Arduino-Based Wireless Water Tank Level Monitoring and Control System with Alarm

A Capstone Project

Presented to the Faculty of

The Committee of Oral Examiners J.H. Cerilles State College Dumingag Campus

Dumingag, Zamboanga del Sur

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science in Information Technology

by

Nedielyn B. Balacy

Jea-an C. Vega

Glenalyn S. Lambojon

June 2021

ABSTRACT

Water scarcity is one of the major issues that most countries are concerned with. The purpose of this study was to develop a water tank monitoring system, a device that help to monitor and control the water inside the tank. The researcher conducted an interview of the selected household personnel in Dumingag, Zamboanga Del Sur in order to gather information about their concerns and issues in using water tank.

This study focuses on monitoring and controling the water level inside the tank. using ultrasonic sensor. Arduino-based Wireless Water Tank Level Monitoring and Control System with Alarm aimed to improve the manual or time-consuming process of water tank monitoring and control by incorporating alarm and wireless features into the system's design and development, which would help meet people's water needs. The main objectives of the project is to design and develop a system on wireless water tank level monitoring and control with alarm that will serve as device for a household water tank user. The entire process of developing the project followed the prototyping method from planning and analyzing to testing.

Arduino-based Wireless Water Tank Level Monitoring and Control System with Alarm is composed of transceiver area for monitoring and receiver area for controlling the water level in the tank. Each area works according to its code set in Arduino microcontroller. Wireless Water Tank Level would automatically turn on the motor if the tank is almost empty and turn off if the tank is overflowing without manpower. The project was able to monitor and detect the water level through ultrasonic sensor, control the flow of the water using relay module, alarm the household

owner about the water level inside the tank, and status of the water can be seen on the LCD in five different levels.