
Project Synopsis

Automatic Fish Care System

Team

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Domain

Home Automation System

Problem Statement

To construct Automatic Fish Care System using Arduino circuit board and by using 4 sensor modules.

Literature Survey

1. Introduction

Do you have a fish at home? You occasionally forget to feed and forget to care about your fish? This is the project that keeps track of your fish and it's live atmospheric conditions to make sure it is being fed on time and to make sure it's health is good.

Automated pet care system will help their owner to take care of their pets while they are not at home. Whether owner is away from home or simply would like one less chore to worry about, owner can feel secure that the pet will be cared and fed on time and every time. This built will automatically dispense predefined food at exact timings depending on the owner's choice.

Our project is exclusive for making automatic care system for a fish.

This includes automatic food dispenser and has some sensors. These sensors are used to keep track of the atmospheric conditions of the tank like temperature, water level, etc. Because, for a quality and healthy growth of any fish, the water should be clean and hygienic with balanced temperature, water level and light conditions. After measuring the values we will display these values on an LCD display, so that the owner can easily keep track of live conditions of the tank.

2. Required Components

The components required are:-

- 1)Arduino UNO board
- 2)Fish and a fish tank
- 3)Servo motor
- 4)Temperature sensor (DS18B20 temperature module)
- 5)Water level sensor
- 6)Light sensor (BH1750 light intensity module)
- 7)LCD display
- 8)Battery
- 9)Breadboard
- 10)Potentiometer
- 11)Jumper Wires
- 12)Fish food
- 13)Empty bottle
- 14)Hot glue
- 15) Cardboards
- 16) Power cable

3. Project Explanation

This project is about constructing an Automated care system for a fish. we have split the project equally among 3 of us to make it easier in doing the project. There are 5 main parts used in this project including 3 sensors.

Those main parts are 1)Light intensity sensor

2)water level sensor

3)temperature sensor

4)servo motor

5)LCD display

1)Light intensity sensor:-

This sensor measures the intensity of light in flux present around the fish tank. This has 5 pins namely VCC,GND,SCL,SDA,ADDR.

2)Water Level Sensor:-

This sensor is dipped in water present in the tank and used to measure the water level in the tank time to time. This also has 3 main pins to be connected namely VCC,GND,DA.

3)Temperature sensor module:-

This module is dipped in the water to measure the temperature of water time to time. This mainly has 3 pins to be connected namely VCC,GND,DA

4)Servo motor:-

There is a bottle attached to the servo motor which contains food to be fed.

This is designed such that it oscillates 90 degrees every 12 hours so that the food in the bottle is fell down into the fish tank in appropriate amounts. This also has 3 pins. VCC,GND,DA.

5)LCD display:-

After measuring the outputs obtained using these 3 sensors, these are displayed using the LCD 16 x 2 display. These values give a clear cut idea for the user about the atmospheric conditions of the fish and the tank. This has 16 pins. This has to be connected with a voltage regulator to calibrate the brightness of the display.

4. Application

1)The basic services of our proposed fish care system are food dispenser,

Temperature controller and water level checker etc..

2)This architecture can be scalable further to use this idea for

Other pets like dog, cat etc..

3)We can further develop this to design IOT health care network which is

one of the elements of IOT healthcare.

4) We can add a WIFI module and control the system depending on the requirements of the pet from our mobile device.

5) People who maintain large number of fishes in aquarium store need to take care of different varieties and wide number of fishes. If he builds this system around tanks in the store, he doesn't need to keep track of each fish in the

store.

6) This is the best solution for the owners who forget to feed their pet occasionally or who don't want to spend much time taking care of their pets at home.

Thank You