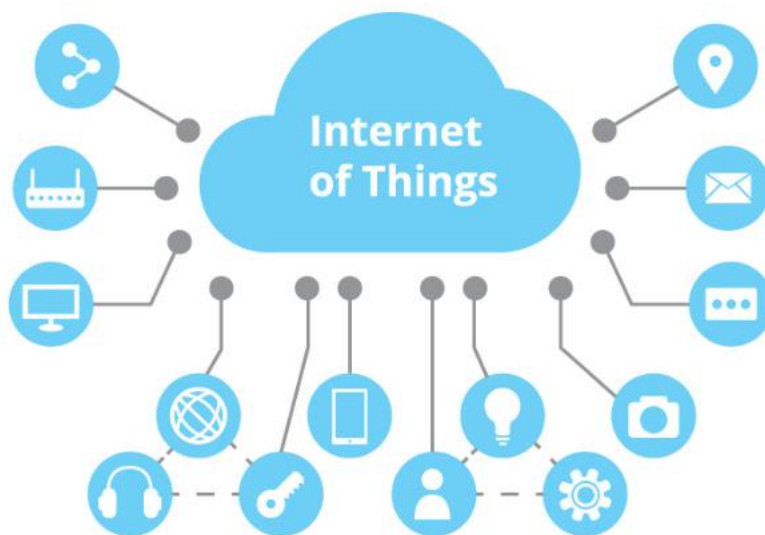


# SMART WATER SYSTEM

## Phase 1: Problem Definition and Design Thinking



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## Problem Statement:

*The problem we are tackling with the Smart Water System is the inefficient and unsustainable use of water resources in public places, such as parks and gardens. This issue is multi-faceted, and it impacts both the environment and resource management in our community. Here are the key aspects of the problem:*

**Water Wastage:** *In many public areas, water is often wasted due to leaks, overwatering, or unregulated usage. This not only results in higher water bills but also contributes to the depletion of this vital resource.*

**Lack of Awareness:** *Most people are unaware of their water consumption patterns in public areas, making it challenging to practice responsible water usage. This lack of awareness prevents individuals from actively participating in water conservation efforts.*

**Resource Management Challenges:** *Public entities, such as our local government, struggle to efficiently allocate water resources. Without real-time data, it's difficult to make timely decisions regarding water distribution, potentially leading to shortages and environmental strain.*

**Data Gap:** *There is a significant data gap when it comes to water consumption in public spaces. We lack real-time data on how much water is being used where and when. This gap hinders our ability to address the issues mentioned above promptly.*

### **Proposed Solution:**

*To tackle these challenges, we're proposing the implementation of a "Smart Water System" that leverages IoT technology and data-driven solutions. This comprehensive system comprises several components:*

#### **1. IoT Sensors for Water Consumption Monitoring:**

*We'll strategically deploy IoT sensors in public areas like parks and gardens. These sensors will be capable of measuring water flow, detecting leaks, and collecting real-time consumption data.*

#### **2. Data-Sharing Platform:**

*To centralize and manage the data collected by the sensors, we'll develop a robust data-sharing platform. This platform will ensure data security, scalability, and efficiency.*

### 3. Real-Time Data Visualization and Alerts:

*We'll create a user-friendly mobile app accessible to the public, displaying real-time water consumption data. Users will receive alerts for abnormal water consumption patterns, leaks, or sensor malfunctions.*

### 4. Public Awareness and Engagement:

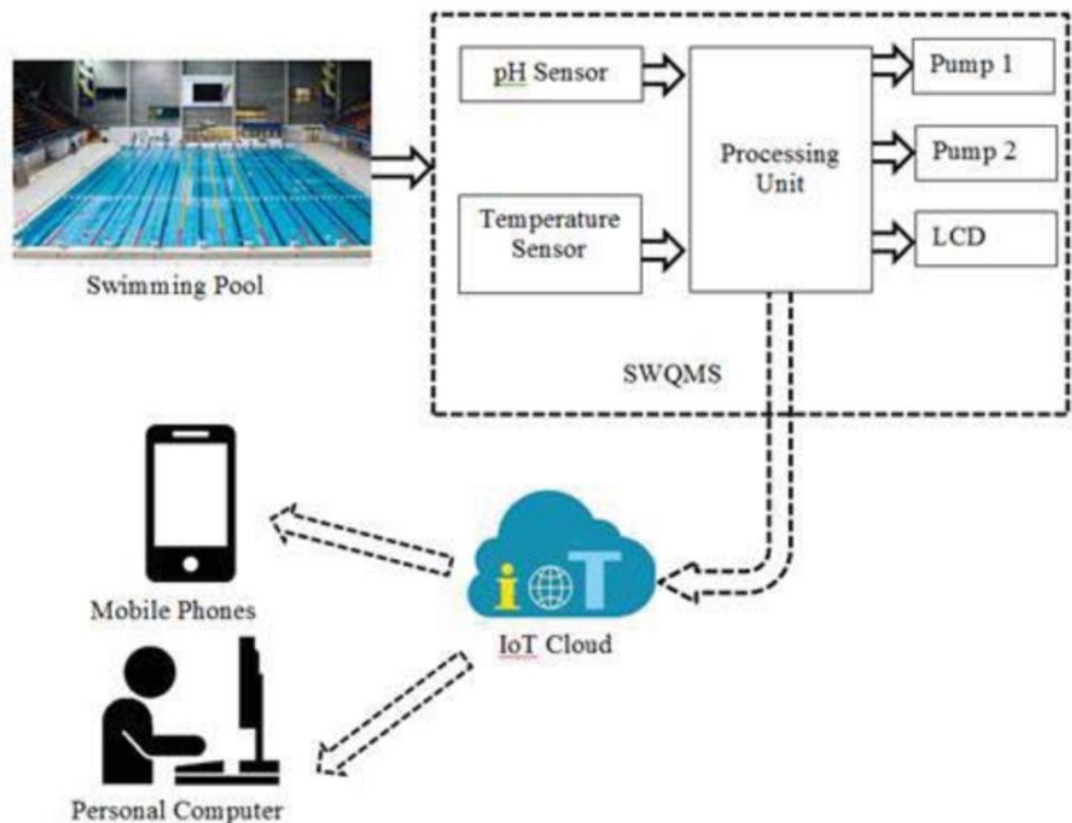
*Through the mobile app, we'll educate users about responsible water usage and its environmental impact. Gamification, challenges, and rewards will encourage conservation practices.*

### 5. Resource Management and Decision Support:

*City officials and policymakers will gain access to the data-sharing platform. This will enable them to make informed decisions about resource allocation and water conservation efforts based on real-time data.*

### 6. Sustainable Resource Allocation:

*By analyzing real-time data, we'll improve the efficiency of water resource allocation, reducing waste and ensuring sustainable usage*



# Design Thinking:

Design thinking is a human-centered approach to innovation that focuses on understanding the needs of users and developing solutions that meet those needs. The design thinking process can be applied to developing a smart water system for team members in the following steps:

**1.Empathize:** The first step is to understand the needs and pain points of team members when it comes to drinking water. This can be done through interviews, surveys, and focus groups.

**2.Define:** Once the needs of team members are understood, the next step is to define the problem that the smart water system will solve. For example, the problem might be to help team members remember to drink water, to provide them with access to clean drinking water, or to track their water intake.

**3.Ideate:** Once the problem is defined, the next step is to generate ideas for how to solve it. This can be done through brainstorming, sketching, and prototyping.

**4.Prototype:** Once some ideas have been generated, the next step is to create prototypes to test them with users. This will help to identify any potential problems with the ideas and to make necessary adjustments.

**5.Test:** Once the prototypes have been refined, the next step is to test them with users in a real-world setting. This will help to ensure that the smart water system is easy to use and meets the needs of team members.

## Potential Features of a Smart Water System for Team Members

A smart water system for team members could have a variety of features, such as:

- 1.Sensors that track water intake and send reminders to team members when they need to drink more water
- 2.A built-in water filter to ensure that team members have access to clean drinking water
- 3.A smartphone app that allows team members to track their water intake and set goals
- 4.Integrations with other fitness and health tracking devices

## Benefits of a Smart Water System for Team Members

- 1.Improved hydration levels
- 2.Reduced fatigue and headaches
- 3.Increased productivity
- 4.Improved overall health and well-being
- 5.Reduced healthcare costs