EE 5811 : FPGA LAB ASSIGNMENT 2

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Download the codes from

https://github.com/Shantanu2508/mtech/tree/master/FPGA_LAB/A2

1 PROBLEM STATEMENT

Reduce the following Boolean Expression to its simplest form using K-Map.

$$F(X,Y,Z,W) = \sum(0,1,4,5,6,8,9,11,15) \quad (1)$$

2 SOLUTION

From the K-Map shown in Figure 0 the above expression can be simplified as,

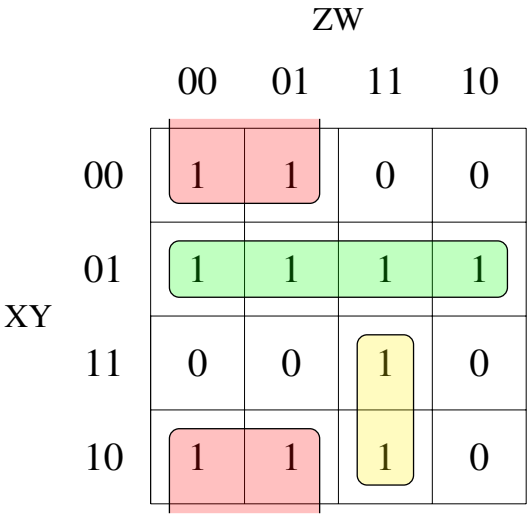

Fig. 0: K-Map

X	Y	Z	W	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	1
1	0	1	0	0
1	0	1	1	1
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

TABLE 0: Truth table for $F(X,Y,Z,W)$

$$F(X,Y,Z,W) = \sum(0,1,4,5,6,7,8,9,11,15) \quad (2)$$

$$= \bar{X}Y + \bar{Y}Z + XZW \quad (3)$$