**INTERNET OF THINGS GROUP -5**

**TEAM MEMBER**

**PROJECT TITLE:** Smart water system Phase -5

**Performance overview:**

The IoT smart water system project is a modern and innovative approach to water management and control. It leverages Internet of Things (IoT) technology to create an automated and smart water system. This system not only offers aesthetic appeal but also provides real-time monitoring, control, and remote sensing and documentation

**Circuit diagram :**

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| Water | | Microcontroller | | Data Storage and |

| Source | | ( Arduino) | | Processing Unit |

| ---🡪 | | ---🡪| ( Raspberry Pi)|

| Water Tank | | Sensors | | |

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The water source is connected to the microcontroller through suitable sensors

The microcontroller collects data from the sensors and may perform some initial processing or data conditioning.

The microcontroller communicates with a data storage and processing unit to send the collected data for further processing and storage.

This is a high-level representation, and the actual circuit may involve various other components like power supplies, transceivers (for communication), and more sensors for additional data points.

**Coding:**

<!DOCTYPE html>

<html>

<head>

<title>Smart Water System</title>

<link rel=”stylesheet” type=”text/css” href=”style.css”>

</head>

<body>

<header>

<h1>Smart Water System Dashboard</h1>

</header>

<nav>

<!—Navigation links go here 🡪

</nav>

<section>

<h2>Real-time Data</h2>

<!—Display real-time data using HTML elements 🡪

</section>

<section>

<h2>Historical Data</h2>

<!—Use HTML tables, charts, or other elements to display historical data 🡪

</section>

<section>

<h2>User Control</h2>

<!—Add buttons or controls for user interaction 🡪

</section>

<section>

<h2>Notifications</h2>

<!—Display system notifications or alerts here 🡪

</section>

<footer>

<p>&copy; 2023 Smart Water System</p>

</footer>

</body>

</html>

IoT-based smart water system will depend on the specific components and sensors

1. **Sensor Integration:** Connect your water quality and quantity sensors to your IoT platform. Ensure they are sending data accurately and consistently.
2. **IoT Platform Setup:** Verify that your chosen IoT platform is receiving and processing data from the sensors. Configure any necessary dashboards and alerts.
3. **Data Analytics:** Implement data analytics to monitor water quality and usage patterns. This could involve using machine learning algorithms to predict water quality issues or detect leaks.
4. **Mobile App or Web Interface:** Develop a user-friendly interface for monitoring the system’s data. Users should be able to access water quality reports and control water-related devices remotely.
5. **Automation and Control:** Implement automated actions based on the data. For example, shut off water supply in case of a leak, or trigger notifications for maintenance when water quality deteriorates.
6. **Security**: Ensure that your IoT system is secure by implementing encryption, authentication, and access control measures to protect the data and devices.
7. **Power Management:** Optimize power consumption for battery-operated devices to ensure they have a longer operational lifespan.
8. **Testing and Validation:** Thoroughly test the system in different scenarios to identify and fix any issues. Consider real-world conditions and edge cases.
9. **Scalability**: Plan for future growth by ensuring that your system can handle additional sensors, devices, and users.
10. **Documentation**: Document the system’s architecture, components, and procedures for troubleshooting and maintenance.
11. **Compliance and Regulations:** Ensure that your system complies with local water quality and safety regulations.
12. **User Training:** If applicable, provide training to users on how to use the system and interpret the data.
13. **Deployment and Maintenance:** Deploy the system in the target environment and establish a maintenance plan for regular updates and servicing.
14. **Data Backup and Recovery**: Set up a data backup and recovery system to prevent data loss in case of system failures.