

# SMART AQUARIUM

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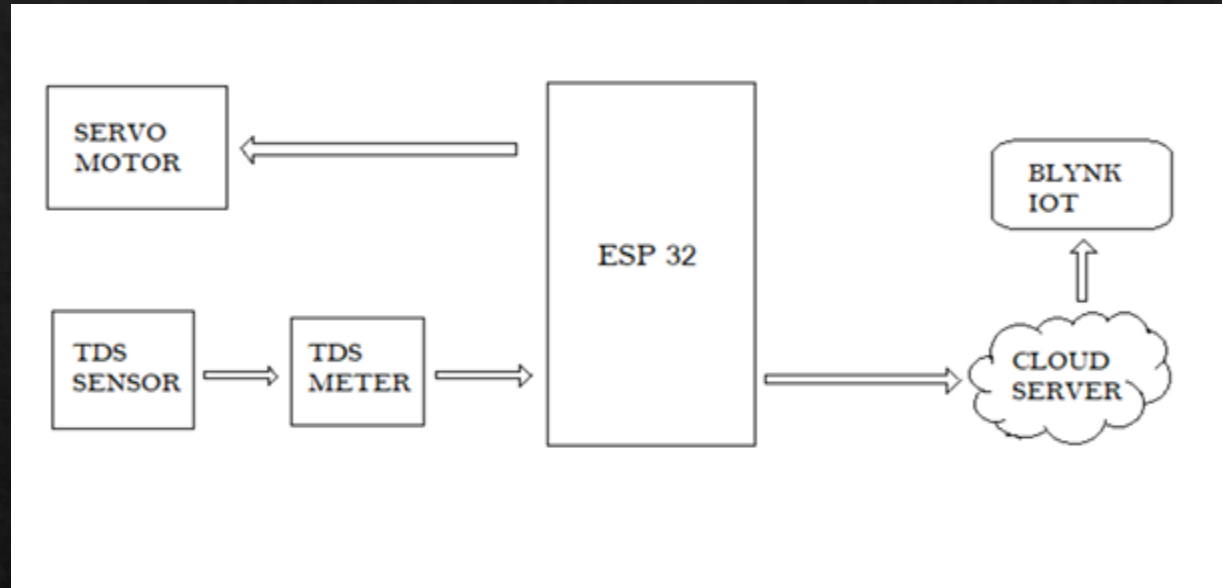
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# INTRODUCTION

- ❑ The project introduces a comprehensive solution poised to transform the landscape of aquarium maintenance amidst the growing trend of home fishkeeping.
- ❑ Our system is equipped with real-time sensor to monitor the vital parameter water pH, while also incorporating an intelligent feeding system.
- ❑ This innovative approach, integrated within an Internet of Things (IoT) framework, offers remote monitoring capabilities and delivers instant updates via a dedicated mobile application, aiming to streamline maintenance processes and ensure optimal conditions for pet fish.

# BLOCK DIAGRAM



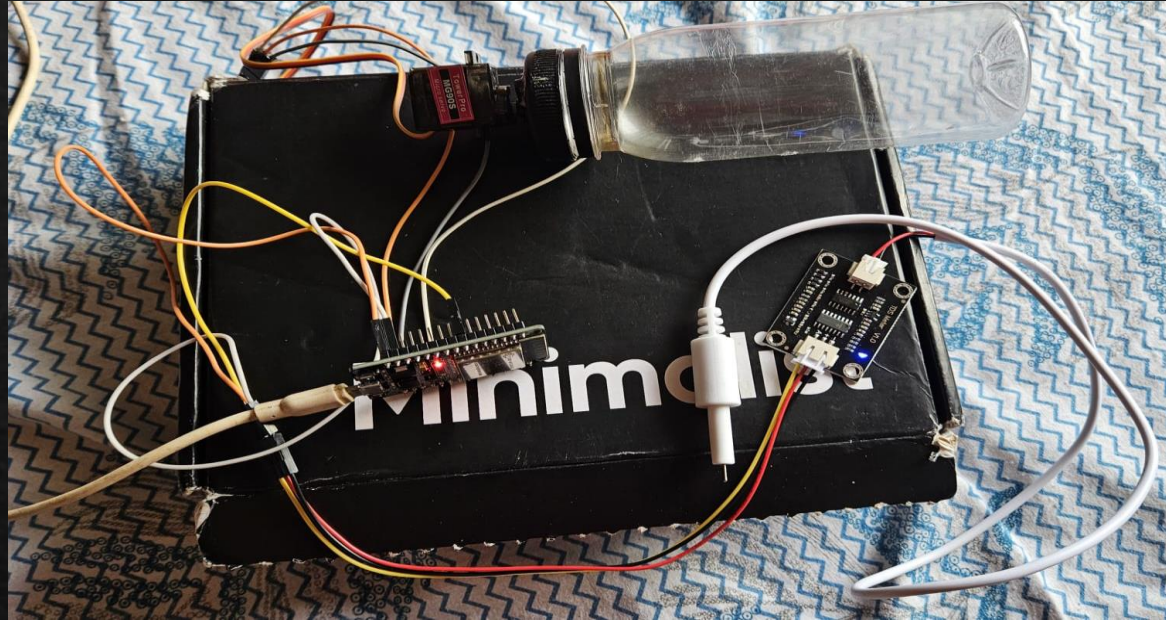
The Block diagram for the Smart Aquarium project has esp32 microcontroller as the main unit which is responsible for data acquisition, processing, and communication. The Tds sensor provide real-time data on water quality and environmental conditions. Servo motors receive commands from the ESP32 microcontroller to perform specific actions based on predefined schedules or user inputs. Through Blynk app users can monitor real-time data, set parameters, schedule feeding times, and adjust other settings as needed.



# WORKING

- ❑ The smart aquarium project operates based on the following sequence of actions:
- ❑ The TDS sensor continuously measures the total dissolved solids (TDS) in the aquarium water. The ESP32 runs a control algorithm programmed to maintain optimal TDS levels in the aquarium water.
- ❑ At the scheduled feeding times, the ESP32 triggers the servo motor connected to the feeder mechanism. The servo motor rotates to dispense the predetermined amount of fish food into the aquarium.
- ❑ The system is programmed to send notifications to the user's mobile device in case if there is excessively high or low TDS levels. This allows users to take immediate action of issues and ensure the well being of the aquatic environment.

# RESULTS



The Smart Aquarium Management system achieved its objectives by introducing a comprehensive solution tailored to address the challenges of maintaining home aquariums amidst the burgeoning trend of fishkeeping.



# CONCLUSION

- ❑ Smart Aquarium Management System have been successfully proposed and it can be easily implemented for making the life of aquarists more comfortable.
- ❑ The inclusion of a mobile application allows users to conveniently access real-time updates on the aquarium's status, ensuring efficient management without the need for constant manual intervention.
- ❑ This project not only simplifies aquarium maintenance but also promotes the well-being of the fish by preventing over or underfeeding, demonstrating the potential of technology to enhance pet care in modern households.