Smart Water Fountain
Phase-2 Innovation

Dhaanish Ahmed college of Engineering-chennai 601301

Team members:Thireesha.k,Priyadharshini.P,Swetha.k

Sensor-Based Activation:

Motion and proximity sensors detect when a user approaches the fountain.

Touchless operation ensures hygiene and water conservation.

Smartphone App Integration:

Users can locate nearby fountains through a dedicated app.

Reserve a fountain for a specific time slot, reducing waiting times.

The app provides real-time water quality information and usage statistics.

Water Quality Monitoring:

Integrated sensors continuously monitor water quality (e.g., temperature, pH, turbidity).

Real-time data is sent to a cloud-based platform for analysis.

Alerts are sent to maintenance teams when water quality deviates from acceptable levels.

Water Conservation:

Usage analytics help optimize water consumption.

The fountain adjusts water flow based on demand.

A recirculation system filters and purifies water, reducing waste.

Solar-Powered:

The Smart IoT Water Fountain is equipped with solar panels for energy self-sufficiency.

Excess energy can be used for ambient lighting or charging stations.

Sustainability Dashboard:

Users and property managers can access a web-based dashboard to view water and energy savings, as well as CO_2 emissions reductions.

Achievements and contributions to sustainability goals are prominently displayed.

Water Dispensing Modes:

Besides regular drinking mode, the fountain offers options like sparkling, chilled, or flavored water (if equipped).

Emergency Features:

In case of a malfunction or contamination event, the fountain can shut down automatically and alert authorities.

Design Structure for smart water fountain in IOT:

Hardware Components:

Main Unit: Contains the sensors, microcontroller, and water purification system.

Solar Panels: Mounted on top to provide energy.

Water Storage Tank: To hold and recirculate filtered water.

Dispensing Mechanism: Includes water taps and customizable dispensing options.

Motion and Proximity Sensors: For user detection and touchless operation.

Water Quality Sensors: For monitoring water quality parameters.

Communication Module: Enables data transfer to the cloud.

Emergency Shutdown Mechanism: For safety in case of contamination events.

User Experience:

Motion Detection: When a user approaches, the fountain activates automatically.

App Integration: Users can reserve fountains, monitor water quality, and set preferences.

Dispensing Options: Users can select regular, chilled, sparkling, or flavored water.

Alerts: Maintenance teams receive alerts if water quality deviates from safe levels.
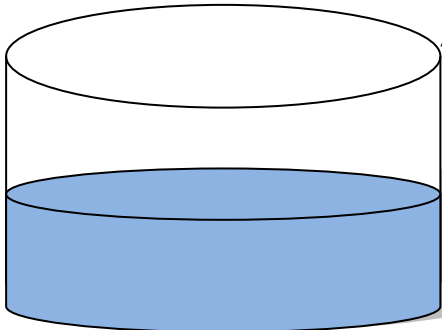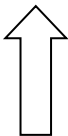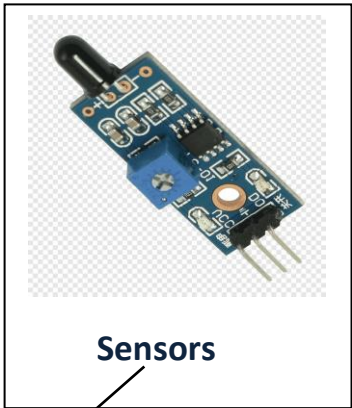
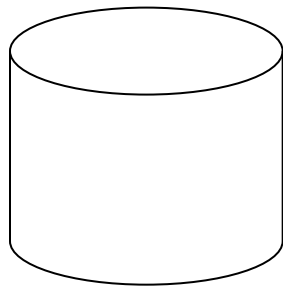**Hardware components:**

Provide Energy

Main unit

Water dispenser

Microcontroller

Sensors

Monitoring Proximity

Water Quality

Water Tank

Databases
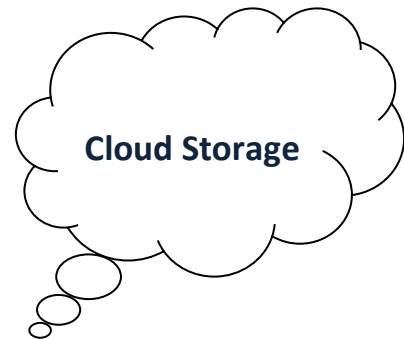
Cloud Storage

Emergency shutdown machine

Software Components:

User App: Available for smartphones to find fountains, reserve time slots, and access water quality information.

Cloud Platform: For data storage, analysis, and remote control of the fountains.

Dashboard: Web-based interface for users and property managers to access data and control settings.

Firmware: Embedded software on the microcontroller for sensor data processing and fountain control.

Security Software: To protect user data and ensure the integrity of the system.