**SMART WATER SYSTEM BASED ON IOT**

**DEVELOPMENT OF SMART WATER :**

1. **Improve water quality**
2. **Implement leakage control**
3. **Decentralized water system**
4. **Real time monitoring control.**

**IMPROVE WATER QUALITY :**

**IoT sensors are used to measure various parameters of water quality, such as pH, temperature, dissolved oxygen, and the presence of chemicals and microorganisms. These sensors can be placed in rivers, lakes, and other bodies of water, and they can transmit data in real-time to a central monitoring system.**

**IMPLEMENT LEAKAGE CONTROL :**

**Leakage control work involves the following major steps: Preparatory work: updating maps, databases of consumer connections, residing population, water mains, valves and fire hydrants etc.; planning of activities. Test for loss assessment and locating the defects (leak detection).**

**DECENTRALIZED WATER SYSTEM :**

**Decentralized water systems are water systems that are not reliant on a central treatment and distribution system. Instead, decentralized water systems use a variety of technologies to collect, treat, and reuse water at the local level. It** **can be used to provide water for drinking, irrigation, or other purposes. They can be used in both urban and rural areas, and they can be particularly useful in areas with limited access to centralized water systems. It is essential to addressing the challenges of water scarcity and climate change. By using technology to make decentralized water systems more efficient and affordable, we can help to ensure that everyone has access to the water they need.**

**REAL TIME MONITORING CONTROL :**

**It is typically achieved using a network of sensors that are deployed throughout the water system. These sensors collect data on water quality, flow, pressure, and other parameters. The data is then transmitted to a central control system, where it is analyzed and used to make decisions about how to operate the water system.**

**PYTHON SCRIPT :**

**# Import necessary libraries**

**Import time**

**Import random**

**Import requests**

**# Simulated sensor data for water level**

**Def get\_water\_level():**

**Return random.uniform(0, 100)**

**# Function to send data to a server**

**Def send\_data\_to\_server(data):**

**Server\_url =** [**http://example.com/api/water-level**](http://example.com/api/water-level)

**Response = requests.post(server\_url, json={“water\_level”: data})**

**If response.status\_code == 200:**

**Print(“Data sent successfully!”)**

**Else:**

**Print(“Failed to send data. Status code:”, response.status\_code)**

**# Main function for smart water system**

**Def main():**

**Try:**

**While True:**

**# Read water level data from sensors**

**Water\_level = get\_water\_level()**

**Print(“Water Level:”, water\_level)**

**# Send data to the server**

**Send\_data\_to\_server(water\_level)**

**# Wait for a specified interval (e.g., 1 hour)**

**Time.sleep(3600) # 3600 seconds = 1 hour**

**Except KeyboardInterrupt:**

**Print(“Smart water system stopped.”)**

**# Run the main function**

**If \_\_name\_\_ == “\_\_main\_\_”:**

**Main()**

**PROJECT SUBMITTED BY :**

**NAME : Kaviyarasu.A**

**REGISTER NO : 721421106031**

**NAME : Ganthi parushuramudu**

**REGISTER NO : 72141106017**

**NAME : Gorantla manoj kumar**

**REGISTER NO : 72141106018**