



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

AUTOMATIC FISH AQUARIUM

Umesh S. Bhoir, Sairaj D. Bhuvad, Dishant D. Kapdi, Hritik R. Kembari Ansari M.

Mubashshir ,

Bachelor of Engineering Bachelor of Engineering Bachelor of Engineering, Bachelor of Engineering,
Assistant Professor

in electrical.

in electrical.

in electrical.

in electrical.

Mumbai Univesity

Smt. Indira gandhi college of engineering, Ghansoli, Navi Mumbai, India.

ABSTRACT:

An automatic fish aquarium is a system that utilizes technology to control and maintain the environment within a fish tank without the need for constant manual intervention. This system typically includes features such as automated feeding, water filtration and circulation, temperature regulation, and lighting control. By automating these essential tasks, the aquarium owner can ensure that their fish are provided with optimal living conditions and reduce the time and effort required for maintenance.

Keywords: Automatic Fish Aquarium

I. INTRODUCTION:

An automatic fish aquarium is a modern solution that combines technology and convenience to create a self-sustaining and efficient environment for fish. By incorporating automated features such as feeding, filtration, temperature control, and lighting, these systems help aquarium owners maintain optimal conditions for their aquatic pets with minimal effort.

The automation of essential tasks in a fish tank not only ensures the well-being of the fish but also simplifies the maintenance process for the owner. With the ability to schedule feeding times, monitor water quality, adjust temperature settings, and control lighting levels remotely, automatic fish aquariums provide a hassle-free way to enjoy the beauty of an aquarium without the constant need for manual intervention.

Overall, automatic fish aquariums offer a convenient and innovative solution for fish enthusiasts looking to create a thriving and low-maintenance aquatic ecosystem in their home or office.

II. AIM AND OBJECTIVES:

The end and objects of an automatic fish terrarium can vary depending on the specific features and functionalities of the system. still, some common points and objects of automatic fish fences include

1. Promoting Fish Health and Well- being The primary end of an automatic fish terrarium is to produce and maintain a healthy and stable terrain for the fish. By automating essential tasks similar as feeding, filtration, water quality monitoring, and temperature control, the system aims to insure that the fish are handed with optimal living conditions.

2. Convenience and Ease of conservation One of the crucial objects of an automatic fish terrarium is to simplify the conservation process for terrarium possessors. By automating routine tasks and furnishing remote control and monitoring capabilities, the system aims to reduce the time and trouble needed to watch for the fish tank.

3. Energy Efficiency Automatic fish fences frequently incorporate energy-effective factors similar as LED lighting, effective filtration systems, and programmable timekeepers to minimize energy consumption. The end is to produce a sustainable and cost-effective terrarium system that's environmentally friendly.

4. Enhanced Control and Monitoring Another ideal of automatic fish fences is to give possessors with lesser control over the aquarium terrain. By allowing druggies to acclimate settings, schedule tasks, and examiner conditions ever through a smartphone app or other control interface, the system aims to empower possessors to make informed opinions and insure the well-being of their fish.

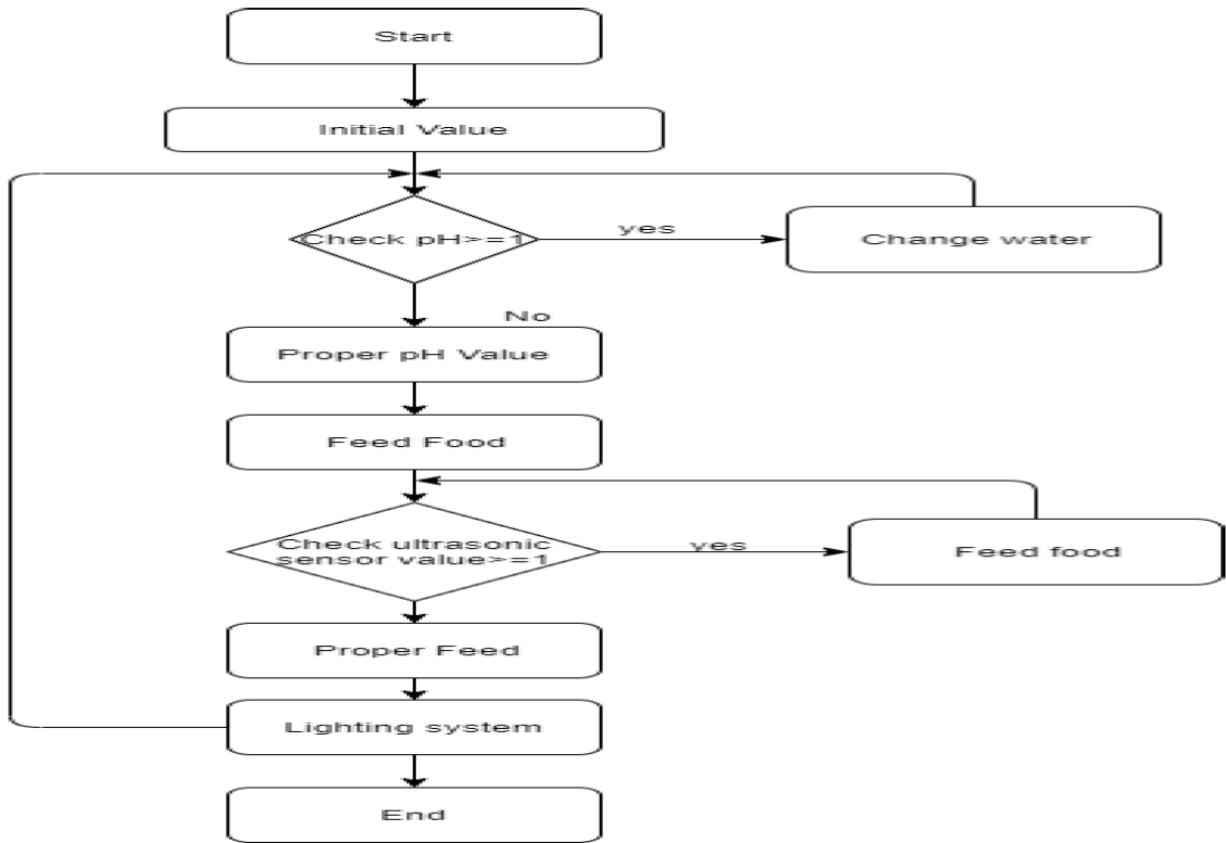
5. Promoting Relaxation and Enjoyment Eventually, the end of an automatic fish terrarium is to produce a beautiful and tranquil submarine terrain that can be enjoyed by both the fish and their possessors. By taking care of the specialized aspects of terrarium conservation, the system allows possessors to concentrate on appreciating the beauty of their aquatic world and passing the comforting goods of watching fish syncope in a well-maintained tank.

III. EXISTING SYSTEM:

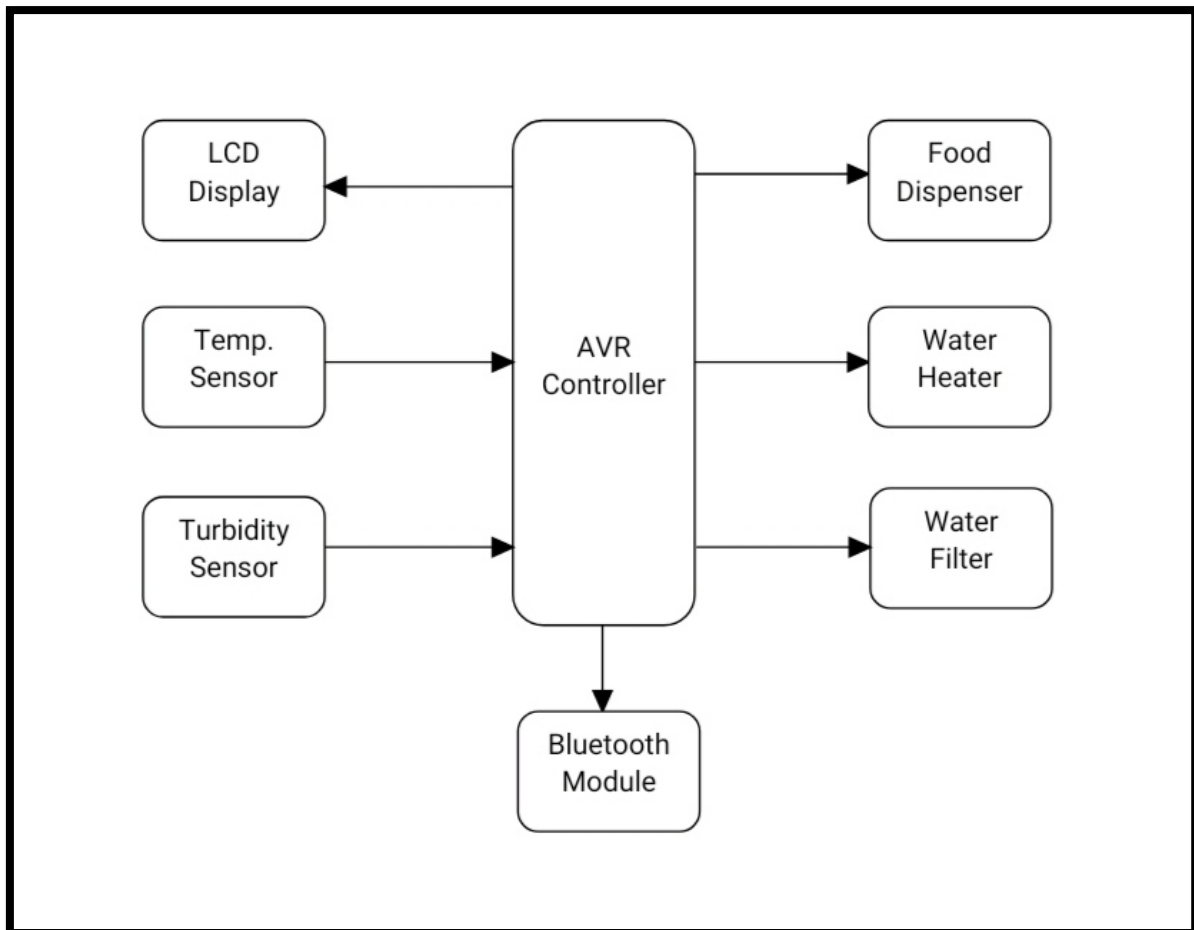
The existing systems of automatic fish aquariums vary in terms of features, functionalities, and complexity. Some common components and features found in automatic fish aquarium systems include:

1. Automated Feeding Systems: Automatic fish feeders can dispense food at scheduled times, ensuring that the fish are fed regularly and in controlled portions. Some feeders can accommodate different types of food, such as flakes, pellets, or granules.
2. Water Quality Monitoring: Some automatic fish aquarium systems are equipped with sensors and probes that monitor water turbidity. This data is displayed on a digital screen or transmitted to a smartphone app for real-time monitoring and alerts.
3. Remote Control and Monitoring: Many automatic fish aquarium systems come with Wi-Fi or Bluetooth connectivity, allowing users to control and monitor the aquarium remotely through a smartphone app or web interface. This feature enables owners to adjust settings, schedule tasks, receive alerts, and check on their fish from anywhere with an internet connection.

IV. PROPOSED SYSTEM:



Flow chart



Block diagram

V. METHODOLOGY:

The methodology of an automatic fish aquarium system typically involves the integration of various components and technologies to automate and optimize the management of the aquarium environment. Here is a general overview of the methodology involved in setting up and operating an automatic fish aquarium system:

1. **Planning and Design:** Begin by planning and designing your automatic fish aquarium system. Consider factors such as the size of the aquarium, the types of fish and plants you want to keep, and the desired water parameters. Determine the components you will need, such as filtration systems, heaters, and monitoring devices.

2. **Component Selection:** Select high-quality components for your automatic fish aquarium system, including a reliable filtration system, an automatic feeder, and monitoring devices for water parameters such as pH, temperature, ammonia, and nitrate levels.

3. **Installation:** Install the selected components in your aquarium according to the manufacturer's instructions. Ensure that all equipment is properly set up and functioning correctly before adding fish or other aquatic life.

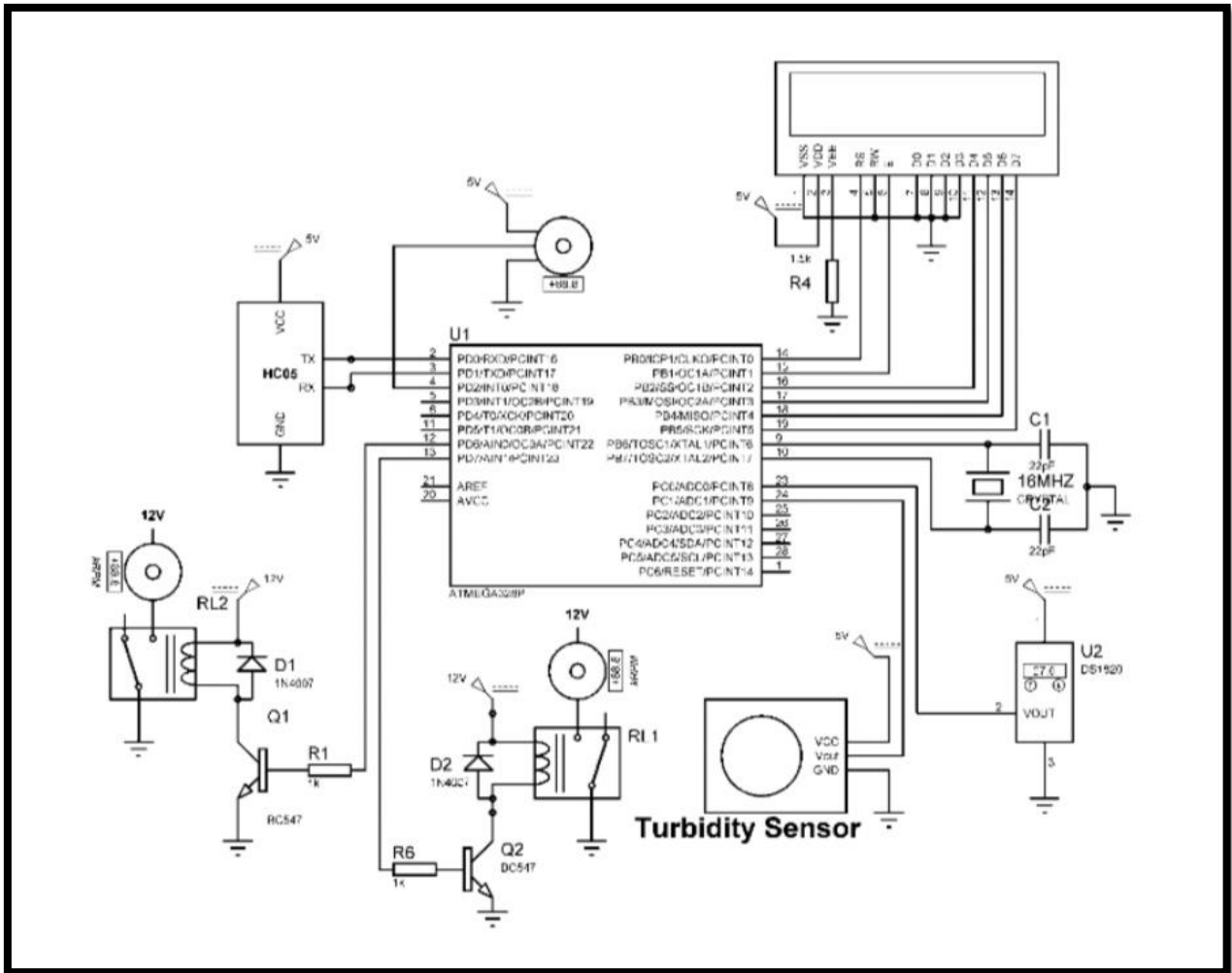
4. **Automation Setup:** Configure the automation features of your system, such as setting up timers for feeding schedules, calibrating monitoring devices to track water parameters.

5. **Monitoring and Maintenance:** Regularly monitor the performance of your automatic fish aquarium system, including water quality parameters, equipment functionality, and the health of your fish and plants. Perform routine maintenance tasks such as water changes.

6. **Adjustments and Optimization:** Make adjustments to the automation settings based on monitoring data and observations of your aquarium inhabitants. Optimize the system to maintain stable water conditions, promote the health and well-being of your fish and plants, and enhance the overall aesthetics of the aquarium.

7. **Continuous Learning and Improvement:** Stay informed about advancements in automatic aquarium technology and best practices for fishkeeping. Continuously learn and improve your system to provide the best possible care for your aquatic pets.

By following these steps and methodologies, you can create and maintain an efficient and effective automatic fish aquarium system that enhances the beauty of your aquatic environment while providing a healthy habitat for your fish and plants.



Circuit diagram



16x2 LCD Display



ACTUAL MODEL

VI. CONCLUSION:

In conclusion, an automatic fish aquarium system offers a convenient and efficient way to maintain a healthy and thriving aquatic environment for fish and other aquatic life. By incorporating features such as automated feeding, temperature control, water quality monitoring, remote control, this system streamlines the care and management of the aquarium while ensuring optimal conditions for the fish.

With the ability to monitor and control the aquarium remotely through a smartphone app or web interface, users can easily stay connected to their aquatic ecosystem and make adjustments as needed to promote the well-being of their fish. Overall, an automatic fish aquarium system provides a comprehensive solution for aquarium enthusiasts looking to enjoy the beauty of an underwater world with minimal effort and maximum enjoyment.

VII. ACKNOWLEDGMENT:

It is an opportunity of immense pleasure for us to present the paper on project “Automatic fish aquarium model Using IOT Technology” expressing our gratitude to all those who have generously offered their valuable suggestions towards the completion of the project.

We take the privilege to express our sincere thanks to Prof. Ansari M. Mubashshir, our project guide, for providing the encouragement and much support throughout our work.

We are deeply indebted to Mr. Joshi N.B. (Head of Department) and Dr. Sunil Chavan (principal) and the entire team in Computer Department. They supported us with scientific guidance, advice and encouragement. They were always helpful and enthusiastic, and this inspired us in our work.

VIII. REFERENCES:

- [1] International Journal of Advanced Research (2015), Volume 3, Assessment Of Agrochemicals Residue In Fish Ponds In Agricultural Areas Of Ifugao Province Nelson Latap, Dr. Chiemela F. Anyanwu, Dr. Ricardo L. Ildefonso.
- [2] Aquarium Water Parameters for A Balanced Fish Tank Algone (2016, December 15). Available: [Http://Www.Algone](http://www.algone.com).
- [3] “An IoT based reference architecture for smart water management Processes” Published by Tom´as Robles, Ram´on Alcarria, Diego Mart´ın, Mariano Navarro, Rodrigo Calero, Sof´ıa Iglesias, and Manuel de Madrid, Spain in 2016
- [4] “An Internet of Things Based Model for Smart Water Distribution with Quality Monitoring” published by Joy Shah, Nadiad, Gujarat, India in Vol. 6, Issue 3, March 2017 IJRSET
- [5] Development of Automatic Fish Feeder by Md.NasirUddin, Mm Rashid, Mg Mostafa, Belayet H, Sm Salam, Na Nithe, Mw Rahman & A Aziz, International Islamic University Malaysia
- [6] Ubiquitous Aquarium Management System”. Published by Sangeetha Rajesh, Saurabh Jadhav, Nehasingh in IOSR Journal of Computer Engineering (IOSR-JCE) Jan-2017
- [7] AQUA-TRONICS Published by Prof.C.M.Gaikwad, Miss.Bagwan Aisha¹, Miss.Kambale Prajakta², Miss.Jadhav Shweta³ International Research Journal of Engineering and Technology (IRJET) e- ISSN: 2395 -0056 Volume: 04 Issue:03 | Mar -2017
- [8] “Automatic Feeding Control for Dense Aquaculture Fish Tanks” published by- Yousef Atoum, Steven Srivastava, and Xiaoming Liu, Member, IEEE