SYNOPSIS

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Project Title: Fins and Things - An IoT Based Mini Aquarium System

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Abstract

Water quality plays an important factor in the breeding process of a fish. The aquarium system on the market today is an ordinary system with limited features. For fish monitoring, researchers are currently working on micro-bubble aeration technology.

This paper proposes the IoT enabled system called “Fins And Things” that utilises various sensors to drive the actuators in real time. The main focus is to implement a mini-aquarium system that is automated, both in terms of lighting and monitoring various physic-chemical parameters using sensors such as LDR(Light Dependent Resistor),Water level and DS18B20(water temperature). These parameters are further used to actuate water heater, fan, water pump and light on accordance with threshold. Further fish feeding mechanism is implemented using servo motor.

Our solution lets the user to quickly deploy intelligent control for various water conditions. Aquarium hobbyists can get to know about their pet fish remotely by transferring the data from sensors to Arduino IoT Cloud application. Therefore, it monitors water conditions closely and improve the water quality for the mini aquarium tanks.

Specific Contribution

- Used DS18B20 and LDR to detect the temperature and light intensity within the fish tank.
- Heater actuation – To be turned on if temperature is below threshold.
- Arduino IoT Cloud Integration and dashboard visualization.

Specific Learning

- Cloud integration with data from sensors .
- Actuate the system with respect to threshold .

Technical Limitations & Ethical Challenges faced

- Internet connectivity for cloud.
- Power consumption for actuators.

Keywords: *Arduino IoT Cloud, DS18B20*

Name & Signature of the Student **Signature of Guide**

Date :