FPGA ASSIGNMENT

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IITH - Future Wireless Communications (FWC)

CONTENTS

I. QUESTION

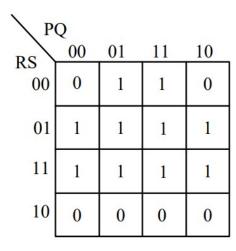The output expression for the Karnaugh map shown below is.

Fig. 1. KARNAUGH MAP

II. COMPONENTS

Component	Values	Quantity
vaman	LC	1
JumperWires	M-F	10
Breadboard		1
LED		1
Resistor	220ohms	1

Table.COMPONENTS

III. TRUTH TABLE

Q	R	!R	S	Q&!R|S
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1

Fig. 2. TRUTH TABLE

A. LOGIC

From the Karnaugh map we get

$$output = Q.\overline{R} + S \tag{1}$$

IV. PROCEDURE

1) Connect the anode (longer leg) of the LED to PYGMY pin 4 on the VAMAN board.
2) Connect the cathode (shorter leg) of the LED to a current-limiting resistor (e.g., 220 ohms).
3) Connect the other end of the current-limiting resistor to the GND (ground) pin on the VAMAN.
4) Use PYGMY pin 1,2,3 on the VAMAN board to give the input manually.

V. CONCLUSION

Hence we have found the output from Karnaugh map given which represents $Q\overline{R} + S$.Execute the circuit using below code.

https://github.com/Vamsichowdary04/Future
WirelessCommunicationFWC/blob/
main/FPGAVAMAN/codes/helloworldfpga.v