CSE 328

Internet of Things

Project Proposal

Smart Aquarium Monitoring and Control System

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Title of the Project:

Smart Aquarium Monitoring and Control System

Brief Description of the Project Objectives and Scope:

This project aims to develop a system that monitors the temperature, pH level and water level of an aquarium and automatically controls the pumps. The system is designed to monitor the health of fish and optimize the aquarium environment. The scope of the project includes sensor integration, data acquisition, development of automated control algorithms and the creation of a user interface.

Proposed Methodology and Approach:

1) Sensor Selection and Integration: Suitable sensors will be selected and integrated into the system to monitor temperature, pH level and water level.
2) Data Collection and Processing: The data collected from the sensors will be transmitted to the microcontroller for processing and analysis.
3) Development of Automatic Control Algorithms: Automatic control algorithms will be developed to ensure that the specified parameters remain within the desired December.
4) User Interface Design: A mobile application or web interface will be designed to allow users to monitor the aquarium condition and make the necessary interventions.

List of Required Hardware and Software Resources:

i) Hardware:
   (a) ESP32 microcontroller
   (b) Temperature sensor
   (c) pH sensor
   (d) Water level sensor
   (e) Water pumps (if applicable)
   (f) Power supply

ii) Software:
   (a) Arduino IDE
   (b) User Interface (HTML, CSS, JS)

GitHub Repository Link: https://github.com/Mesen1100/Internet-of-Things