

**DEVELOPMENT AND EVALUATION OF WATER FILTRATION SYSTEM
TOWARDS SUSTAINABLE ACCESS TO CLEAN WATER**

**A Thesis Presented to the Faculty of the
College of Communication and Information Technology
President Ramon Magsaysay State University**

**In Partial Fulfilment of the Requirements for the Degree
Bachelor of Science in Computer Science**

**By
Erin Charles B. Ferrer
Franz Matthew E. Uy
Jewel Y. Tulio**


April 2024

Republic of the Philippines
PRESIDENT RAMON MAGSAYSAY STATE UNIVERSITY
(Formerly Ramon Magsaysay Technological University)
 Castillejos Campus
 Castillejos, Zambales




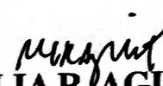
APPROVAL SHEET

The thesis project entitled **"DEVELOPMENT AND EVALUATION OF WATER FILTRATION SYSTEM TOWARDS SUSTAINABLE ACCESS TO CLEAN WATER"** was prepared and submitted by **Erin Charles B. Ferrer, Franz Matthew E. Uy, Jewel Y. Tulio** in partial fulfillment of the course requirements for the degree of **Bachelor of Science in Computer Science** has been examined and recommended for the oral examination.


MICHAEL G. ALBINO, MIT
 Thesis Adviser

Approved by the Panel of Examiners
 with a Rating of 96 %

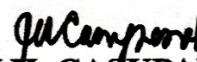

IRATUS GLENN A. CRUZ, LPT, MSCS
 Chair


MARIE CELIA R. AGLIBOT, MSCS
 Member


MICHAEL N. FARIN, MSCS
 Member

Accepted and approved as a requirement for the degree of
BACHELOR OF SCIENCE IN COMPUTER SCIENCE.

April 2024
 Date


IVY H. CASUPANAN, EdD
 Campus Director

ABSTRACT

This study aims to present a new water filtration system using Arduino to filtrate the unfiltered water to a safe filtered drinkable water. Leveraging the power of Arduino technology, a versatile microcontroller platform renowned for its reliability and flexibility, this filtration system offers a comprehensive approach to ensuring safe and potable water for all. The researchers utilized the Agile Prototyping Methodology focusing on evaluating the efficiency of the development process. A survey questionnaire based on ISO 25010 of product quality evaluation system that will be employed to gauge user acceptance of the proposed prototype device and system. Designed for 40 participants chosen through simple random sampling, aims to capture insights into the system's performance. The respondents rated the system excellent in its capability to resolve problems arising from the system functionality, manifested in the highest computed weighted mean value of 4.72 (rank 1) while they found the system very good in providing the correct pH and NTU data of the system, had the lowest weighted mean of 4.20(rank 5). Thus, the proposed water filtration system helps household owners to maintain safety and promote sustainable water sources for their families to drink and use for hand washing. The proposed system functions based on its desired operations in monitoring the water filtration using an Arduino-based device. The respondents evaluated the system as excellent based on functionality, reliability, portability, usability, performance, and maintainability in providing monitoring of water tests. The developed device and system may be used for commercialization considering its positive evaluation from the respondents.