**SMART WATER SYSTEM - USING IOT**

**Problem Definition:**

1. **Project Scope and Objectives:**
   * The scope of our project is to implement an IoT-based smart water system in public parks to minimise water wastage.
   * Objectives: To provide real-time water consumption and utilization data to park visitors, ensuring sustainable water consumption and minimal/zero wastage.
2. **Data Collection and Parameters:**
   * Data to be collected : water consumption and utilization in toilets, drinking water facilities and irrigation systems.
   * Parameters to be identified: Water flow rate in taps and sprinklers, water tank level and filling pace.
3. **Environmental Challenges:**
   * Address the issue of water wastage in public places such as parks is highly prevalent.
   * Highlight the necessity of conveying data to park users to promote water conservation awareness and responsibility.

**Design Thinking:**

1. **IoT Device Selection and Deployment:**
   * Select appropriate sensors for water flow rate and water level indication.
     + Water flow rate – velocity/pressure sensors
     + Water level indication – ultrasound sensors

* + Plan the deployment of these sensors in appropriate locations for accurate data collection.

1. **Platform Development:**
   * Design a user-friendly web-based platform accessible to park visitors.
   * Implement real-time data visualization and display for water level and consumption status.
2. **Data Integration and Communication:**
   * Determine the communication protocol (e.g., Wi-Fi, LoRaWAN) for data transmission from IoT devices to the platform.
   * Develop a backend system for data processing and integration with the platform.
3. **Power Supply and Maintenance:**
   * Choose suitable power supply options (e.g., batteries or solar panels) for IoT sensors.
   * Outline maintenance procedures to ensure continuous operation.
4. **User Engagement and Safety:**
   * Implement an alert system to notify users of high water consumption.
   * Focus on user training and support to ensure effective utilization of the monitoring platform.
5. **Documentation and Reporting:**
   * Maintain comprehensive project documentation, including system architecture and user guides.
   * Provide periodic reports on water data and system performance to park management and the public.

Thus, this project facilitates the monitoring of water usage in public places such as parks using IoT system and displays and alerts the users with the collected data to ensure minimal/zero water wastage in the park.