# Assignment 7

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## 1 Boolean Expression

The Boolean expression of $f = A\bar{B}\bar{C}\bar{D} + \bar{A}B\bar{C}\bar{D} + AB\bar{C}\bar{D} + ABC\bar{D}$

## 2 Kmap Expression

$f = AB\bar{D} + B\bar{C}\bar{D} + A\bar{C}\bar{D}$

Now, we have to make this expression in product form So, we will use the property $\overline{\overline{X}} = X$

$f = AB\bar{D} + B\bar{C}\bar{D} + A\bar{C}\bar{D}$

$\overline{\overline{f}} = \overline{\overline{AB\bar{D} + B\bar{C}\bar{D} + A(\bar{C}\bar{D}}}$

$\overline{\overline{f}} = \overline{(\overline{AB\bar{D}}).(\overline{B\bar{C}\bar{D}}).(\overline{A\bar{C}\bar{D}})}.....byUsing(\overline{X+Y+Z} = \bar{X}.\bar{Y}.\bar{D}$

## 2.1 COMBINATIONAL CIRCUIT