WATER FOUNTAINS

Objective:

The objective of this IoT water fountain system is to provide an efficient, reliable, and user-friendly way to access and monitor public water fountains while conserving water resources and ensuring they are in working condition.

Components:

1. **IoT Sensors**: Install various sensors in the water fountain to collect data. These sensors can include:
2. **Flow Rate Sensors**: Measure the flow of water from the fountain.
3. **Water Quality Sensors**: Monitor the quality of the water for safety.
4. **Pressure Sensors**: Ensure consistent water pressure.
5. **Proximity Sensors:** Detect when someone approaches the fountain for touchless activation.

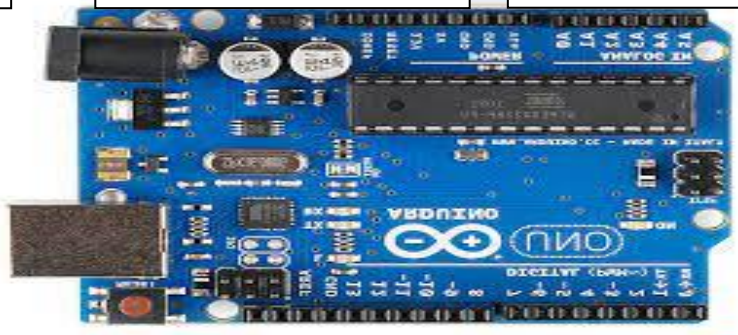
Hardware components :

Flow Rate Sensors

Water Quality Sensors

Proximitv Sensors

Pressure Sensors



Control Unit: A microcontroller or embedded computer (e.g., Raspberry Pi) that processes sensor data and controls the fountain's operation.

- **Connectivity:** Use Wi-Fi, Bluetooth, or cellular connectivity to transmit data to a central server.
- **Central Server:** Receive and process data from all fountains. It can be hosted on the cloud for scalability and reliability.

Mobile App:

- **User Interface:** Design a mobile app that displays the locations of nearby smart water fountains on a map.
- **Real-time Status:** Users can check the real-time status of a fountain, including water flow, water quality, and whether it's functioning properly.
- **Reservations:** Allow users to reserve the fountain for a limited time, reducing water waste.
- **Navigation:** Provide directions to the nearest fountain.
- **Notification**: Send alerts to users if a nearby fountain becomes available or experiences issues.

Data Analysis:

Analyze data from the sensors to identify trends and usage patterns.

Implement predictive maintenance to detect and address issues before they lead to fountain malfunctions.

Benefits:

- **Water Conservation:** Users can access water more efficiently, reducing wastage.

- **Improved Hygiene:** Touchless activation and water quality monitoring ensure safe and clean water.
- **Cost Savings:** Predictive maintenance reduces repair costs.
- **User Convenience:** Users can easily find functioning water fountains and reserve them as needed.
- **Data-Driven Decision Making:** Data analysis can inform water management decisions and resource allocation.
- **Environmental Impact:** Promotes sustainability and reduces the carbon footprint associated with water waste.