EEE 304 – Digital Electronics Laboratory

July 2022 Level-3 Term-II Section C2

Final Project Demonstration

Water Level Indicator Using 74 Series IC and 7 Segment Display

SUBMITTED BY – GROUP C2.04

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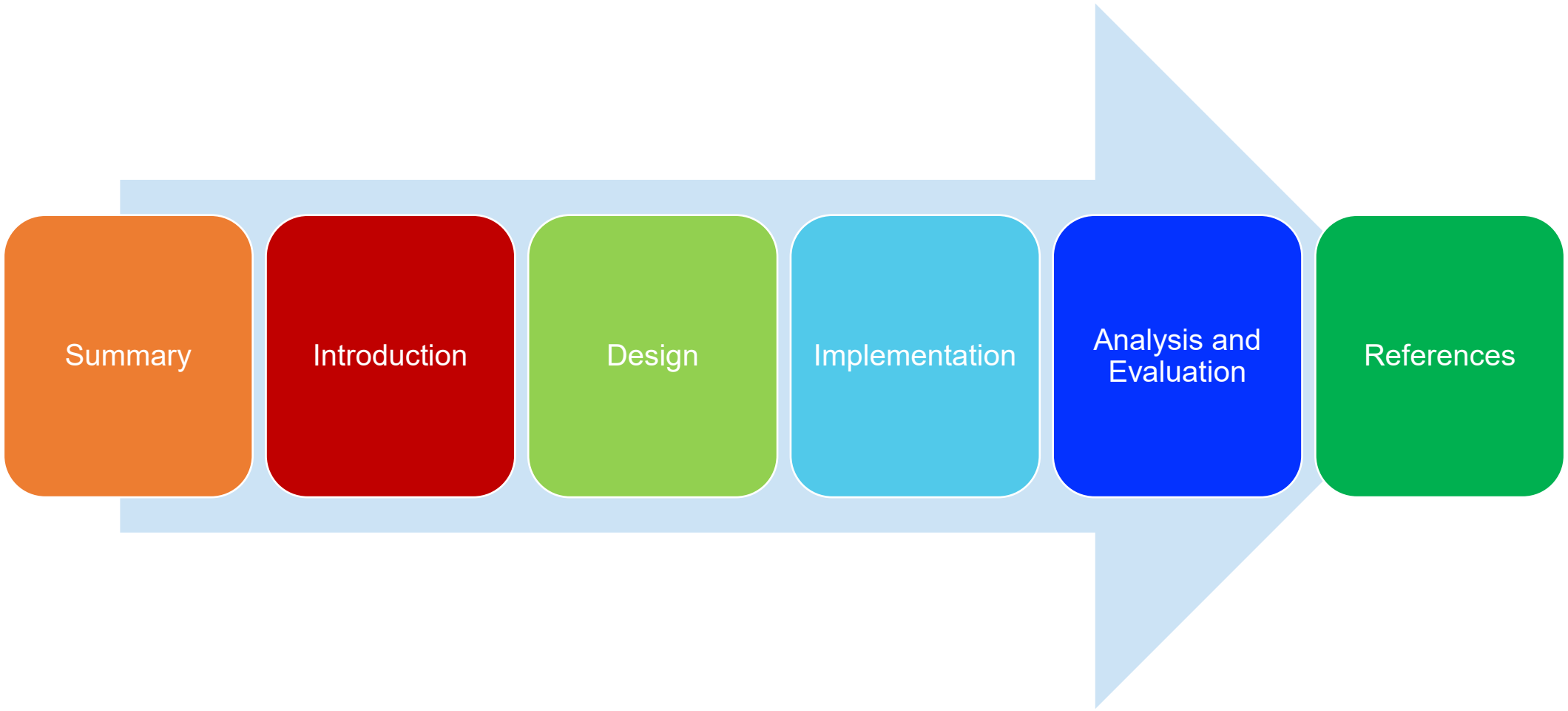
Outline


Summary
Introduction
Design
Implementation
Analysis and Evaluation
References

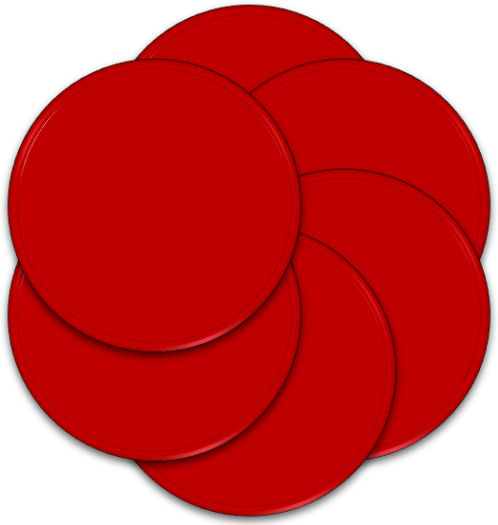
Water Level Indicator Using 74 Series IC and 7 Segment Display

- Summary
- Introduction
- Technical Details of Design
- Demonstration
- Limitations and Practical Considerations
- Reflection on Individual and Teamwork
- Acknowledgement and References

Water Level Indicator Using 74 Series IC and 7 Segment Display

1. Summary

1) Simple mechanism to indicate the level



2)When the water level is empty it shows **E**

3)If the water level is at 5% the transition goes to **L from E**

4)If the water level is at 65% the transition goes to **H from L**

5)If the water level is at 90% the transition goes to **F from H**

6)If the water level is at 100% there is sound of **buzzer.**

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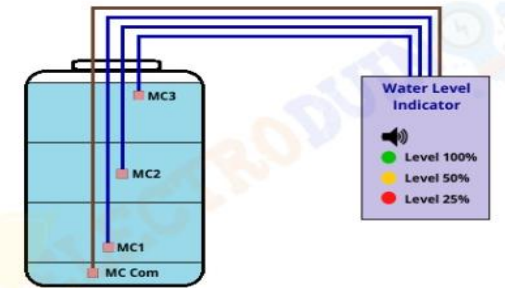
2. Introduction

Designed to deal with the water level problem using basic logic ICs.

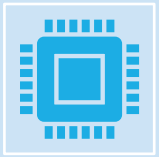
Small in size

Can be used in factories, households , water storage tanks .

Further modification can also be mad it possible as flood indicator.

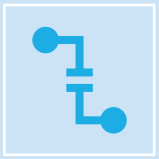


2.1 Complexity Analysis



Can be further modified with automated on-off system .

The water here can be a source of conductance .



If BJTs are used then this characteristics of water will be used to switch on /off these as switches .

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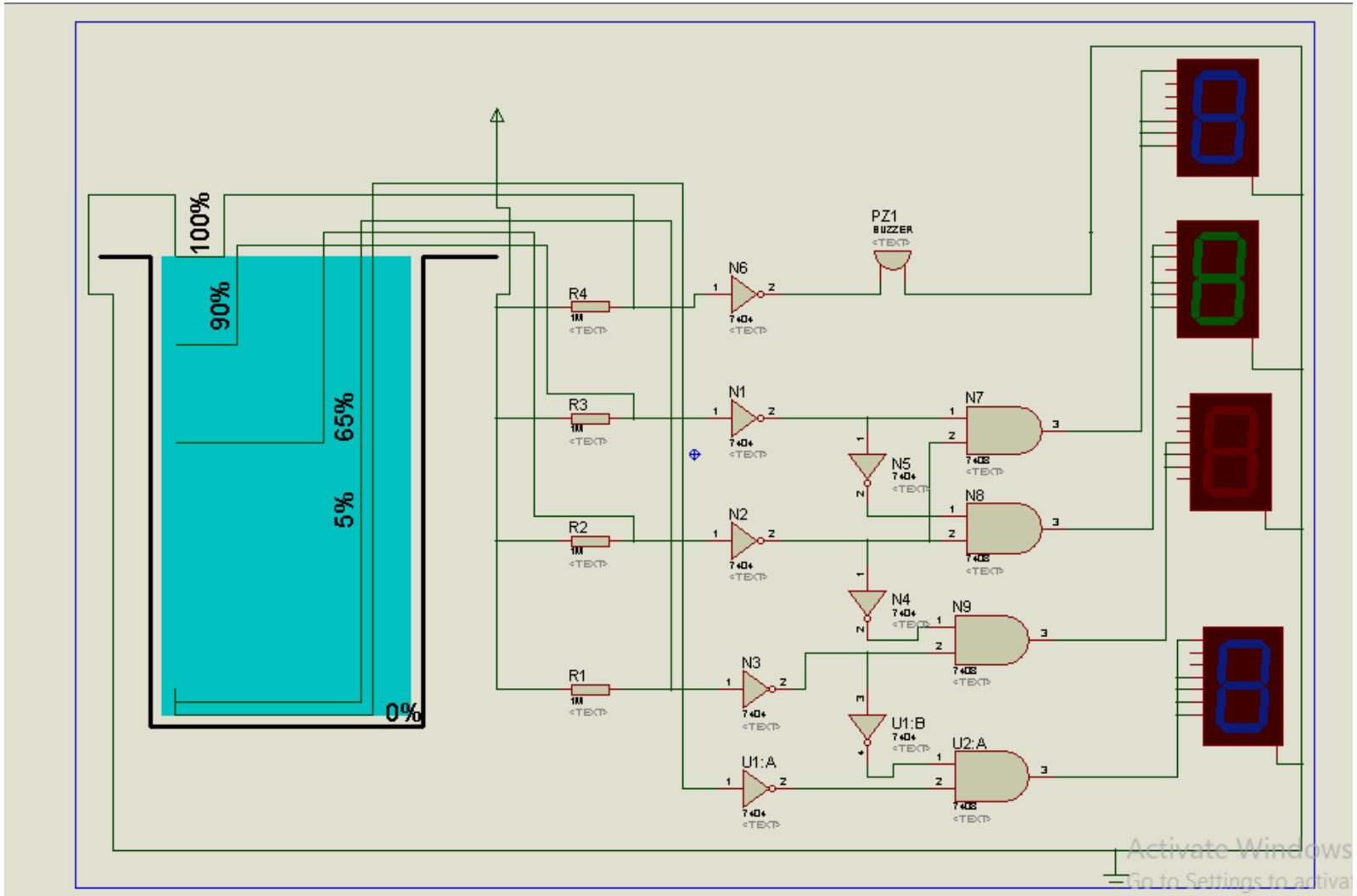
3.1 Design: Circuit Diagram(simulation)



3.2 Design: Methods

Components used :

1) 7404 Ics

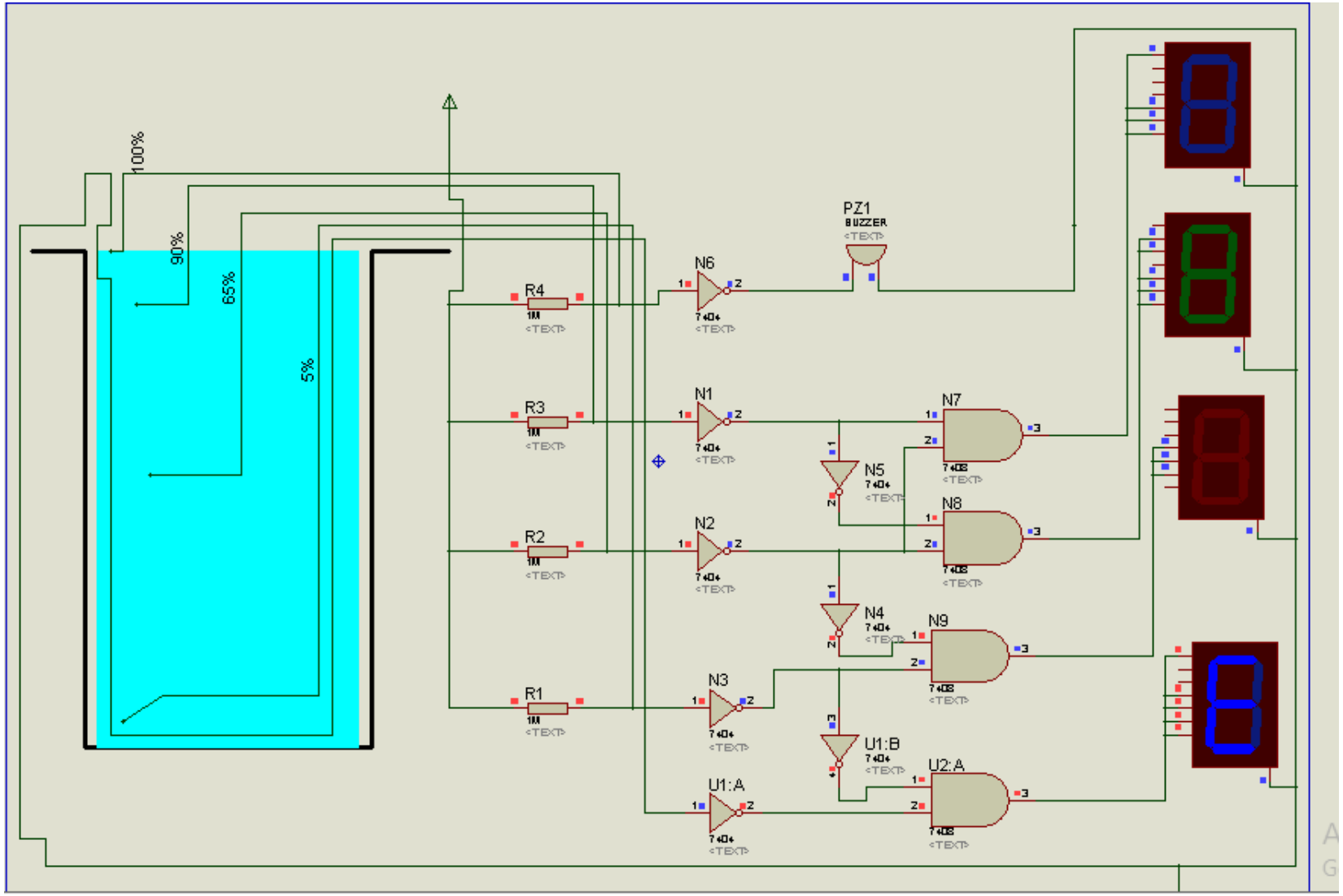
2)7408 ICs

3) Test-tube

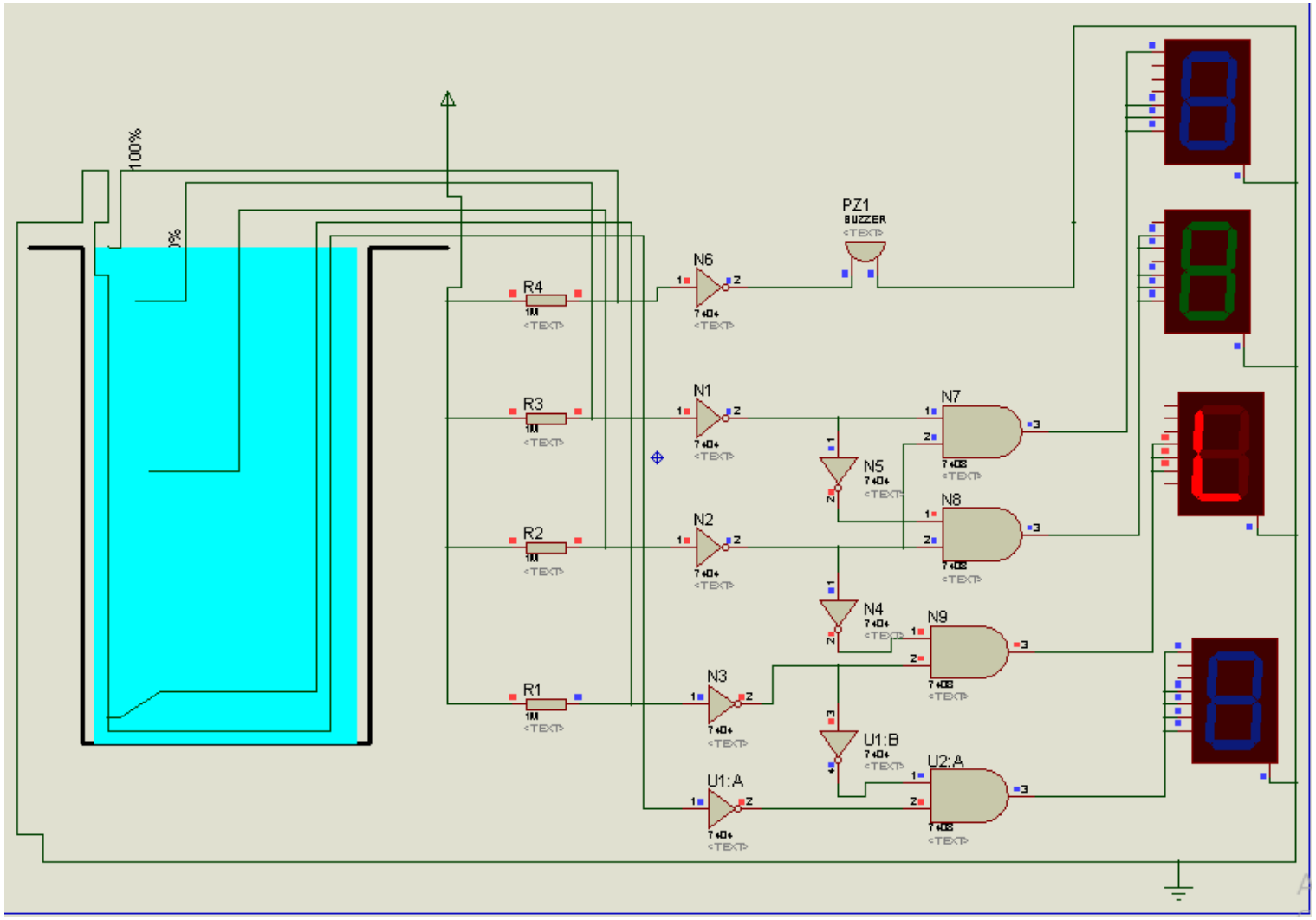
4)Wires

5) Seven segment display.

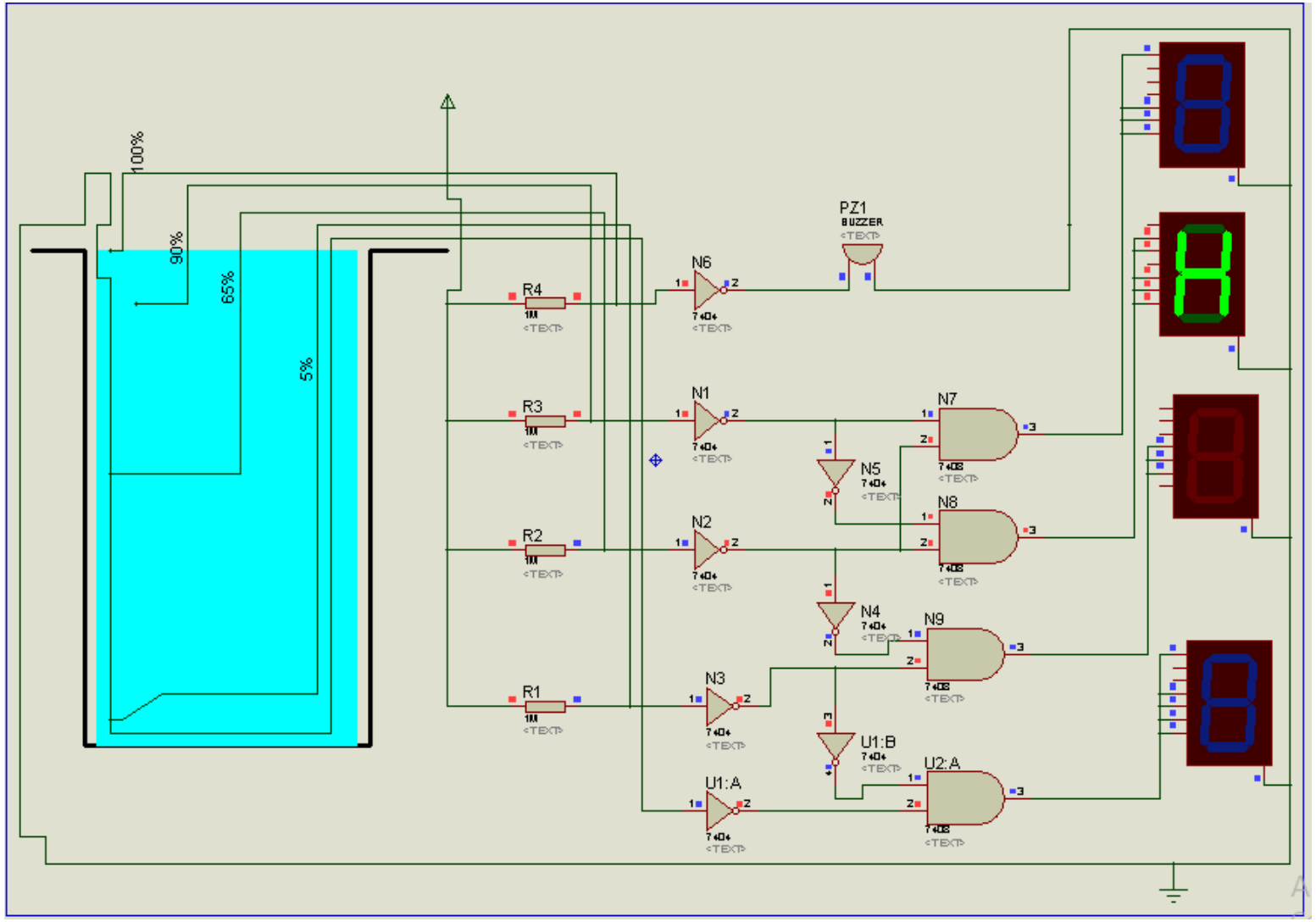
Design: Methods(When Tank Is Empty)



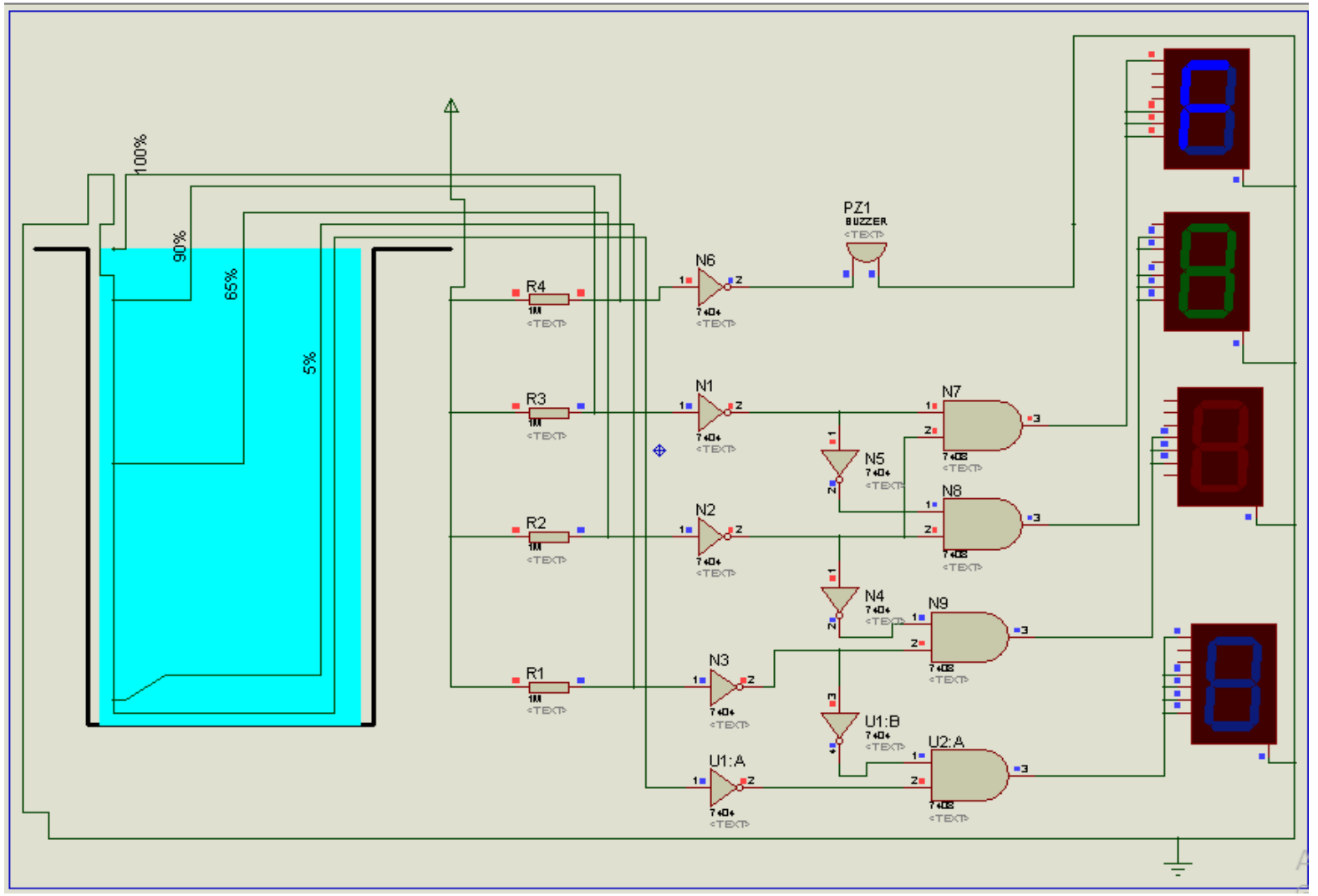
Design: Methods(When Tank Is LOW)



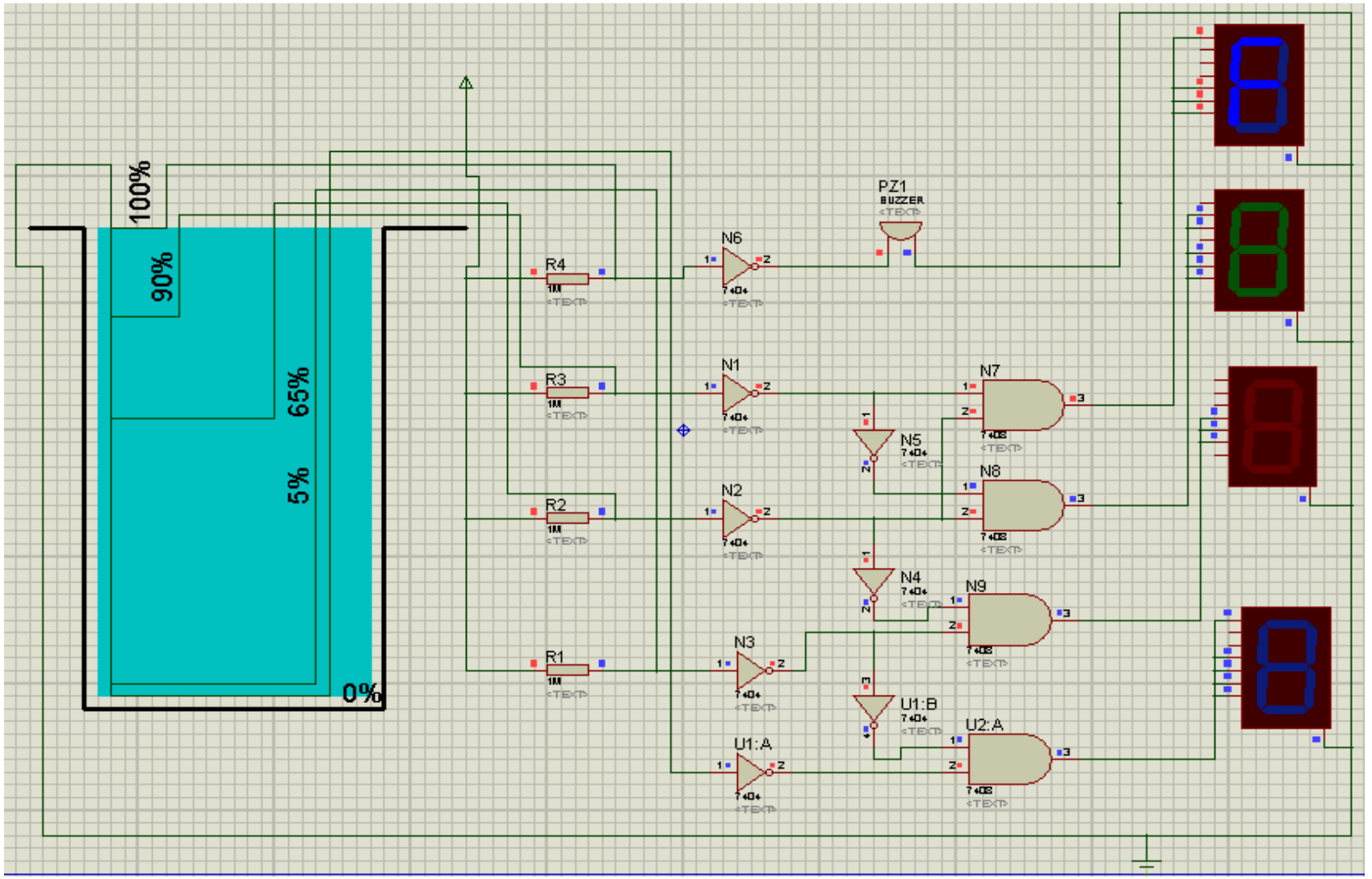
Design: Methods(When Tank Is High)



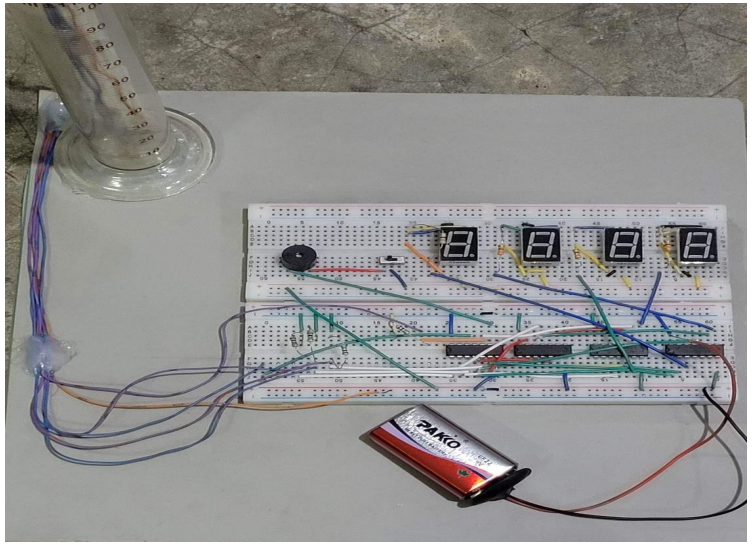
Design:Methods(When Tank Is Full)

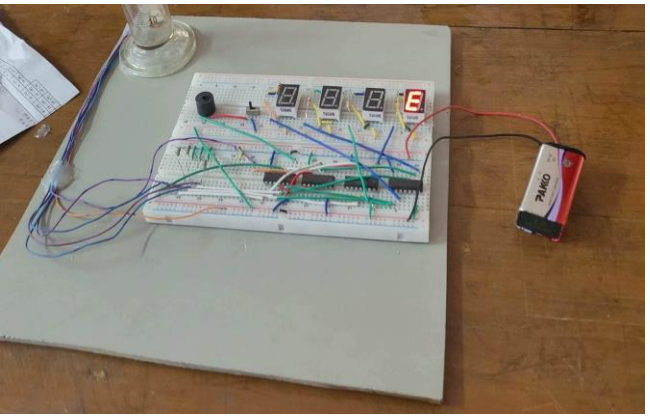


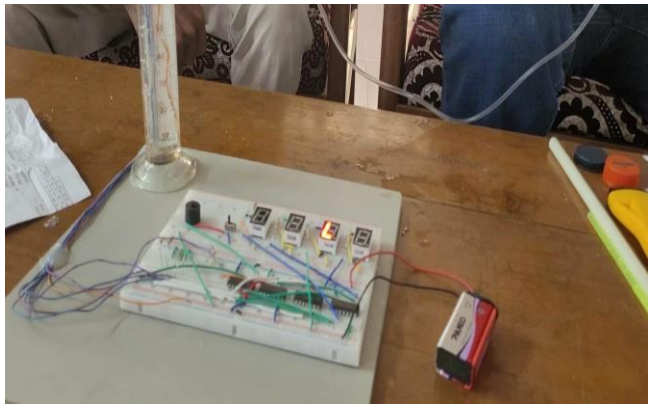
Design: Methods(When Tank Is Overflowed)

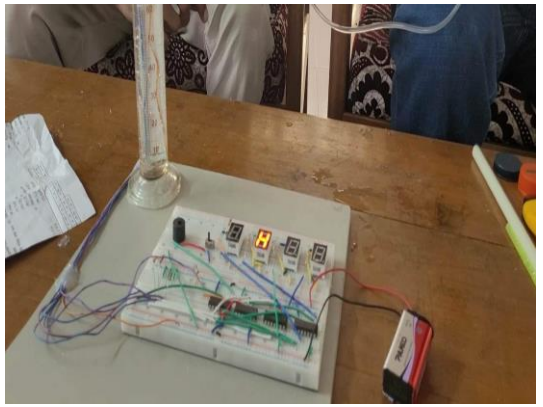


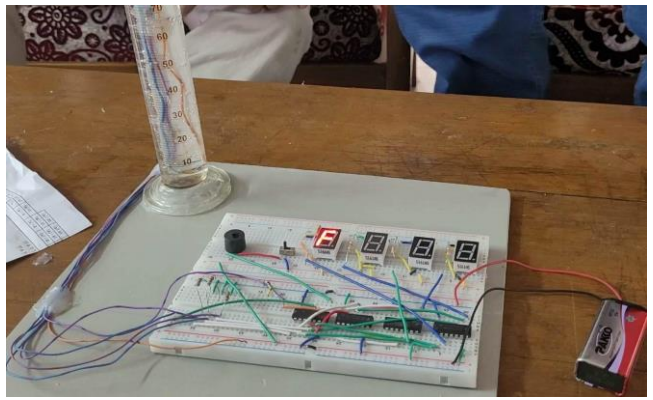
3.4.1 Implementation: Photo Gallery



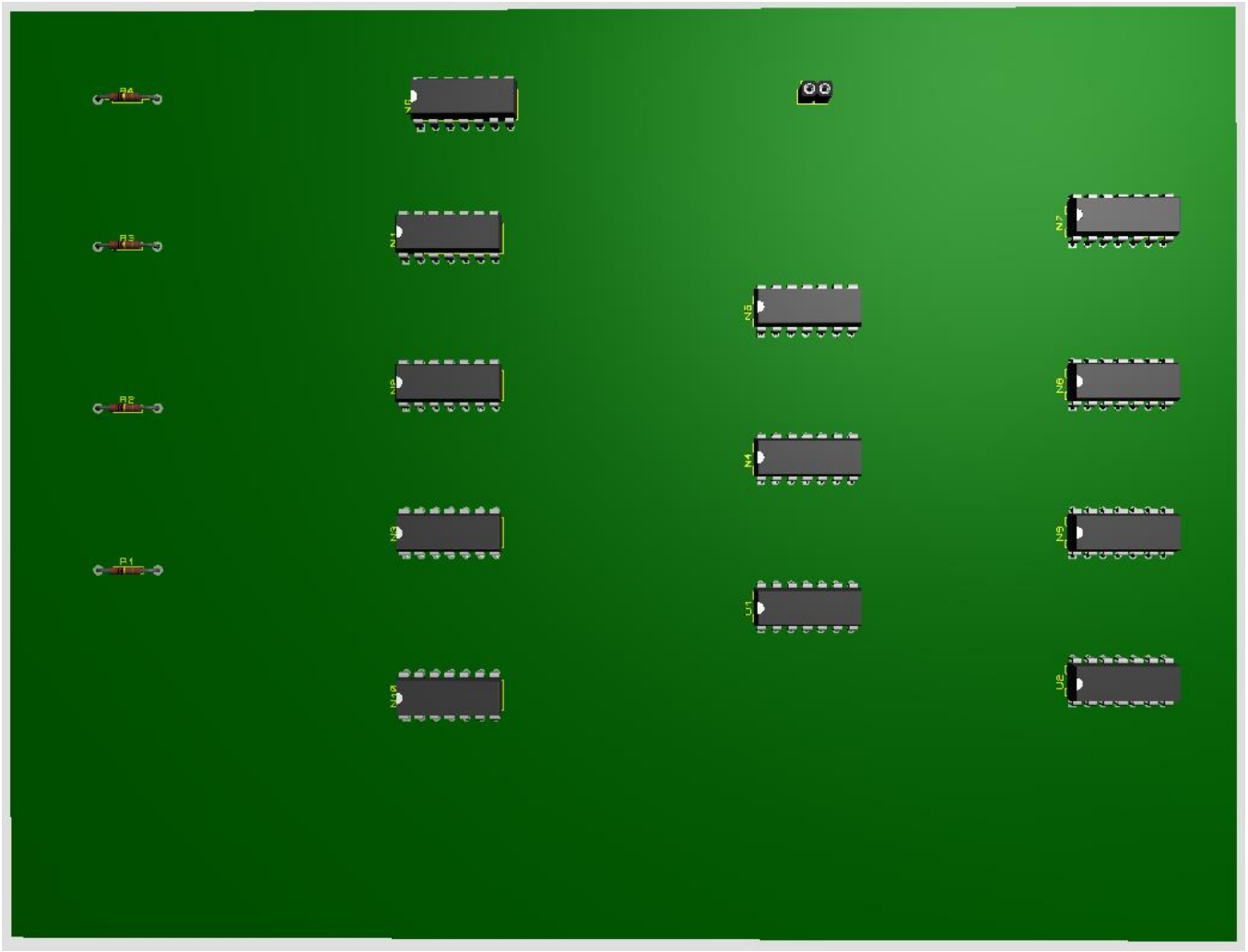






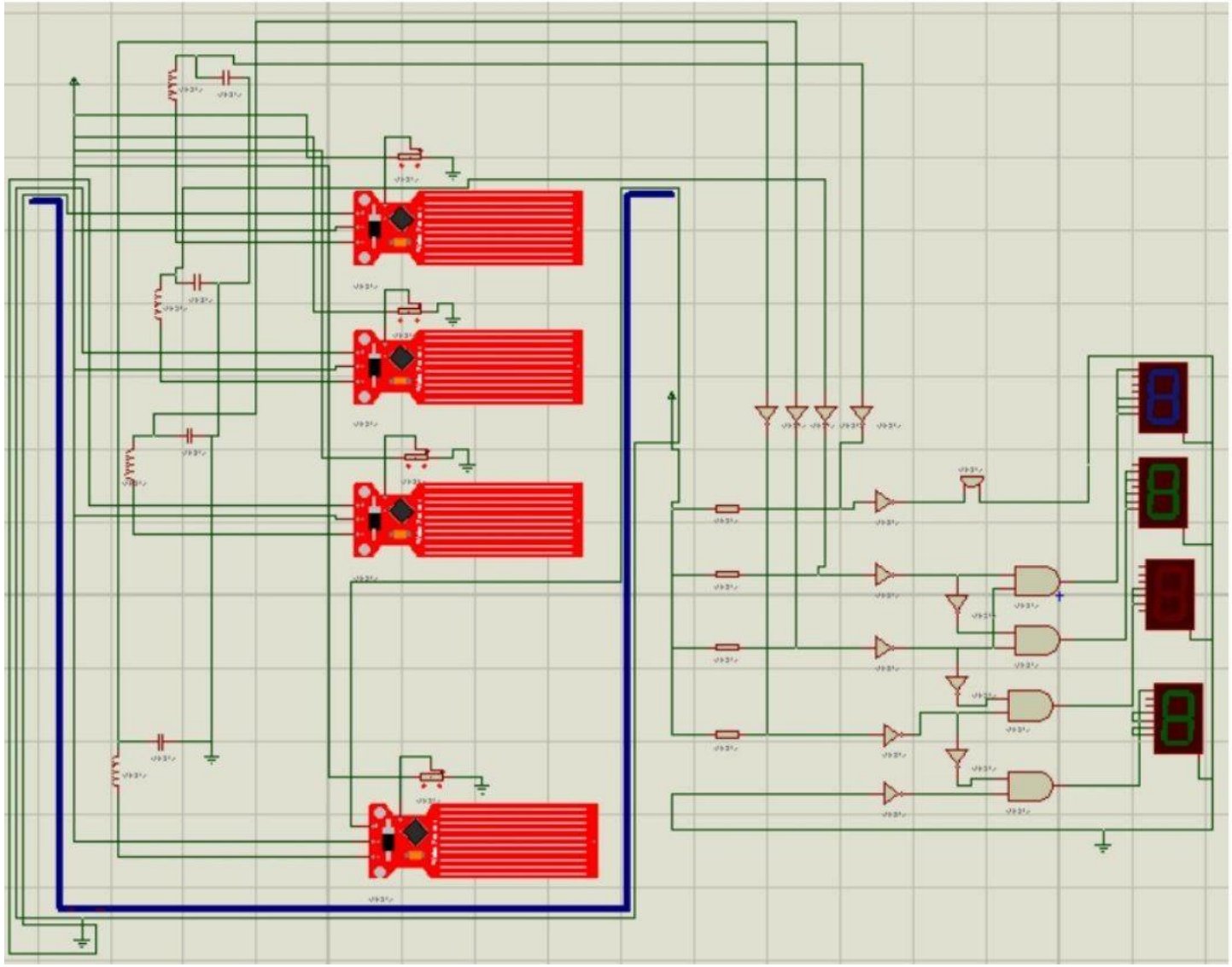


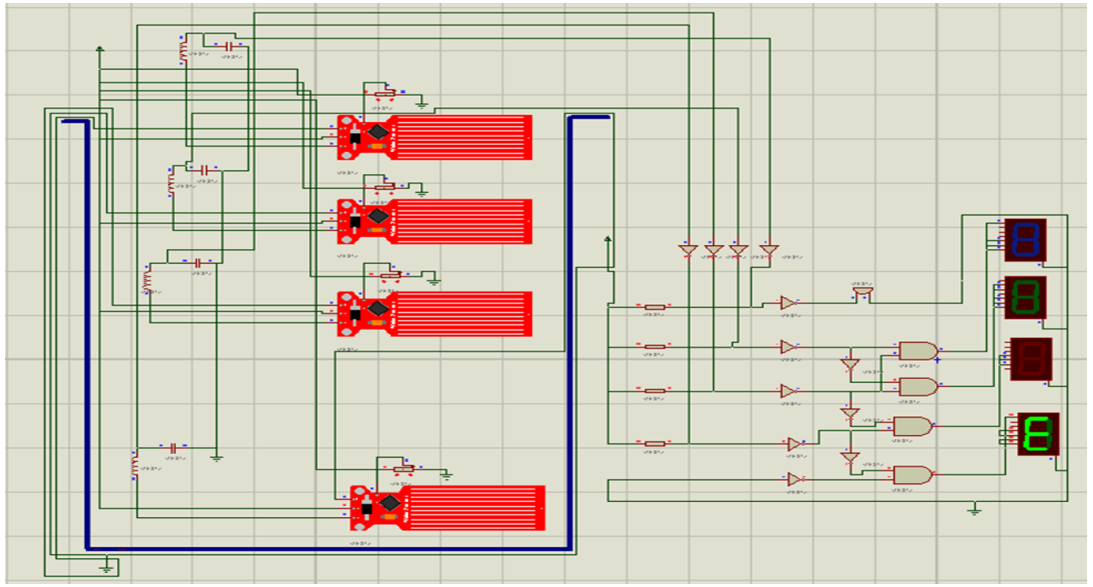
3.4.2 Design: PCB Layout and 3d rendering

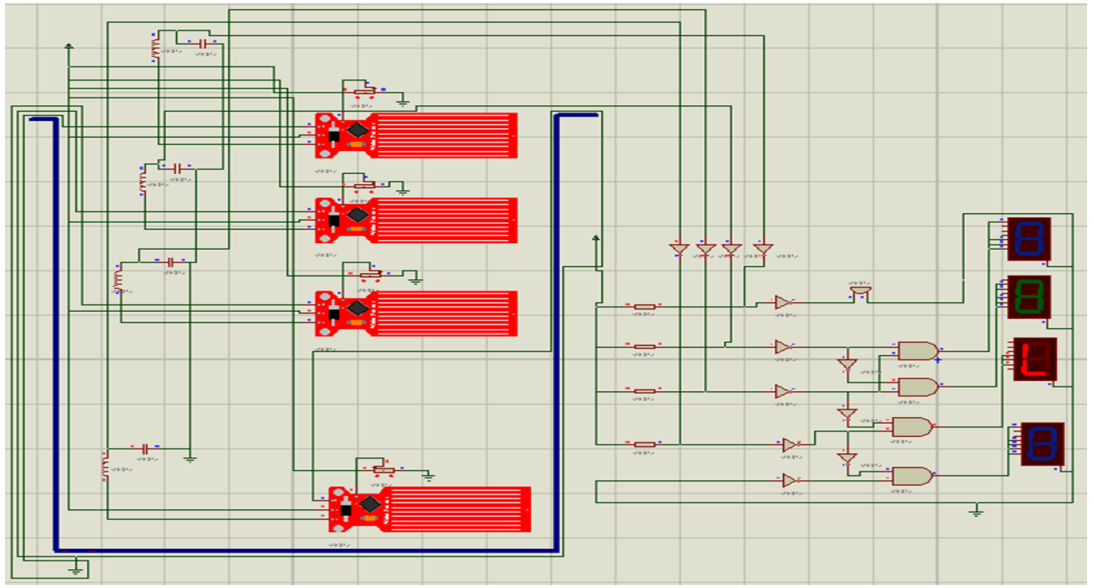


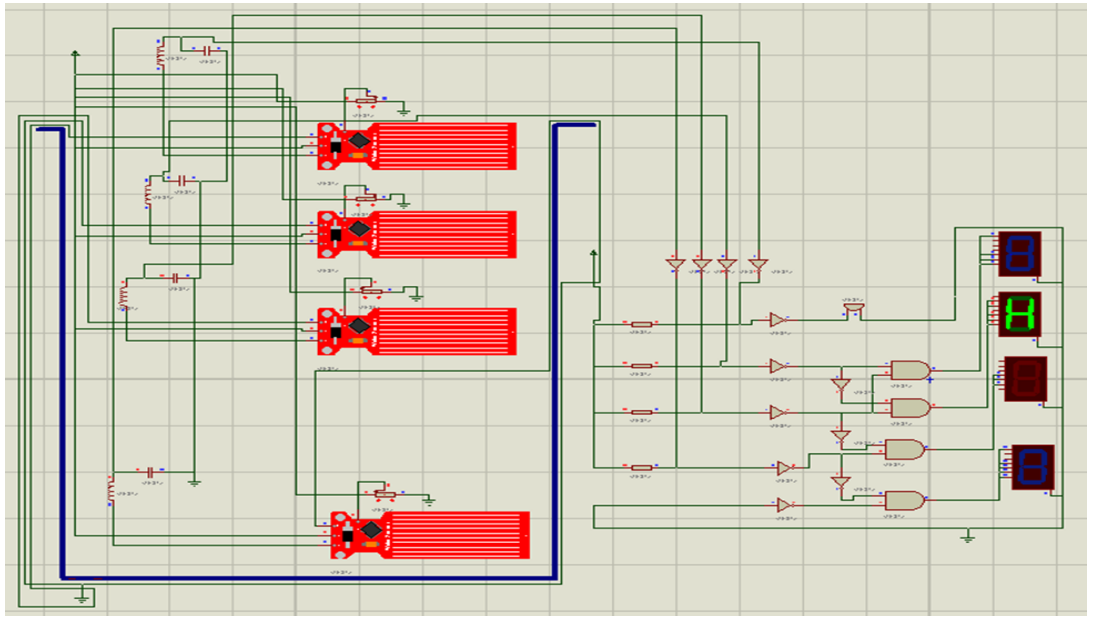
3.5 Simulation Results / Bench Mark

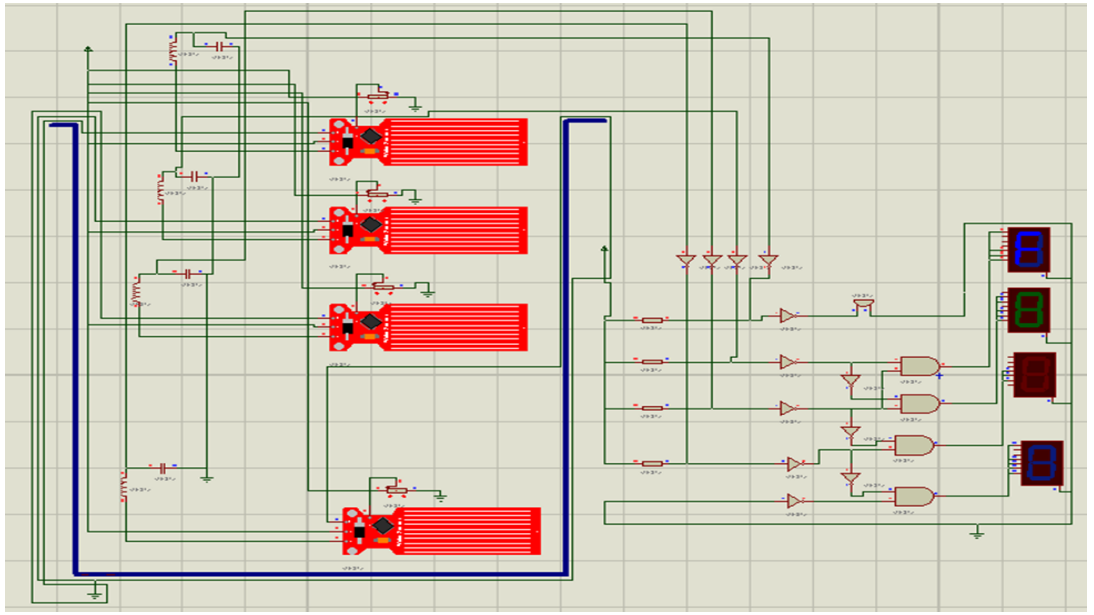
- *Presented by: 1806172*











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Demonstration Video

- https://youtu.be/Qdus7yexIbQ

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4. Limitations and Practical Considerations
4.1Limitations

- Didn't use water level sensor
- It's a miniature version

4.2.1 Practical Considerations: Public Health and Safety

Observing water level in

1)water treatment plants

2)Swimming pools

4.2.2 Practical Considerations: Environment

Observation of water level in:

1)Aquariums

2)Agricultural irrigation system

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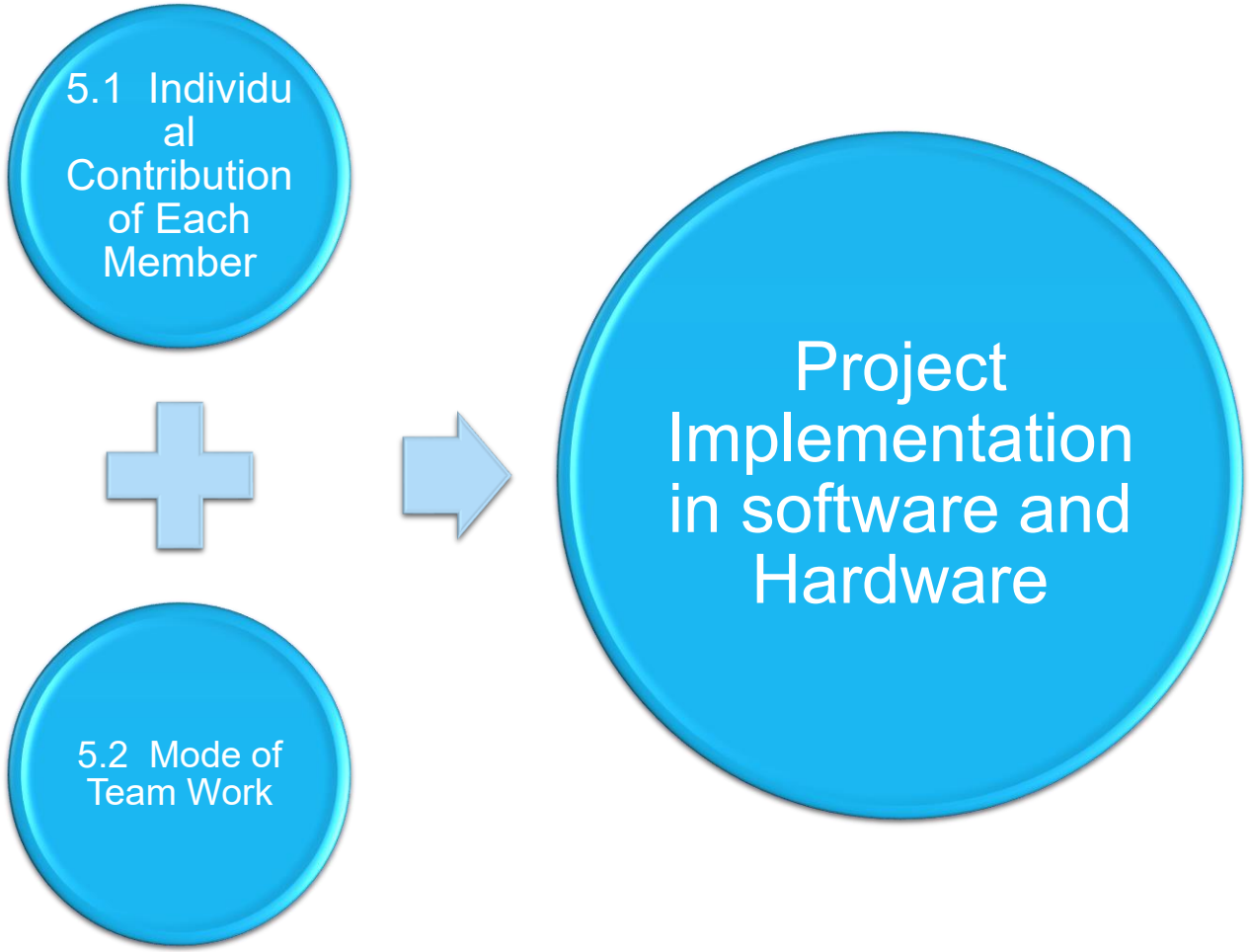
5. Reflection on Individual and Team work



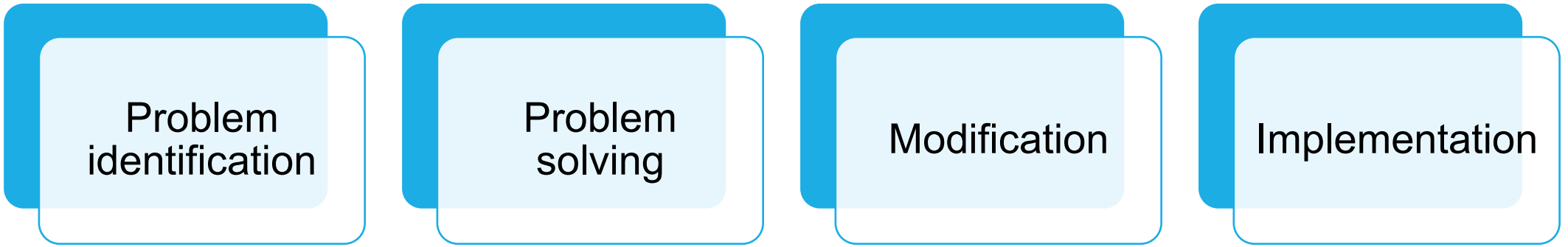
5.1 Individual Contribution of Each Member

Two of us did simulation Proteus & Tinkercad

Everybody was present in circuit implementation

Remaining two added new feature like buzzer

5.2 Mode of team work



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6. References

- **Reference:**

https://www.circuitstoday.com/water-level-controller-using-arduino

https://github.com/iamvishalprasad/Water-Level-Controller-using-8051-Microcontroller