TITLE PAGE

- **Hackathon name** - Electroforge (IoT)
- **Problem Statement Title-** Water quality monitoring system
- **Theme-** Real-time monitoring for water safety.
- **Team Name-** Machine minds
- **Team Leader -** M.V.V.Rishita
- **Organising Club -** IoT

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Idea Title

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Proposed solution

The water quality monitoring system uses IoT sensors to track real-time data on water parameters like pH and contaminants.

Data is sent to a central system for analysis, with alerts for any issues, enabling quick response and long-term water management.

Innovation and uniqueness

This solution’s innovation is its real-time, remote monitoring with automated alerts, enabling proactive, accessible water quality management.

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Project Idea & Approach

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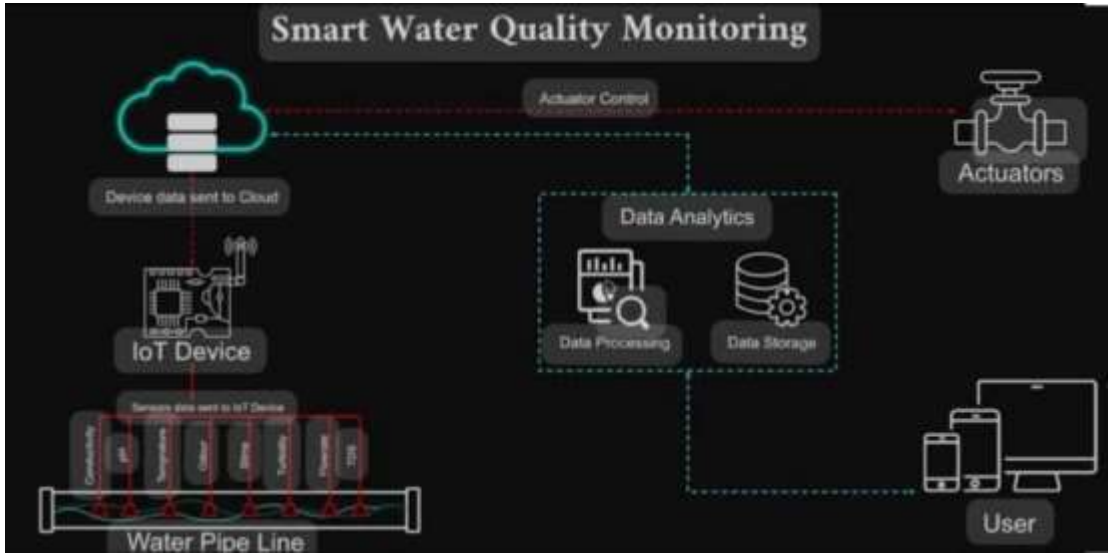
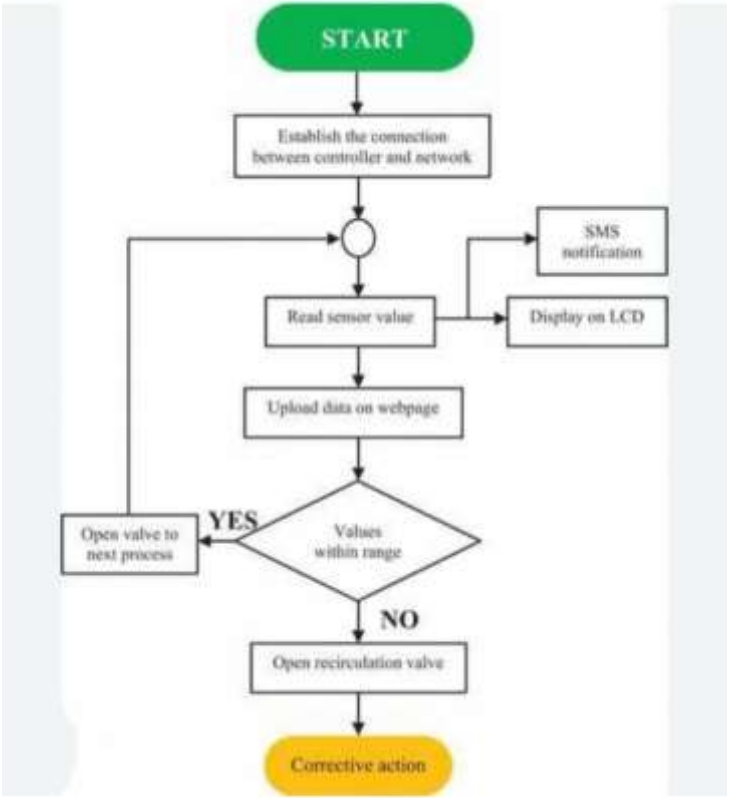
Working prototype and process of implementation





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Key Innovation

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- Analysis of the feasibility

The system is feasible, with reliable sensors and IoT for real-time monitoring.
Despite initial costs, it’s cost-effective in the long run, promoting water safety and sustainability.

Potential challenges

1. Sensor upkeep.
2. Connectivity issues.
3. High setup costs.
4. Data security risks.
5. Environmental impact.
6. Scalability concerns.

Strategies for overcoming challenges

1. Regular sensor maintenance.
2. Use multiple network options.
3. Seek grant funding.
4. Encrypt data for security.
5. Use eco-friendly materials.
6. Pilot and standardize for scalability.

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Product Potential & business Case

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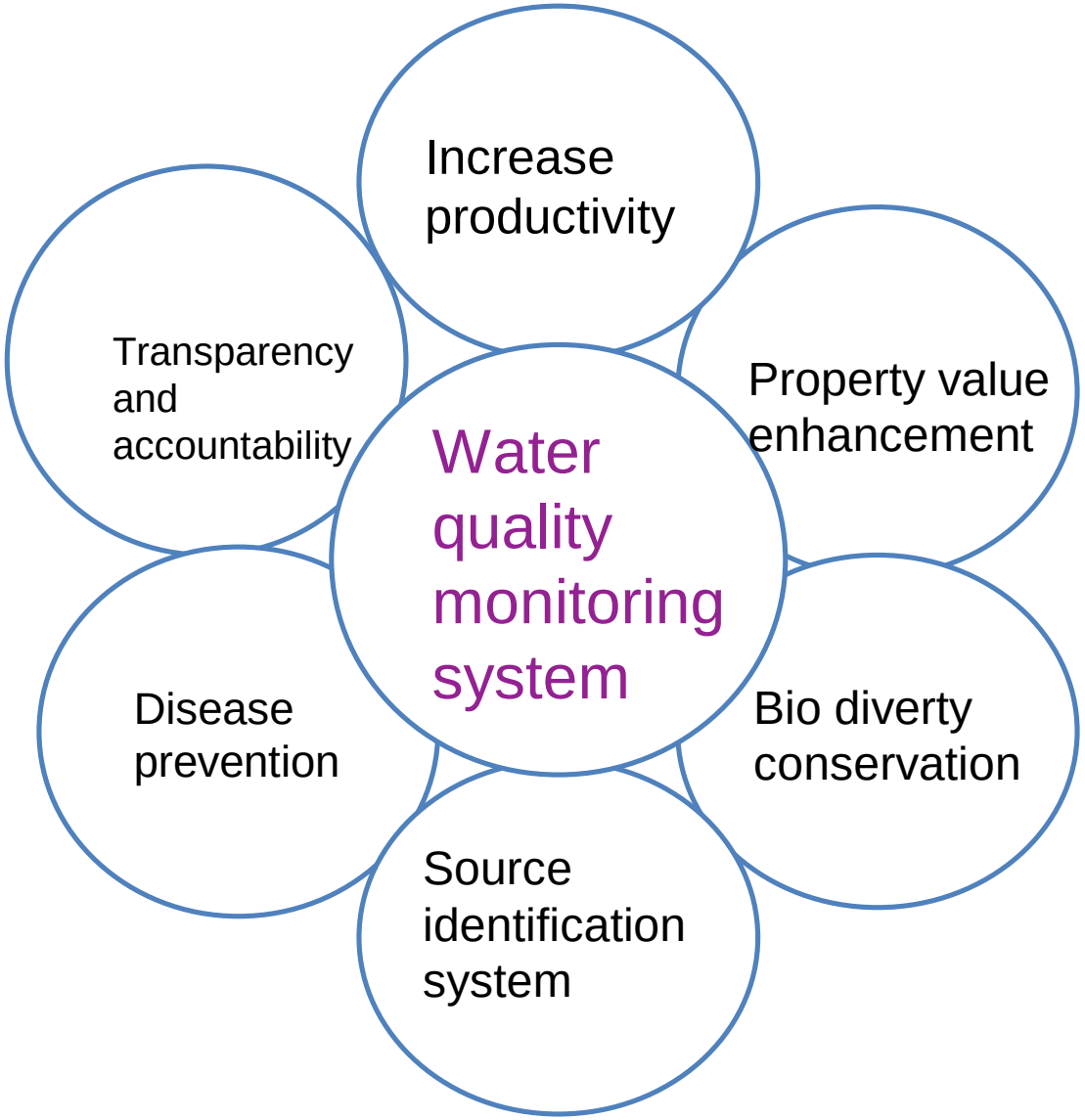

This project has the potential to improve aquacultural-performance, increase resource efficiency, and contribute to environmental sustainability .

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Technological Frameworks used

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Frameworks:

1. IoT: Connects sensors for real-time data transfer.
2. Data Analytics: Processes and analyzes water data.
3. Machine Learning: Predicts trends and detects anomalies.
4. Cloud Storage: Stores data securely and scalably.
5. Security: Protects data with encryption.
6. Dashboard: Visualizes data for easy monitoring.
7. Compliance: Ensures standards are met.