AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

FACULTY OF SCIENCE & TECHNOLOGY

DIGITAL LOGIC AND CIRCUITS LAB

Summer 2022-2023

Section: F
Group Number: 02

Supervised By

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Course Project Title:	**WATER LEVEL INDICATOR WITH ALARM SYSTEM**
Project Group No.	**02**

Submitted By:

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EEE3102 Digital Logic and Circuits LAB

PROJECT PROPOSAL FORM

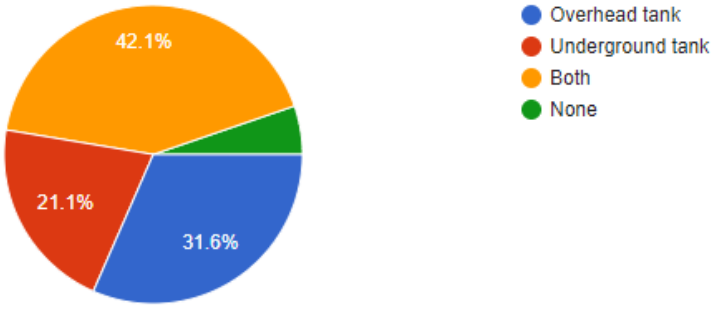
SEMESTER: SUMMER 2022-2023

PROJECT TITLE: WATER LEVEL INDICATOR WITH ALARM SYSTEM

Survey to develop a process for complex engineering problems with a wide range of conflicting requirements (use pie chart):

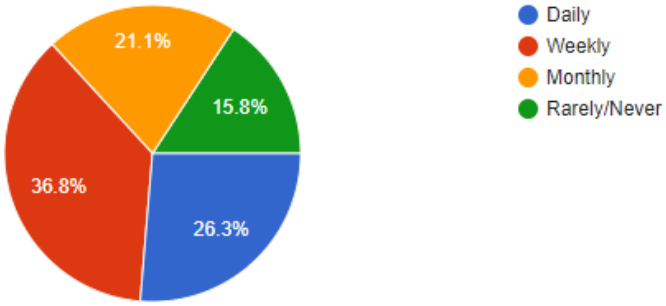
1. What type of water storage system do you use at home?

19 responses



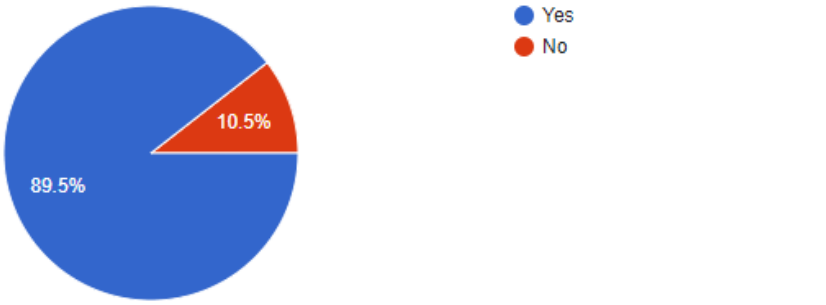
2. How often do you check the water level in your storage system?

19 responses



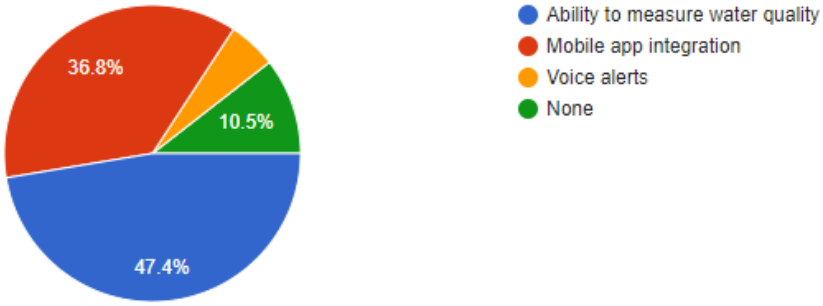
3. Would you be interested in purchasing a low-cost water level indicator and alarm system for your home use?

19 responses



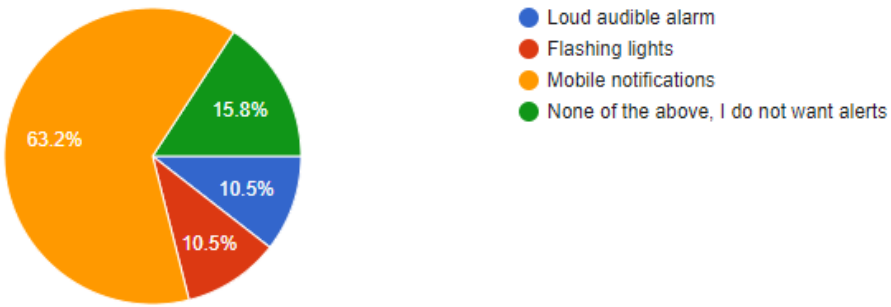
4. What additional features would you like to see in a water level indicator and alarm system?

19 responses



5. How would you prefer to receive alerts from a water level indicator and alarm system?

19 responses



Survey Link: https://forms.gle/nKTyTLNnbXPVWNmn8

Survey Data:
https://docs.google.com/spreadsheets/d/1wpK8gPAUU_6gh0FOzg0ZyuNox1ScSNBVVrVocWaXLEU/edit?usp=sharing

AIMS AND OBJECTIVES OF THE PROJECT:

Project Goals: In present world a big percentage of water wastage because of the water overflow storage tank. According to a study, we waste around 45% of the water because of the storage tank overflow [1]. One drop of water waste can be vary for us. 750 million people around the world lack access to safe water [2]. So, our goal is to develop an affordable water level indicator and alarm system suitable for home use, a mechanism can be designed as follows: When the water level in a storage tank reaches its maximum capacity, nearing overflow, the connection between the bipolar junction transistor (BJT) at the base and the water tank's overflow-level detector is deliberately shortened. Consequently, a speaker connected to the system will alarming an audible warning sound to alert the user of the imminent overflow.

Primary Objective: The primary objective of this project is to construct a water level indicator and alarm system using NOT gate and BJT. The following system that we have developed can indicate the water level in 5 levels. The following levels are:

- Empty-level – No Water in the water storage
- Low-level – Water is up to 20% in the storage
- Medium-level – Water is up to 60% in the storage
- Full-level – Water is the maximum capacity of the storage
- Overflow – Water is going to overflow gives warning

Secondary Objectives: To determine the appropriate components needed to create the water level indicator and alarm system. To ensure the system is reliable and accurate in measuring the water level. To ensure the system is easy to use and operate, even for users with minimal technical knowledge.

EXPERIMENTAL BLOCK DIAGRAM:

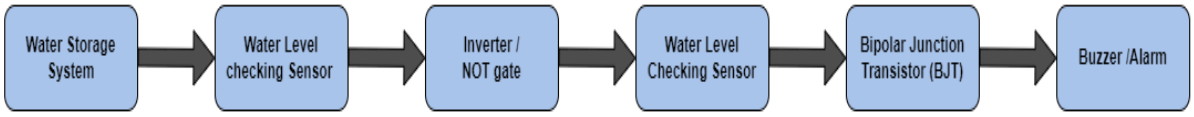


Figure: Basic Experimental Block Diagram of the Proposed Project

PROJECT TIMELINE (GANTT CHART):

Task Name	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Planning						
Research and System Design						
Component Procurement						
Implementation						
System Testing						
Submission						

REFERENCES:

[1] G. Singh, K. Nivedita, S.S. Minz, K. Neelam and D. Prasad "Design of Water Overflow Indicator Alarm and Controller," Springer Link, vol. 556, 24 May 2019, pp. 623 – 629.

[2] J.B. Yuihana, World Health organization (WHO) yearly magazine "Burden of disease from inadequate water, sanitation around the world" Volume 19, 2014, pp 89-90.