

# EE5811 : FPGA LAB

## ASSIGNMENT 2

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### Problem

Question 5) c) from papers/icse/cs/2018.pdf  
Simplify the following expression using Boolean Laws :

$$A.(A' + B).C.(A + B)$$

Implement above program in Arduino.

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### Solution

#### Truth Table

<i>A</i>	<i>B</i>	<i>C</i>	LHS	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	0	0
1	1	0	0	0
1	1	1	1	1

Table 1: Truth table for  $A.(A' + B).C.(A + B) = A.B.C$

Implemented the above truth table in Arduino. The inputs A,B,C equivalent are displayed on seven segment display and its corresponding output is displayed with LED.

Steps:

1. Wrote the program in termux (main.cpp)
2. Generated hex file (firmware.hex) for the program and sent the file to laptop.
3. On laptop used XLoader to load the hex file onto Arduino.