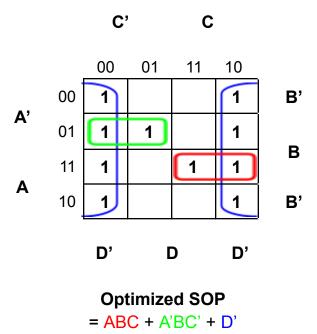# Combinatorial Logic Project 1
Lab 2 - RBN - 2306173113 - Athazahra Nabila Ruby - KKI

Truth Table, K-Map, Functions

Truth Table

A	B	C	D	O
0	0	0	0	1
0	0	0	1	0
0	0	1	0	1
0	0	1	1	0
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	0
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	1
1	1	1	1	1

K-Map for SOP of O

	C'		C	
	00	01	11	10
A' 00	1			1	**B'**
01	1	1		1
					B
11	1		1	1
A 10	1			1	**B'**

D' D D'

Optimized SOP
= ABC + A'BC' + D'

K-Map for POS of O

	C		C'	
	00	01	11	10
A 00		0	0		**B**
01			0	
					B'
11		0		
A' 10		0	0		**B**

D D' D

Optimized POS
= (B+D')(A'+C+D')(A+C'+D')