King Saud University
College of Computer and Information Sciences
Department of Computer Science

CSC 220: Computer Organization

Labwork – 4

1. Introduction

In this lab we have three experiments:

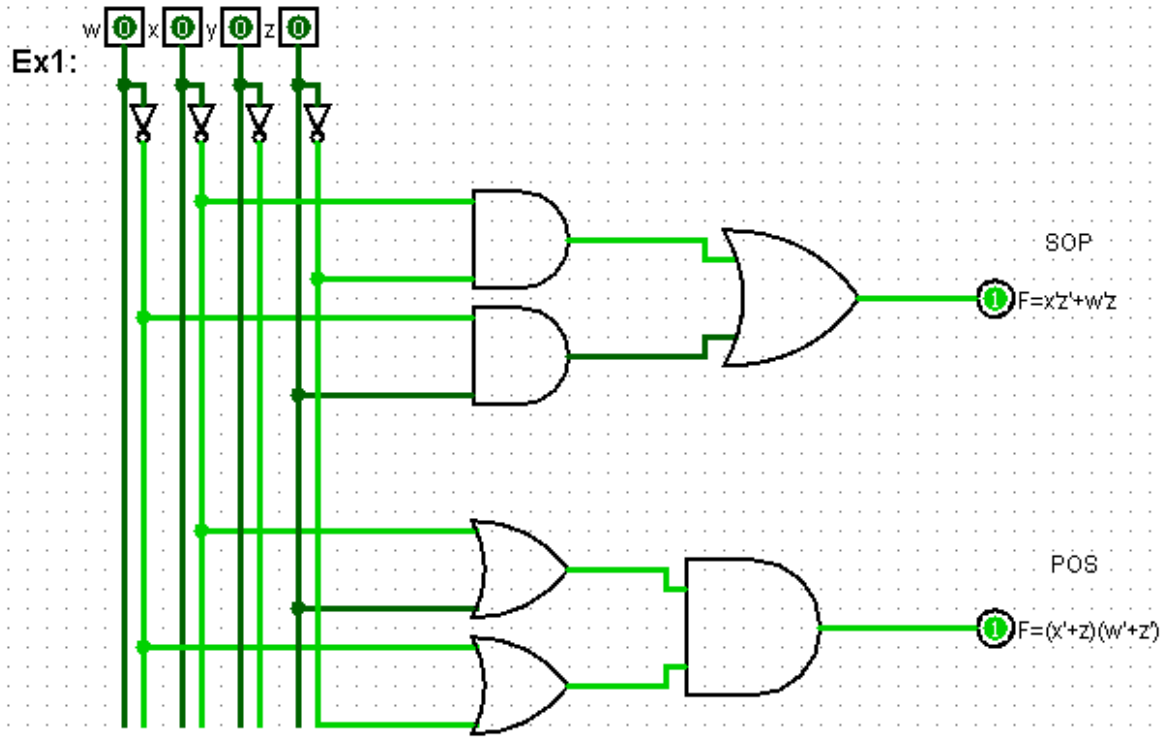
The First: we were given a function in minterm condition and a don't care condition, and we were asked to simplify it in two forms, SOP and POS, then draw the circuit for them.

The Second: we were asked to design a majority three input function's, a majority functions means that if the one inputs are more than the zeros the output will be 1 and vise-versa.

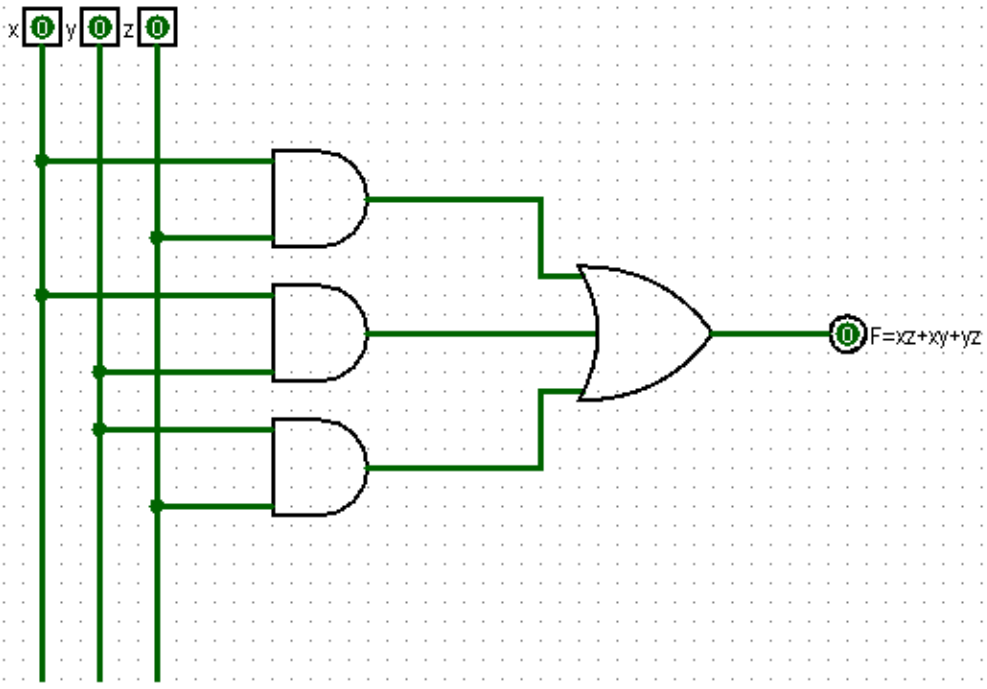
The Third: we were asked to design a three input-three output combinational circuit that produce a binary output one greater than the input if the input binary number is either 0,1,2 or 3 and produce a binary output of one less than the input if the binary input is either 4,5,6 or 7

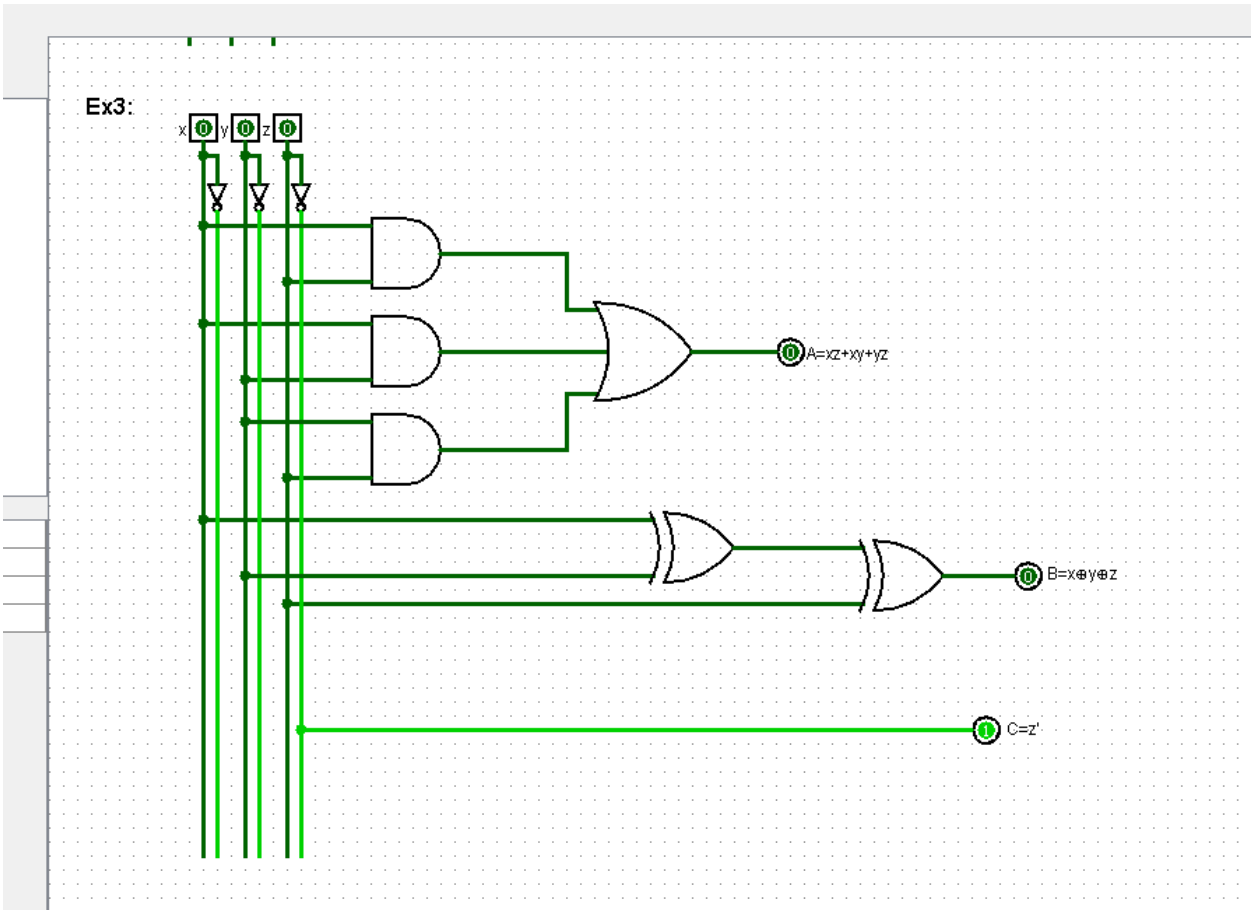
2. Experiments

Ex1:



Ex2: *Majority Function*





3. Results

X	Y	Z	A	B	C
0	0	0	0	0	1
0	0	1	0	1	0
0	1	0	0	1	1
0	1	1	1	0	0
1	0	0	0	1	1
1	0	1	1	0	0
1	1	0	1	0	1
1	1	1	1	1	0

4. Discussion

In conclusion in the first experiment we learnt how simplify using k-map and minterms and maxterms to get the minimal gates as possible, and in the second experiment we learnt what is the majority function and designed one and the last experiment we learnt how to design a unique circuit with some conditions and we can apply this knowledge to design any requirement-based circuits.