## Internet of things-Group 5

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**Project Title:Smart water system**

**Phase 3: Development part 1**

Building an IoT water consumption monitoring system can be a multi-step process. Here’s a general roadmap to get you started:

**1.** **Define Requirements:** Clearly outline what you want to achieve with the system, including specific metrics you want to monitor, the data you want to collect, and any particular features you want to include.

**2. Hardware Selection:** Choose the appropriate sensors and hardware components to measure water consumption. This might include flow sensors, pressure sensors, and microcontrollers like Arduino or Raspberry Pi.

**3. Data Transmission:** Decide on the communication protocol and method for transmitting data. Options include Wi-Fi, Bluetooth, LoRa, or GSM, depending on the range and location of the water consumption devices.

**4. Data Processing and Storage:**Set up a database to store the data collected from the sensors. You might consider using cloud services like AWS or Google Cloud, or you can set up a local server for this purpose.

**5.User Interface:** Design a user-friendly interface that allows users to view and interpret the data collected. This could be a web application, a mobile app, or a dashboard.

**6. Data Analysis and Reporting:** Implement data analysis algorithms to provide insights into water consumption patterns, trends, and anomalies. This will help users make informed decisions about their water usage.

**7. IoT Platform**: Decide on an IoT platform for device management and data processing. Options include AWS IoT, Google Cloud IoT, or Microsoft Azure IoT

**8. Real-time Monitoring and Control:** Create software for real-time monitoring and control of the water system. Use your chosen IoT platform's services for this purpose.

**9. Alert System**:Develop an alert system that notifies users when there are unusual spikes or drops in water consumption, which could indicate leaks or other issues.

**10. Security Measures:** Ensure that the system has proper security protocols in place to protect the data and the system from potential cyber threats.

**11. Testing and Calibration:** Test the system thoroughly to ensure accurate data collection and transmission. Calibrate the sensors and refine the system based on the test results.

**12. Deployment and Maintenance:** Once the system is fully tested, deploy it in the desired location and establish a maintenance plan to ensure the system continues to function properly over time.

Remember, this is a general guide, and each step may require more in-depth research and implementation

depending on the specific requirements of your water consumption monitoring system.