THE UNIVERSITY OF AZAD JAMMU & KASHMIR, MUZAFFARABAD

COURSE TITLE	**CALD**
COURSE CODE	**CS-1205**
LAB TITLE	**HALF ADDER**
STUDENT NAME	**HASEEB SHEIKH**
STUDENT ROLL NUMBER	**2024-SE-31**
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SUBMISSION DATE	**JUNE 04, 2025**

DEPARTMENT OF SOFTWARE ENGINEERING

CALD

Lab 4

<mark>Objective:</mark>

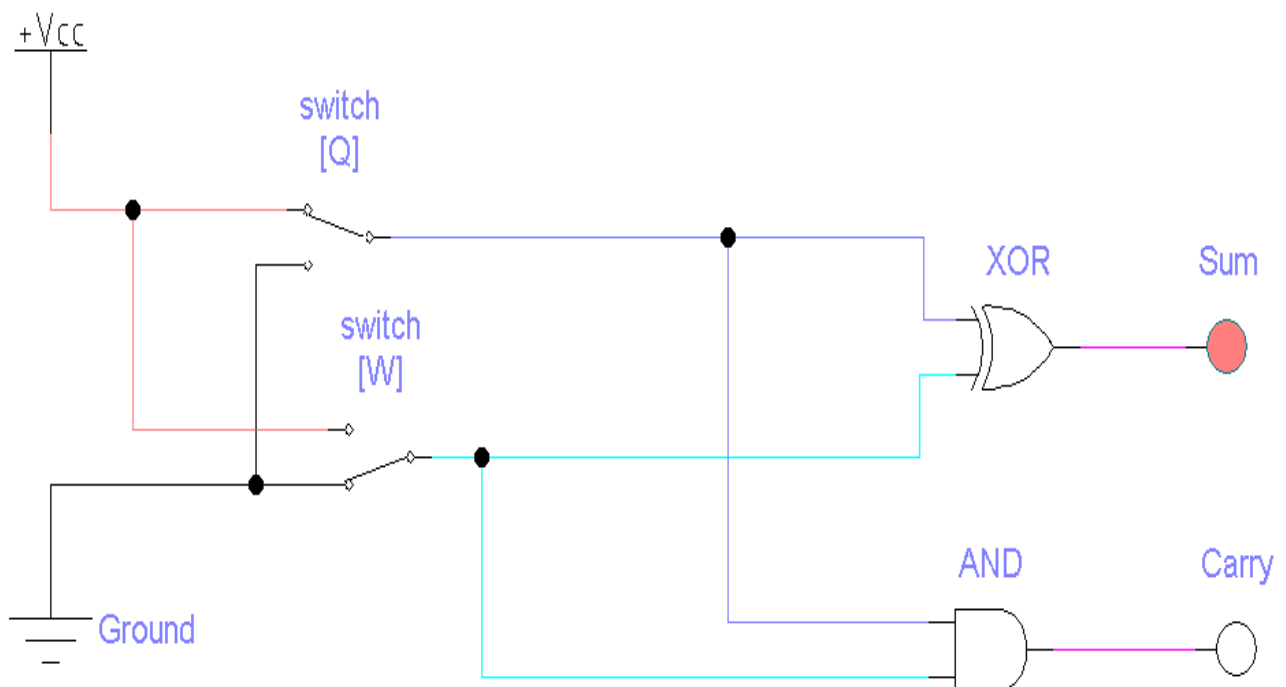This experiment aims to demonstrate the working of the half adder.

Experiment on EWB

<mark>1: Verification using a probe</mark>
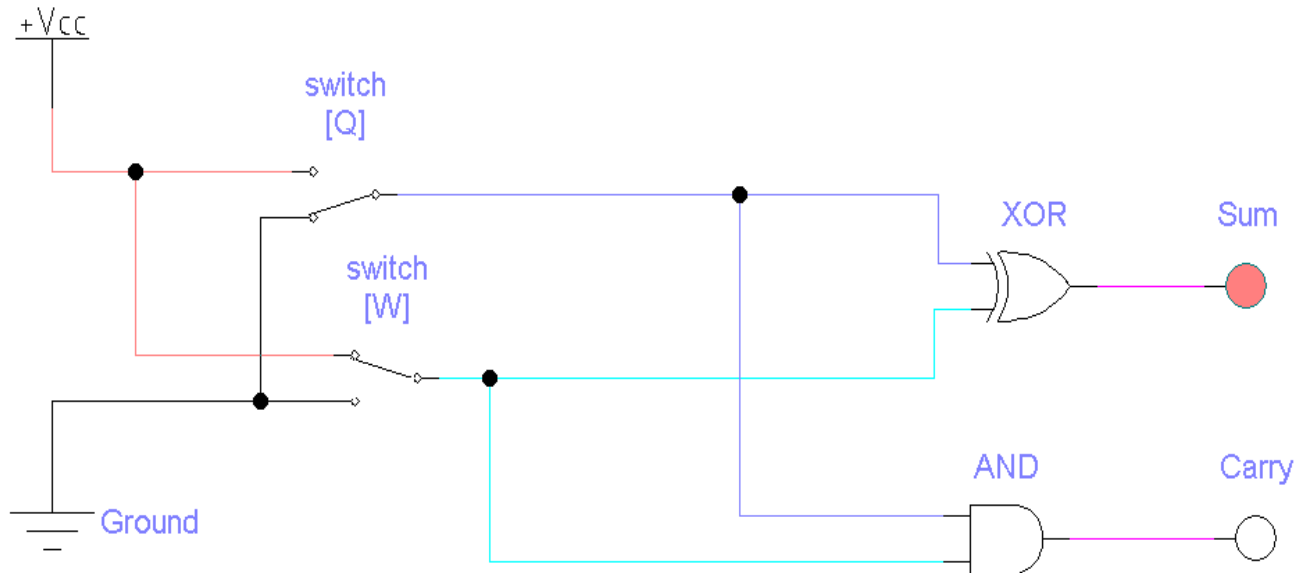
First Combination:

- Switch Q: 1
- Switch W: 0

Second Combination:

- Switch Q: 0
- Switch W: 1

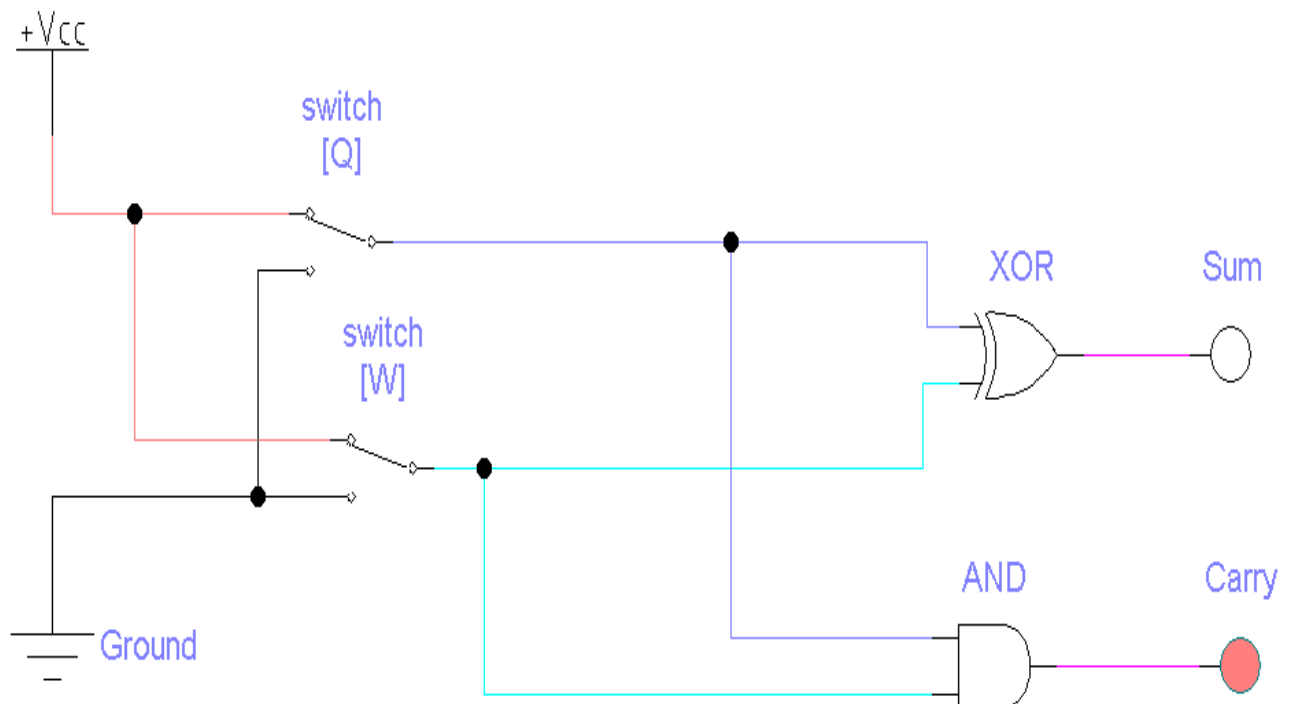+ve power supply

+Vcc

switch
[Q]

switch
[W]

Ground

XOR

Sum

AND

Carry

Third Combination:

- Switch Q: 1
- Switch W: 1

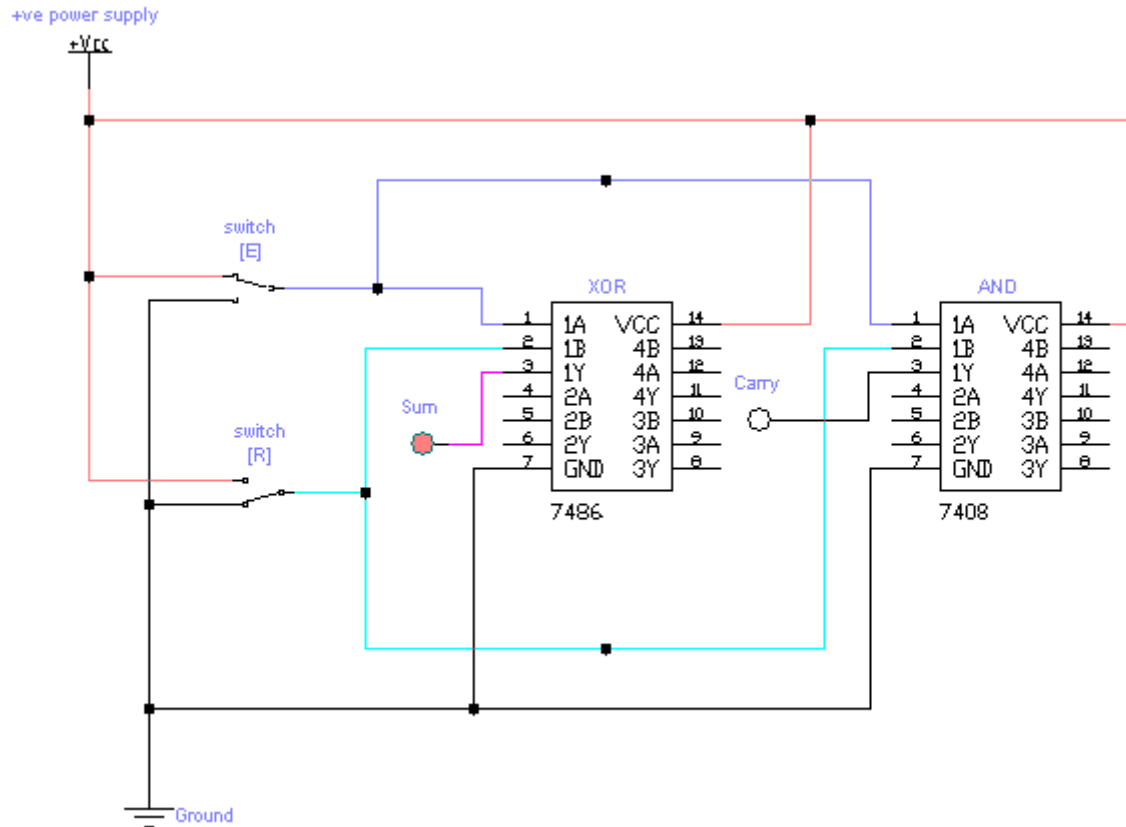+ve power supply

+Vcc

switch
[Q]

switch
[W]

Ground

XOR

Sum

AND

Carry

2: Verification using ICs

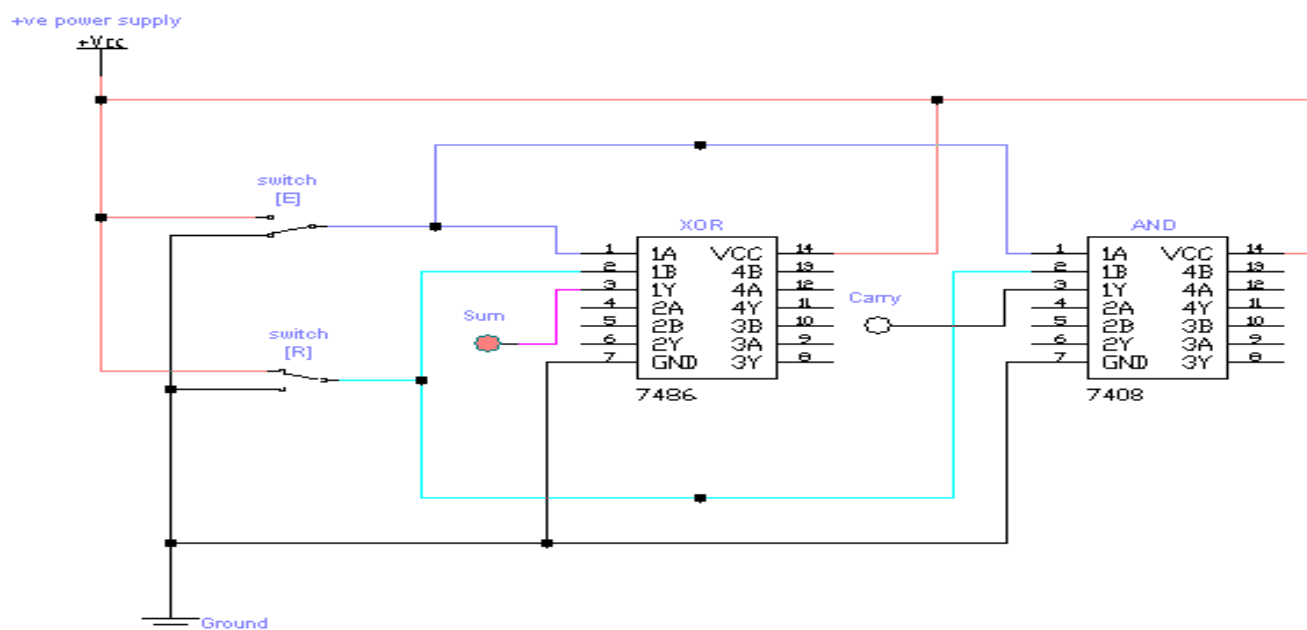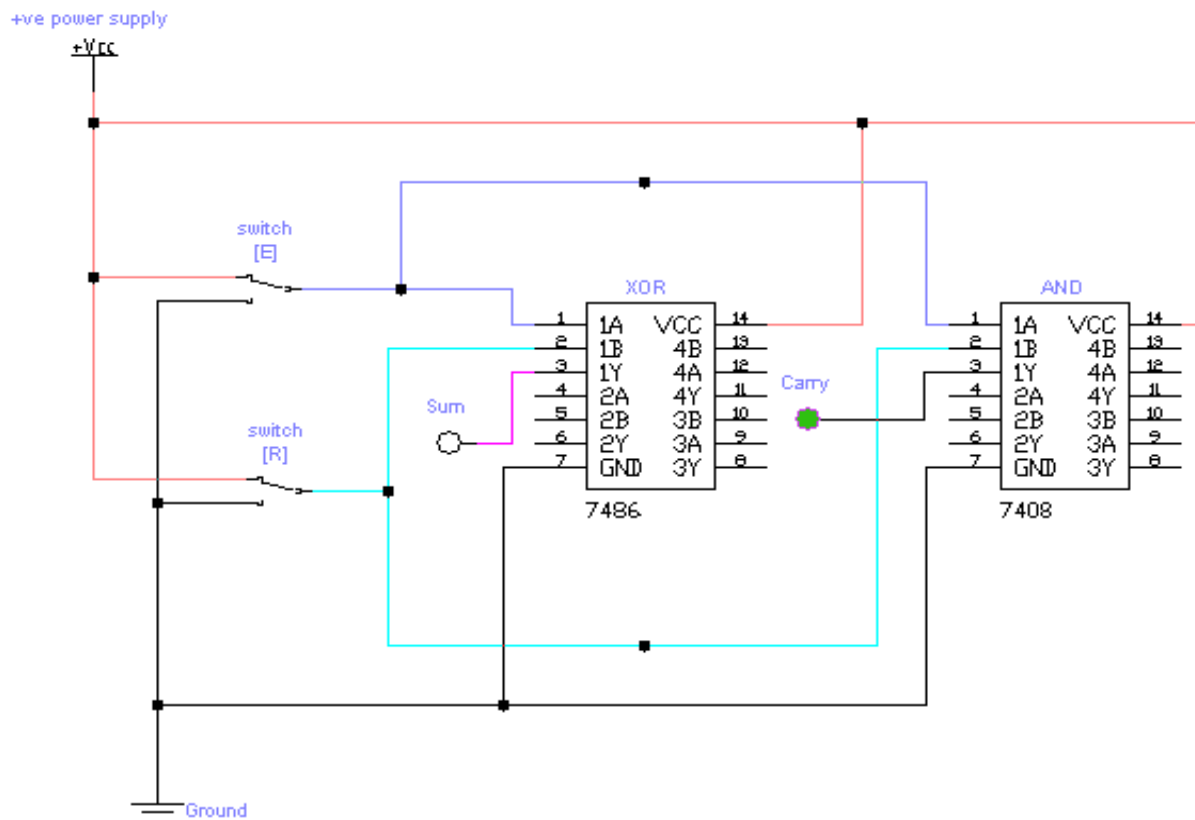## First Combination:

- Switch Q; 1
- Switch W: 0

Second Combination:
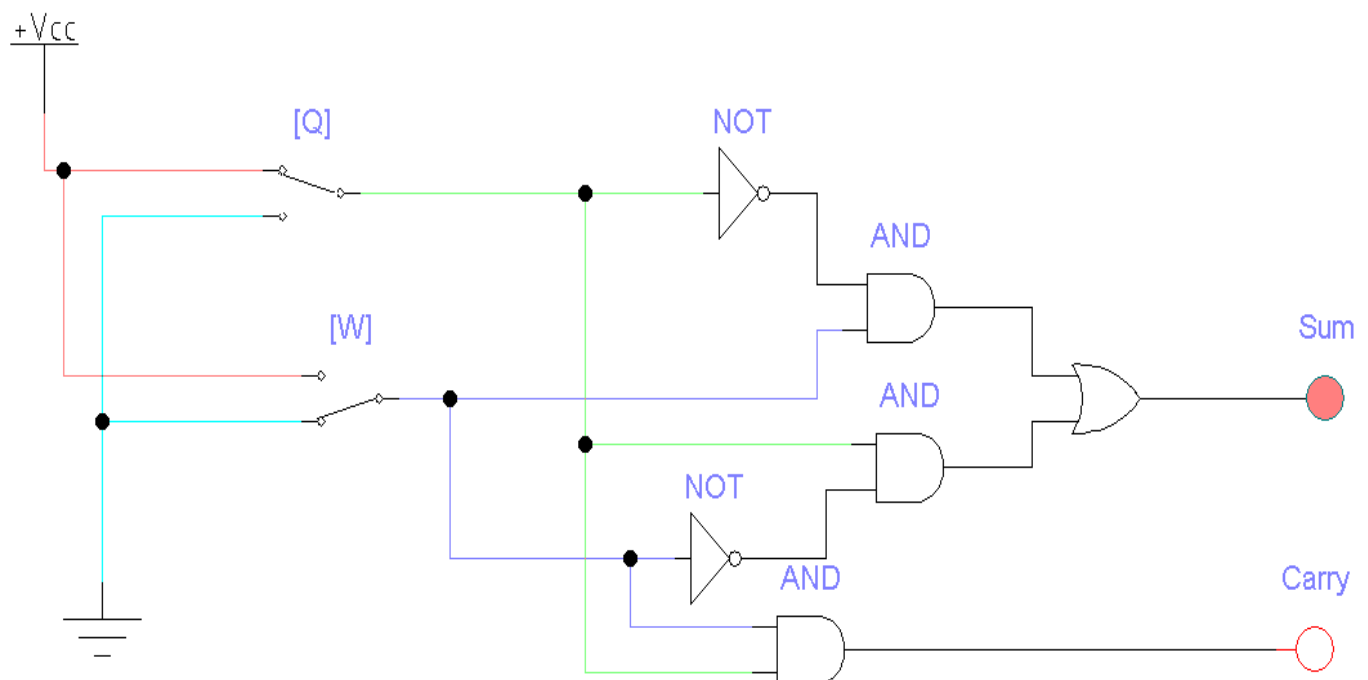
- Switch Q: 0
- Switch W: 1

Third Combination:

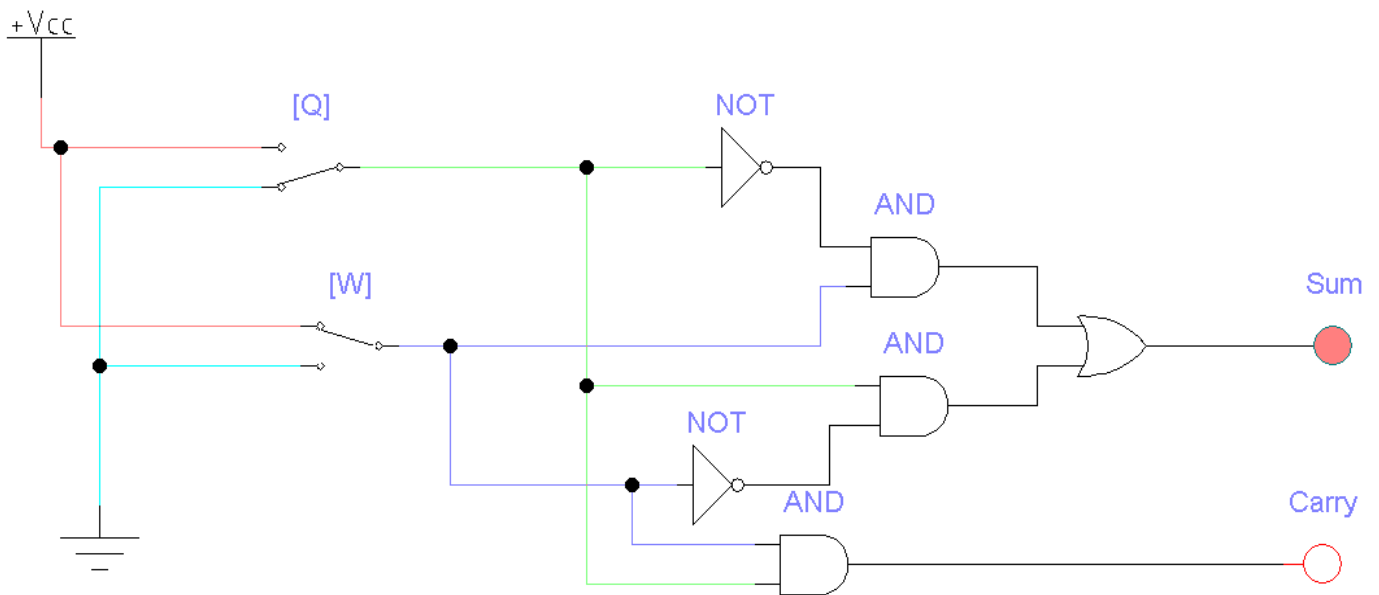- Switch Q: 1
- Switch W: 1

3: Complicated Circuit

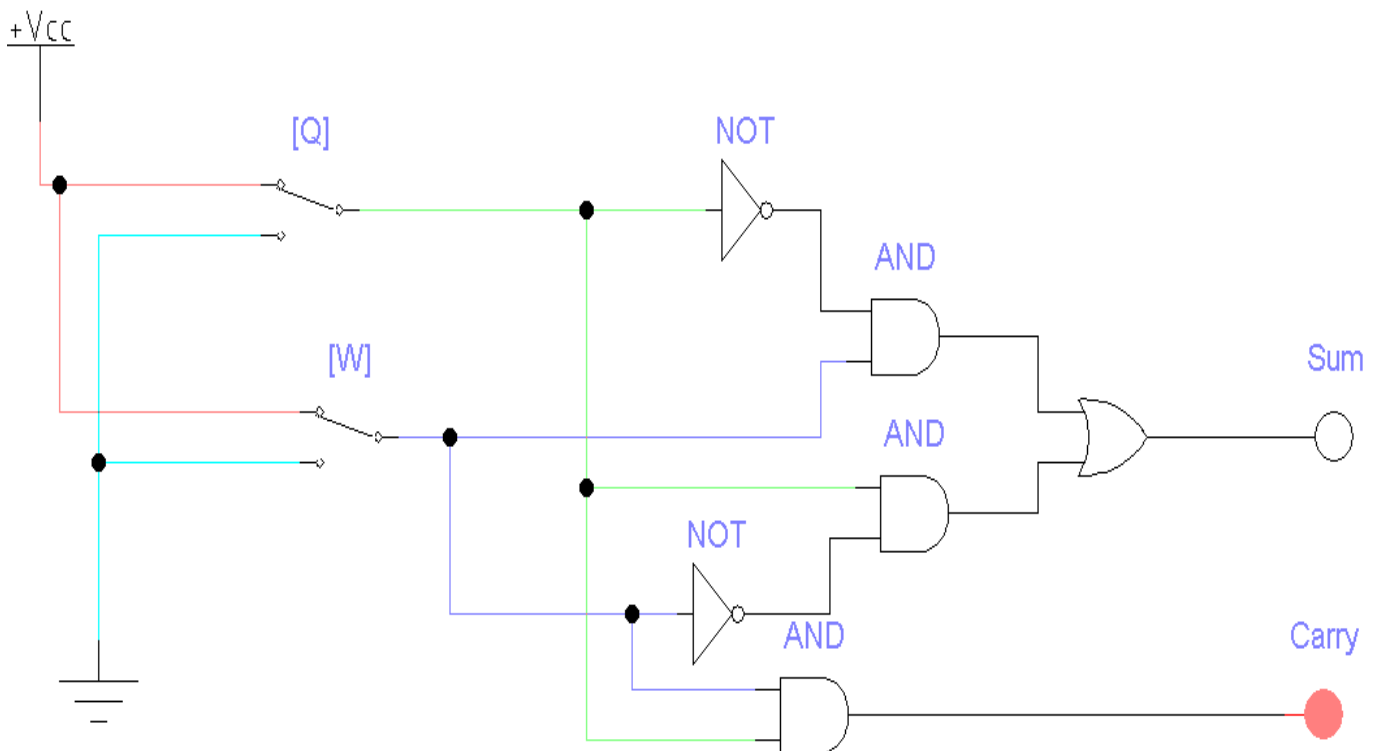## First Combination:

- Switch Q; 1
- Switch W: 0

Second Combination:
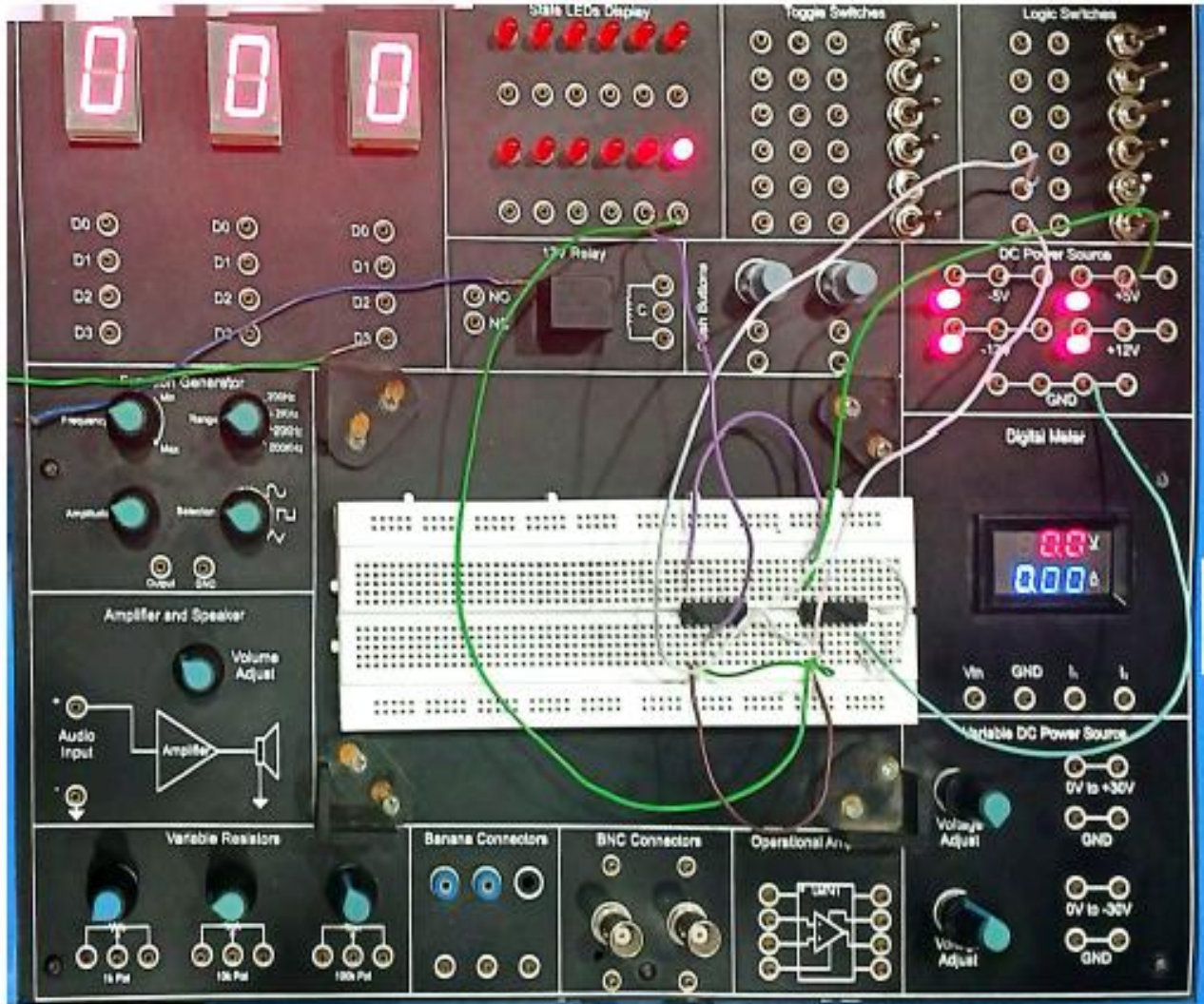
- Switch Q; 0
- Switch W: 1

Third Combination:

- Switch Q; 1
- Switch W: 1

Experiment on Hardware

4: Simple Circuit Implementation

- Circuit shows the implementation of Half Adder using ICs of XOR and AND.

5: Complicated Circuit Implementation