

CS101 Assignment 1 Solution Step By Step By Arslan Ali

Inputs		
A	B	C
0	0	0
0	0	1
0	1	0
0	1	1
1	0	0
1	0	1
1	1	0
1	1	1

Step 1:-

Find $(A' \cdot B)'$

A	B	C	A'	B'	A' · B'	$(A' \cdot B)'$
0	0	0	1	1	1	0
0	0	1	1	1	1	0
0	1	0	1	0	0	1
0	1	1	1	0	0	1
1	0	0	0	1	0	1
1	0	1	0	1	0	1
1	1	0	0	0	0	1
1	1	1	0	0	0	1

Step 2:-

Find $(A' + B)'$

CS101 Assignment 1 Solution Step By Step By Arslan Ali

A	B	C	A'	A'+B	(A'+B)'
0	0	0	1	1	0
0	0	1	1	1	0
0	1	0	1	1	0
0	1	1	1	1	0
1	0	0	0	0	1
1	0	1	0	0	1
1	1	0	0	1	0
1	1	1	0	1	0

Step 3:-

Find $(B+C)'$

A	B	C	B+C	(B+C)'
0	0	0	0	1
0	0	1	1	0
0	1	0	1	0
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	0

CS101 Assignment 1 Solution Step By Step By Arslan Ali

Step 4:-

Find $(A \cdot B)' \oplus (B+C')$

A	B	C	C'	A · B	(A · B)'	B+C'	(A · B)' \oplus (B+C')
0	0	0	1	0	1	1	0
0	0	1	0	0	1	0	1
0	1	0	1	0	1	1	0
0	1	1	0	0	1	1	0
1	0	0	1	0	1	1	0
1	0	1	0	0	1	0	1
1	1	0	1	1	0	1	1
1	1	1	0	1	0	1	1

Step 4:-

Find $(A \oplus B) \cdot (B+C)$

A	B	C	A \oplus B	B+C	(A \oplus B) · (B+C)
0	0	0	0	0	0
0	0	1	0	1	0
0	1	0	1	1	1
0	1	1	1	1	1
1	0	0	1	0	0
1	0	1	1	1	1
1	1	0	0	1	0
1	1	1	0	1	0

CS101 Assignment 1 Solution Step By Step By Arslan Ali

So Final Result is

Inputs			Output	Output	Output	Output	Output
A	B	C	$(A' \cdot B)'$	$(A'+B)'$	$(B+C)'$	$(A \cdot B)' \oplus (B+C)'$	$(A \oplus B) \cdot (B+C)$
0	0	0	0	0	1	0	0
0	0	1	0	0	0	1	0
0	1	0	1	0	0	0	1
0	1	1	1	0	0	0	1
1	0	0	1	1	1	0	0
1	0	1	1	1	0	1	1
1	1	0	1	0	0	1	0
1	1	1	1	0	0	1	0