**INTERNET OF THINGS – GROUP 5**

**TEAM MEMBER**

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**Project Title: SMART WATER SYSTEM**

**Phase 2: INNOVATION**

**IoT-based smart water system project:**

**Water Quality Monitoring:** Create a system that continuously monitors water quality parameters such as pH, turbidity, and contaminants. Users can receive real-time alerts and historical data for better water management.

**Leak Detection and Prevention:** Develop sensors that can detect water leaks in pipes and fixtures. Integrate these sensors with a smartphone app to alert users and automatically shut off water supply to prevent damage.

**Smart Irrigation:** Build a smart irrigation system that uses IoT to monitor weather conditions, soil moisture levels, and plant requirements. It can automatically adjust watering schedules to conserve water and optimize plant health.

**Water Consumption Analytics:** Create a dashboard that provides users with insights into their water consumption patterns, helping them identify areas where they can reduce water usage and save costs.

**Water Recycling and Reuse:** Design a system that captures, treats, and recycles greywater for non-potable purposes like flushing toilets or irrigation. IoT can help manage this process efficiently.

**Community Water Sharing:** Implement a platform where individuals or communities can share excess water resources during times of scarcity, promoting water conservation and sustainability.

**Remote Water Quality Testing:** Develop a portable device that can test water quality in remote areas and transmit the data to a central location via IoT for analysis and immediate action.

**AI-Powered Predictive Maintenance:** Use machine learning algorithms to predict when water infrastructure components like pumps or valves are likely to fail, enabling proactive maintenance to prevent disruptions.

**Smart Water Metering:** Upgrade traditional water meters with IoT-enabled meters that provide real-time usage data to both consumers and utility companies, promoting water conservation and efficient billing.

**Water Security:** Build a system that can detect and respond to security threats in water distribution networks, ensuring the safety and reliability of the water supply.

Remember to consider factors like data security, scalability, and cost-effectiveness when implementing these innovations in IoT-based smart water system project.