SMART WATER SYSTEM

Phase 1: Project Definition and Design Thinking

Project steps:

Project Title: Smart Water System

Project Definition:

The project involves implementing IoT sensors to monitor water consumption in public places such as parks and gardens. The objective is to promote water conservation by making real-time water consumption data publicly available. This project includes defining objectives, designing the IoT sensor system, developing the data-sharing platform, and integrating them using IoT technology and Python.

Design Thinking:

1.Project Objectives:

Define objectives such as real-time water consumption monitoring, public awareness, water conservation, and sustainable resource management.

- ➢ Real-time Water Consumption Monitoring:
    - o Real-time water consumption monitoring refers to the continuous and instantaneous tracking and measurement of water usage within a given system or area. It involves the use of sensors, data collection tools, and technology to provide up-to-the-minute information on how much water is being used, where it is being used, and by whom. This objective is crucial for efficiently managing water resources, detecting leaks or anomalies, and making informed decisions to optimize water usage.
- ➢ Public Awareness:
    - o Public awareness in the context of water refers to efforts aimed at educating and informing the general public about water-related issues, challenges, and conservation practices. It involves raising consciousness about the importance of water as a finite and essential resource, as well as promoting responsible water usage habits.

2. IoT Sensor Design:

Plan the design and deployment of IoT sensors to monitor water consumption in public places.

➢ Define Objectives and Scope:

• Clearly define the project's objectives, including what data you want to collect, why you want to collect it, and how it will be used.

• Identify the specific public places where water consumption monitoring is required, such as parks, public restrooms, or community centers.

➢ Select IoT Sensors:

• Choose appropriate IoT sensors for water consumption monitoring. These sensors should be capable of measuring water flow accurately and have the necessary connectivity options (e.g., Wi-Fi, LoRa, or cellular) to transmit data to a central server or cloud platform.

3.Real-Time Transit Information Platform:

Design a mobile app interface that displays real-time parking availability to users.

➢ **Splash Screen:**

• Start with a simple splash screen featuring your app logo to give users a quick introduction.

➢ **Login/Signup:**

• Provide options for users to log in or sign up for an account. You can also offer guest access for quick use.

4.Integration Approach:

Determine how IoT sensors will send data to the data-sharing platform.

➢ Data Acquisition by Sensors:

    o IoT sensors are devices equipped with various types of sensors (e.g., temperature, humidity, motion, GPS) that collect data from the physical world. These sensors continuously or periodically monitor their surroundings and generate data.

➢ Data Processing and Preprocessing:

    o The raw data collected by sensors may need to be processed and preprocessed to clean, filter, or transform it into a suitable format for transmission. This step often involves local data processing within the sensor node to reduce data volume and improve data quality.