Daniel Delgado Acosta

Andrew Goldbaum

Eric Duong

3/13/2022
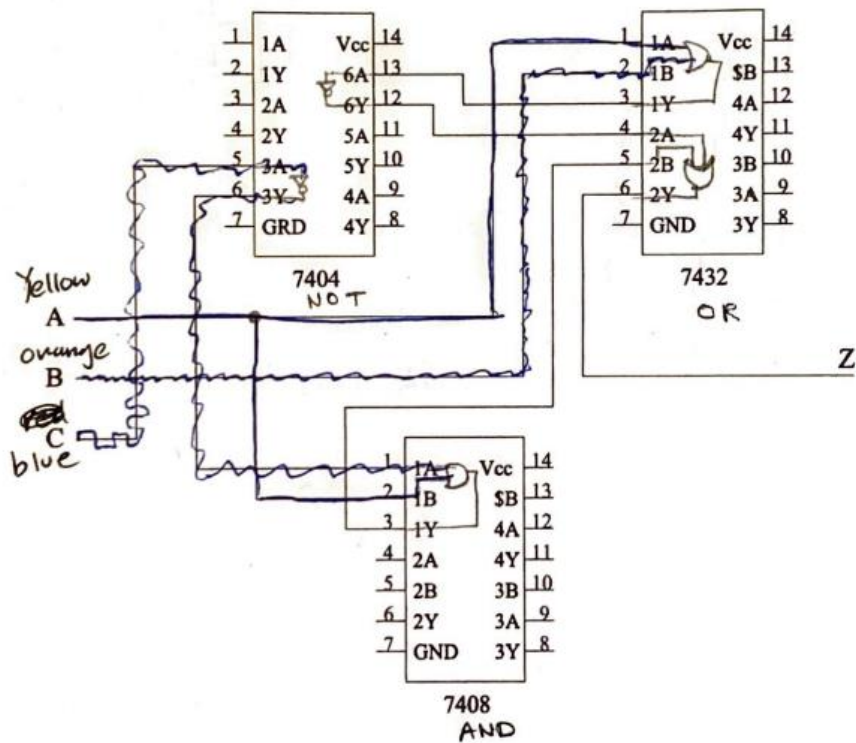
Lab 6: Build and analyze a circuit

1 Objective

In this experiment the student will build and analyze a simple circuit.
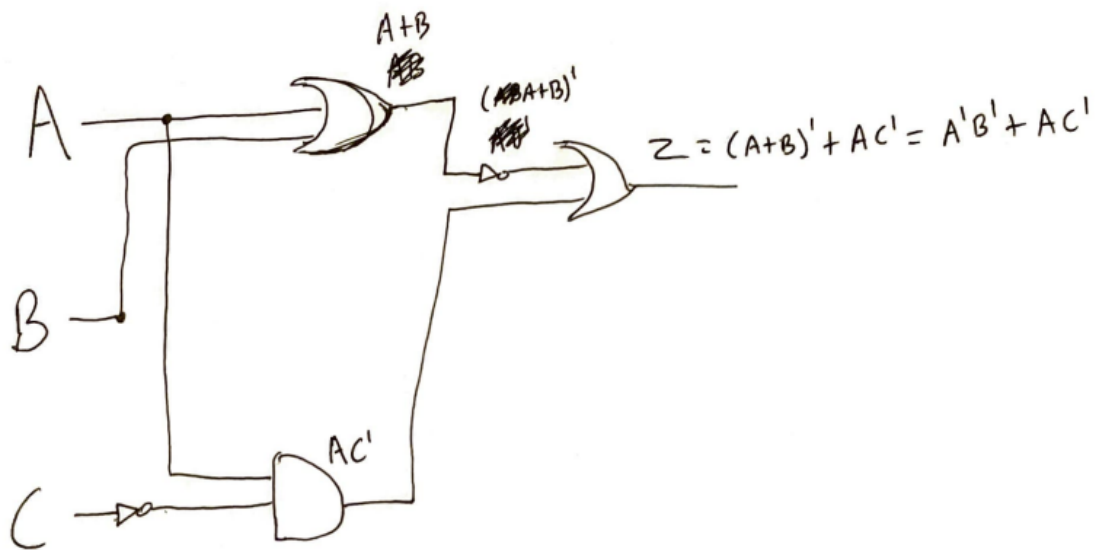
Provided: 1 7404 chip, 1 7408 chip, 1 7432 chip, breadboard.
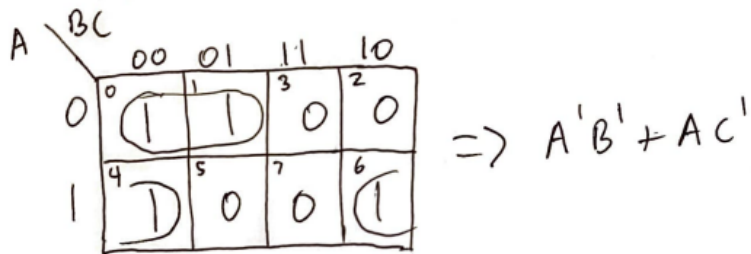
2 Experiment

1. Build the following circuit using the specified IC's. Make sure you connect the Vcc and GND in each of the IC's appropriately. Note that A, B and C are the inputs and Z is the output.

2. By tracing the circuit find Z as a function in terms of A, B and C.

3. Simplify function Z.   using   K-map

4. Create the truth table for Z.

5. For each of the input combination in the circuit, verify that the corresponding value of Z agrees with that in the truth table.

A+B

~~A·B~~

(~~AB~~ A+B)'

~~A·B~~

$Z = (A+B)' + AC' = A'B' + AC'$

AC'

A

B

C

K-map

A \ BC

	00	01	11	10
0	1	1	0	0
1	1	0	0	1

$\Rightarrow A'B' + AC'$

A	B	C	Z
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

Everything Checks Out.