**PHASE -1**

**PROBLEM AND IDEFINITION AND DESIGN THINKING**

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| **Date** | 26-09-2023 |
| **Team ID** | Proj\_223984\_Team |
| **Project Name** | Smart water system |
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TITLE: **SMART WATER SYSTEM**

**INTRODUCTION**:

The project’s is to implement internet of thing sensors to monitor water consumption in public places such as parks, gardens and other public uses. The project is to conserve water by using the real time water consumption data publicly available. This project includes defining objectives, designing the IOT sensor system, developing the data-sharing platform, and integrating them using IOT technology and python.

**OBJECTIVE:**

To design an iot based smart water system which provides real time data of water consumption to conserve water and to manage water for further uses and create public awareness.

**COMPONENTS:**

1. Iot sensors that measures the water measurements like availability of water, quality of water and the requirement of water and these sensors are placed in the public water consumption are like street water tanks, municipal parks, public swimming pools.
2. The sensors also placed in central water resources which supplies water to public water resources to maintain their availability and quality.
3. the sensors transmit the data to central monitoring system and the data from central system is used to promote the conservation of water and create awareness to public to conserve water.
4. This conservation of water is to reduce water scarcity and to manage the requirement when they are insufficient.
5. The water conservation process can also by high water consumption areas like industries.

**BENEFITS:**

Smart metering in IoT can be used to monitor water quality in different places.

This way, utilities can ensure that their water is nutrient-rich and safe for human consumption, even in remote areas.

Prioritizing water management helps you eliminate water waste and keep your water infrastructure operating in peak condition.

Using water efficiently decreases your water bill, and there are several other ways it drives down water-related costs.

There are many benefits to using IoT for water quality monitoring. It provides real-time monitoring of water quality, allowing for early detection of any contamination.

It also allows for continuous monitoring of water quality, which can detect long-term trends and prevent problems before they become critical.

**CHALLENGES:**

Water security in India faces several issues and challenges that threaten the sustainability and development of the country.

These include over-extraction of groundwater, water pollution, inadequate distribution, lack of proper water management, climate change, and conflicts over water.

High installation costs: Smart water meters can be expensive to install, and some households may not be able to afford the upfront costs.

This could disproportionately affect low-income households, leading to further inequalities.

**FUTURE SCOPE:**

Adopting a Smart Water Management approach, which prioritizes efficient resource use, system resilience, and social equity, is increasingly essential for protecting health, prosperity, and environmental sustainability, particularly in regions dealing with resource scarcity and inequality.

Local and rural areas and municipalities require people to come up with plans for management and distribution of water resources, flood control strategies, harvesting rainwater according to the plan of the town, and more.

**CONCLUSION:**

This application will improve the water sustainability and management, as well as the policy of smart cities adequately adapted considering different constrains.

The selected techniques and actions depend on the considered threshold, the capital investment, and the availability of techniques and equipment.