INCREASING FISH FARMING RATE WITH pH DETECTION

A project synopsis submitted in partial fulfillment of the requirements for the degree of
B. Tech in Computer Science and Engineering

by

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November 20, 2022

CERTIFICATE

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Abstract

Water pH Measurement, abbreviated as WPM, is the effort of attempting to determine the PH level of a water body and to change it according to Fishery Farming's need.

In todays world we have a huge problem of free land. So we have to increase productivity of the system in minimum area. So here our project comes with the more productivity of fishery farming in the minimum requirement of area.

<u>Index Terms</u>

WPM,Voltage and pH

I. INTRODUCTION

A. *Overview: In this project we are maintaining the level of pH in water of fishery tank in order to increase growth of Fishes and decrease the mortality rate.*

B. *Challenges: In large volume of area we need more number of sensors which increases the cost of the project.*

C. *Motivation:* In todays world we have a huge problem of free land. So we have to increase productivity of the system in minimum area. So here our project comes with the more productivity of fishery farming in the minimum requirement of area.

   E. *Objective:* Water pH Measurement, abbreviated as WPM, is the effort of attempting to determine the PH level of a water body and to change it according to Fishery Farming's need.

II. REQUIREMENT ANALYSIS

A. *Functional Requirement*
- The most important goal is to enable Arduino to sense the pH level and turbidity of the water tank .
- After detecting the pH level we have to send the report to the cpmputer or mobile.
- With the control of mobile or computer we can easily connect the tank with lime water tank or fresh water in order to simultaneously maintain the pH level of the fishery tank.
- Understanding the growth of the fishery farming feedback from database report of the pH data.

B. *System Requirement*

   1) Arduino circuit

   2) pH probe

   3) pH circuit

   4) BND connector

   5) BNC connector

   6) Power Indicator

   7) Battery

   8) Motor

C. Software Requirement Specifications (SRS)

  1) Arduino IDE: For writing the required code in order to run the system efficiently.

III. FEASIBILITY ANALYSIS

A. Scheduling Feasibility

Phase	Task	Duration (Days)	Strat date	Finish date	Semester
Initiation	Selection	7	18-09-2022	25-9-2022	5th
	Planning	7	25-09-2022	02-10-2022	5th
Analysis	Requirements Gathering	5	02-10-2022	07-10-2022	5th
	Requirements Analysis	9	16-10-2022	25-10-2022	5th
Implementation	Coding	40	26-10-2022	06-12-2022	5th
	Testing and Debugging	10	07-12-22	27-12-2022	5th
	Documentation	10	27-12-2022	07-01-2033	5th

B. Financial Feasibility

  Costs which will be spend by the team and project mentor for complete the project.

IV. METHODOLOGY

D. : We are sensing the pH of the fishery tank and sending it to the Arduino, which controls the pH level of the tank by enabling a motor which connects to a base solution tank. When the pH level is below 7 it connects the tank with lime water. Turbidity sensor connects to the Arduino and Arduino connects with a motor which is connected to a fresh water tank when the turbidity of the water increases then Arduino enables fresh water tank motor.

A. Algorithm

  1) Measure the pH of water
  2) Measure the turbidity of water
  3) According to requirement control the pH and turbidity by Arduino .

  Mathematical Expression
  (For the usage of voltage to identify the pH)
  1. Millivolt=volt*1024
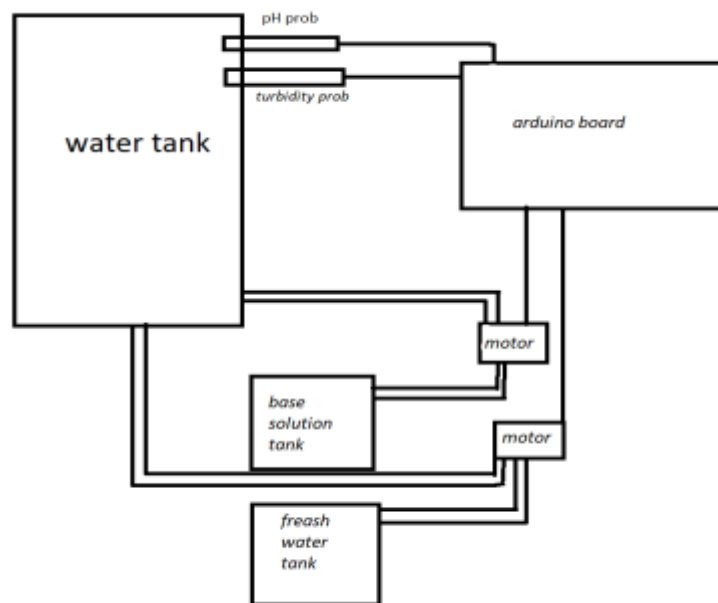 *2. pHvalue=3.5*millivolt*

Data Flow Diagram

Figure 1: Example of Use Case Diagram

<u>Links</u>

1. https://www.javatpoint.com/arduino-coding-basics
2. https://create.arduino.cc/projecthub/Hack-star-Arduino/learn-arduino-port-manipulation-2022-wokwi-systems-simulat-10f9af
3. simplilearn.com/learn-iot-basics-skillup