

Assignment-1

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Download the codes from

<https://github.com/pavanmanesh/EE5803/tree/main/assign1>

1 PROBLEM

Verify the following using Boolean Laws.

$$A' + B'.C = A'.B'.C' + A'.B.C' + A'.B.C + A'.B'.C + A.B'.C$$

2 SOLUTION

From the Figure 0, We can see that the right hand side expression is simplified to that of left side expression.

		<i>BC</i>			
		00	01	11	10
<i>A</i>	0	1	1	1	1
	1	0	1	0	0

Fig. 0: K-Map

3 TRUTH TABLE

The truth table corresponding to the given expression:

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

TABLE 0: Truth Table

4 IMPLEMENTATION USING NAND LOGIC

$$\overline{A} + \overline{B}.C = \overline{\overline{\overline{A} + \overline{B}.C}} = \overline{\overline{\overline{A}}.\overline{\overline{B}.C}} = \overline{\overline{A}.\overline{\overline{B}.C}} \quad (1)$$

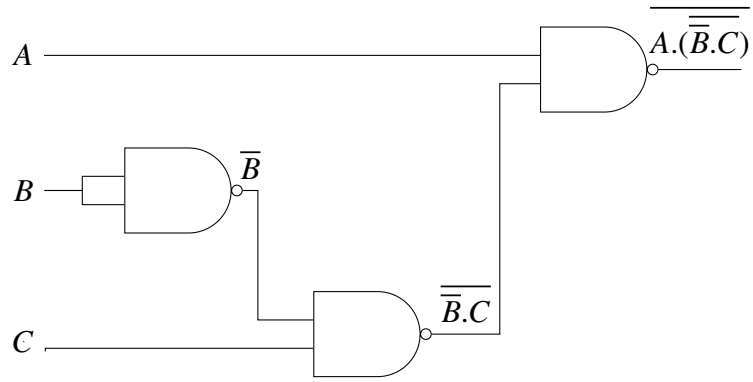


Fig. 0: Logic circuit using NAND logic