Truth table for Boolean function F

IV. LOGIC DIAGRAM

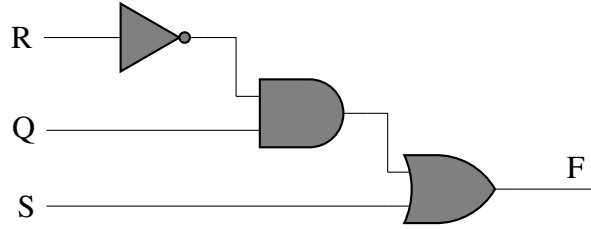


Fig. 2

V. COMPONENTS

Components	Values	Quantity
VAMAN	ESP32	1
Jumper Wires	M-F	8
Breadboard		1
LED		1
Resistor	100ohms	1

VI. IMPLEMENTATION

VAMAN PIN	INPUT	OUTPUT
2	R	
3	S	
4	P	
5	Q	
13		F

Connections

Procedure

1. Connect the circuit as per the above table.
2. Connect inputs to Vcc for Logic 1, ground for Logic 0.
3. Execute the circuit using the below codes.

<https://github.com/koushikkalyani/FWC/blob/main/IOT/IOT.cpp>

4. Change the values of R, S, P, Q in the Hardware and verify the Truth Table.