Project title:

SMART WATER FOUNTAIN

Project Definition:

The goal of this project is to improve public water fountains by implementing IoT sensors that can control water flow and detect malfunctions. The primary objective is to provide real-time information about the status of water fountains to residents through a public platform.

Design Thinking

Project objectives:

- The project seeks to enable real-time monitoring of public water fountains.
- Water is a precious resource, and its efficient use is critical. By tracking the flow of water in real-time, this project will contribute to better management of water resources.
- Ensuring that water fountains are always in good working order is essential for public health and convenience.
- Public awareness about the status of water fountains is currently limited. Through a public platform, residents will gain access to real-time information on water fountain status.

IOT Sensor design:

- Flow rate sensors will be deployed within the water fountains to measure the rate of water flow. This data will be crucial for monitoring water consumption and detecting anomalies.
- Pressure sensors will be employed to monitor the water pressure within the fountains. Fluctuations in pressure can indicate issues such as clogs or leaks, allowing for prompt maintenance.
- Environmental conditions can impact water fountain functionality. Temperature sensors will be used to monitor the surrounding environment, helping to assess the impact of weather conditions on water fountains

Real-Time Transit Information Platform:

- Operational Status: Users will be able to check whether a nearby water fountain is operational or temporarily out of service.
- Flow Rates: Information on the current flow rate will help users estimate the availability of water and make informed decisions.
- Malfunction Alerts: The app will promptly alert users and maintenance teams if a malfunction is detected, ensuring timely repairs.

Integration Approach:

- A reliable and secure communication protocol will be established to facilitate data transmission from IoT sensors to the platform. This protocol will ensure the timely delivery of data without compromising data integrity.

- IoT sensors will continuously collect data related to water flow, pressure, and environmental conditions. This data will be transmitted to the platform at regular intervals, ensuring that the information presented to users is up-to-date.Data
- The collected data will be processed and analyzed using Python. This will involve data validation, anomaly detection, and generating meaningful insights. The use of Python will allow for accurate reporting and actionable information.