ASSIGNMENT 1

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1 Question

Derive a Canonical POS expression for a Boolean function G, represented by the following truth table:

X	Y	Z	G(X,Y,Z)
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1
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SOLUTION: G = $(X+Y+Z).(X+Y+\bar{Z}).(X+\bar{Y}+\bar{Z}).(X+\bar{Y}+Z)$ Minimization Using K-Map : G = $(X+Y).(X+\bar{Z}).(\bar{X}+\bar{Y}+Z)$

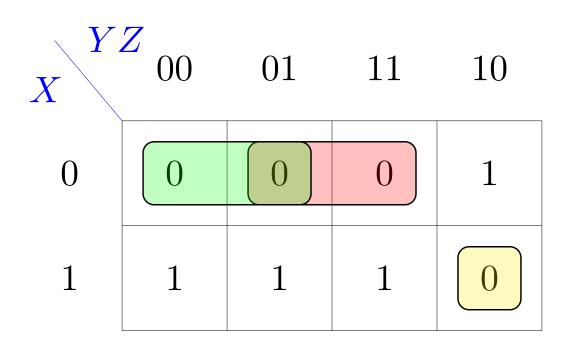


Figure 1: POS for G

1.1 Implement NAND Logic in SOP Form

$$X.Z + \overline{X}.Y.\overline{Z} + X.\overline{Y}$$

Output Using NAND Gates.

