Phase 2: innovation

* We will be using the Arduino UNO microcontroller suit the best for our project.
* An innovative idea for smart water fountains could be to incorporate a user-friendly app that allows people to customize their water preferences.
* Users could adjust the water temperature, add flavors or electrolytes, and control the water flow rate, all from their smartphones.
* Additionally, sensors could monitor water quality and send alerts for filter replacements or maintenance, promoting sustainable and clean drinking water.

Sensors

* Water Level Sensor, Temperature Sensor, Water Quality Sensor, Motion Sensor, Ultrasonic Distance Sensor, Light Sensor, Pressure Sensor, Flow Sensor, Humidity Sensor, Sound Sensor. These are the sensor, we will used for our project.

Connectivity

* Wi-Fi: Many smart water fountains connect to your home's Wi-Fi network, allowing you to control them through a mobile app or web interface from anywhere with an internet connection.
* Fountains are connected to the internet for real-time data transmission. Use protocols like MQTT or HTTP for communication.

Protocol

* After research, the protocol which we chose for our solution for message queuing and reception is HTTP/HTTPS.
* Because it is simple and perfectly suitable for our innovative solution.

Cloud

* Although many cloud services are available like Google, Amazon and others, it is available in paid version.
* So, we chose BEECEPTOR cloud which supports HTTP/HTTPS protocol for solution.

Public platform

Creating a public platform for smart water fountains could involve integrating IoT (Internet of Things) technology to monitor and manage water fountains in public spaces.

* Sensor Integration: Install sensors to monitor water quality, temperature, and flow rates. These sensors can transmit data to a central platform.
* Centralized Dashboard: Develop a web-based dashboard for administrators to monitor fountain status, water quality, and maintenance needs.
* Mobile App: Create a user-friendly mobile app that allows the public to locate nearby smart fountains, check water quality information, and receive notifications.
* Water Quality Analysis: Implement algorithms to analyze water quality data and generate alerts if issues are detected.
* Maintenance Scheduling: Set up a maintenance scheduling system based on usage data and sensor readings to ensure fountains are clean and functioning optimally.
* Water Conservation: Integrate features to promote water conservation, such as automatic shut-off during non-peak hours or when water quality is compromised.
* Public Engagement: Encourage public involvement through features like user ratings, feedback submission, and social media integration.
* Security: Implement robust security measures to protect data and prevent tampering with fountain functionality.
* APIs and Open Data: Provide APIs for developers to access the data, allowing them to create third-party apps and services, fostering innovation.