 **KGiSL Institute of Technology**

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**Department of Artificial**

**Intelligence and Data Science**



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**Artificial Intelligence and Data Science**

**Project Title**

**:**

**Smart Water Fountain**

**Semester/ Year**

**:**

**V**

**/ III**

**Project Title:** Smart Water Fountains

**Phase 1:** Project Definition and Design Thinking

**Project Definition:**

This project aims to enhance public water fountains by implementing IoT sensors to control water flow and detect malfunctions. The primary objective is to provide real-time information about water fountain status to residents through a public platform. This project includes defining objectives, designing the IoT sensor system, developing the water fountain status platform, and integrating them using IoT technology and Python.

**Project Objectives:**

1. Improve Water Accessibility:
   * Increase the availability of clean and convenient drinking water for users .
2. Enhance User Experience:
   * Ensure that users report a positive improvement in their experience with the smart water fountains.
3. Reduce Water Waste:
   * Decrease water waste through the implementation of water-saving features.
4. Ensure Reliability:
   * Maintain a optimal fountain uptime to ensure consistent access to drinking water for users.
5. Data Collection and Analysis:
   * Collect and analyze user data and feedback to make iterative improvements to the smart water fountain system.
6. Cost-Efficiency:
   * Optimize operational costs to ensure that the smart water fountain system is financially sustainable and cost-effective.
7. Community Engagement:
   * Engage with community organizations or schools to raise awareness about the benefits of using smart water fountains and promote their adoption within.

**IoT Sensor Design:**

* **Water Quality Sensor:** Water quality sensors are used in this smart fountain to assess the quality of water being used like pH level, turbidity and contaminants in the water.
* **Water Flow Sensor**: Flow sensor is used to monitor the rate of water dispensing from the fountain to maintain appropriate water level within the fountain.
* **Temperature and Humidity Sensor:** Measures environmental conditions to ensure user comfort and fountain protection**.**
* **OLED Display:** Displays are installed which is used for easy user access to the fountain condition and malfunctioning information easily.

**Information Platform:**

A mobile app is developed to ensure that the users can easily access the information about the fountains and be able to modify the properties of fountain like the flow control, Duration of fountain, ON/OFF timings etc. This provides a user-friendly interface for the users to interact with our smart fountain.

**Integration Approach:**

The IoT devices communicates the information about the fountains to the users devices by using wireless medium of communications like Wifi/Bluetooth. This method of communication is feasible to implement in various locations.