**DOMAIN:** INTERNET OF THINGS

**TITLE:** SMART WATER MANAGEMENT

**ABSTRACT**

**Introduction:**

Water scarcity poses a pressing global challenge. The "Smart Water System" project represents an innovative approach to tackle this issue by harnessing the power of IoT technology and design thinking. Our mission is to monitor and manage water consumption in public spaces, promoting conservation, raising awareness, and ensuring sustainable resource management.

**Phase 1: Project Definition and Design Thinking:**

**Project Definition:**

This initiative centers on the deployment of IoT sensors in public areas, such as parks and gardens, to enable real-time water consumption monitoring. Our core objectives encompass enhancing public awareness, reducing water waste, and facilitating sustainable water resource management. The project's structure encompasses defining objectives, designing the IoT sensor network, developing the data-sharing platform, and executing seamless integration through IoT technology and Python.

**Design Thinking:**

To achieve our goals, we adopt a design thinking approach. We begin by empathizing with water users and stakeholders, comprehending their needs, and identifying pain points. We proceed to define the core problem areas related to water waste and resource inefficiency. Through ideation, we brainstorm creative solutions. Prototyping and testing refine these ideas. Finally, we implement the most effective solutions to address our defined objectives.

**IoT Devices Utilized**:

1. **Flow Sensors**: These devices measure water flow rates, offering real-time consumption data.

2. **Water Level Sensors**: Utilized for monitoring water levels in reservoirs and containers.

3. **IoT Microcontrollers**: Using Arduino Uno Boards.

4. **Wireless Communication Modules**: Ensuring seamless data transmission.

5. **Power Supply**: For reliable and continuous operation.

6. **Data Storage and Analysis**: Utilizing cloud platforms for efficient data management.

**Conclusion**:

The "Smart Water System" project represents a transformative endeavor, driven by IoT technology, design thinking, and a commitment to a sustainable future. Our multifaceted approach endeavors to address water scarcity, promote conservation, and empower communities with real-time data. Together, we aspire to make water a resource accessible to all