## 1

## EE 5811 : FPGA LAB ASSIGNMENT 1

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Download the codes from

 $https://github.com/Shantanu2508/mtech/blob/master\\/FPGA\_LAB/A1/A1.c$ 

## 1 PROBLEM STATEMENT

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

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

## 2 SOLUTION

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

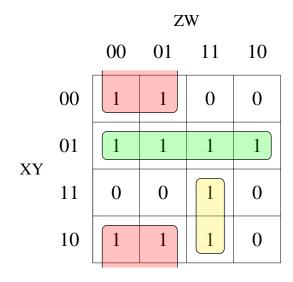


Fig. 0: K-Map

$$F(X, Y, Z, W) = \sum_{\bar{X}Y + \bar{Y}\bar{Z} + XZW} (0, 1, 4, 5, 6, 7, 8, 9, 11, 15)$$
 (2)  
=  $\bar{X}Y + \bar{Y}\bar{Z} + XZW$  (3)