**Project report**

Automatic Aquarium Monitoring System

Bachelor of Technology

**A picture containing text, room, gambling house, scene

Description automatically generated**

Department of Computer Science and Engineering

Graphic Era Deemed University

Dehradun

2021 – 2022

**Submitted by:**

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**Declaration**

I hereby declare that this project entitled “**Automatic Aquarium Monitoring System**” submitted by me to MR. DEVESH PRATAP SINGH as Mini Project for my 3rd semester in Computer Science and Engineering in **Graphic Era Deemed University, Dehradun** during the academic year 2021-2022 is a bona fide project work carried out by me under the guidance of MR. PIYUSH AGARWAL.

Dr. Devesh Pratap Singh

HOD (Computer Science)

**ACKNOWLEDGEMENT**

Here by I am submitting the project report on “Automatic Aquarium monitoring system” as per the arrangement of Graphic Era Deemed University, Dehradun.

I would like to express our sincere gratitude to Mr. Piyush Agarwal, Professor of Internet of Things, for providing a congenial environment to work in and carry out our project.

here I am thankful to all the faculty members of the Department of Computer Science and Technology, friends and our parents for their constant encouragement, support and help throughout the period of project conduction

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**Introduction**

With the continuously growth of social resources, the number of devices exploiting the concept of Internet of Things is also increasing exponentially.

Presently a huge number of people keep fishes as pets which ought to be dedicatedly taken care of. An adverse environment can have an effect the life expectancy of fish and may even result in their death.

The purpose of this system is to monitor the water level in an aquarium as well as to provide alerts about the increasing water level; therefore, Buzzer, LEDs and water level sensing module are used. The Arduino IDE platform is used to display the results in real time, achieving the purpose of remote network monitoring.

**WATER LEVEL MONITOTING SYSTEM**

Aim: To detect the water level with the help of Arduino and a water sensor.

THEORY: This set up will show three different water levels – low, medium and high. With the help of LED’s - A white LED will glow when the water level is low, blue will glow indicating medium depth of water, green for when the water level is high, also, a buzzer for indicating that the tank is full and a pump for when there is no water in the tank.

COMPONENTS:

**HARDWARE:**

1. Arduino board
2. Breadboard
3. LED’s (Red, Yellow, Green)
4. Buzzer
5. Jumper wires
6. Water level sensor
7. 220-ohm resistors – 3

**SOFTWARE:** Arduino IDE

PIN Diagram:

Graphical user interface, application

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CODE:

int level;

const int analog\_0=0;

int l1=13;

int l2=12;

int l3=11;

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

pinMode(l1,OUTPUT);

pinMode(l2,OUTPUT);

pinMode(l3,OUTPUT);

pinMode(8,OUTPUT);

}

void loop() {

// put your main code here, to run repeatedly:

level=analogRead(analog\_0);

Serial.println(level);

if(level>=0&&level<300)

{Serial.println("Water level -Low");

digitalWrite(l1, HIGH);

digitalWrite(l2, LOW);

digitalWrite(l3, LOW);

digitalWrite(8, LOW);

}

else if(level>300&&level<600)

{

digitalWrite(l1, LOW);

digitalWrite(l2, HIGH);

digitalWrite(l3, LOW);

Serial.println("Water level -Medium");

digitalWrite(8, LOW);

}

else if(level>600&&level<800)

{

digitalWrite(l1, LOW);

digitalWrite(l2, LOW);

digitalWrite(l3, HIGH);

Serial.println("Water level -High");

digitalWrite(8, HIGH);

}

}

**Applications**

Some applications of water level sensor are:

1. **Dams:** Water level sensor can be used in dams to keep a check of the water level so that the water stored in dam is always as per the safety requirements.
2. **Agriculture:** Some crops require standing water; the water sensor can be used by farmers in fields.
3. **Aquarium automation:** To check the water level as per the requirement of the fishes.

**Bibliography**

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