# WATER ADMINISTRARTION AND PRESERVATION SYSTEM REPORT

**A Report Submitted in Partial Fulfillment of the Requirements for the Degree of**

# BACHELOR OF TECHNOLOGY

**in**

**Computer Science and Engineering by**

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### May, 2024

### DECLARATION

sWe hereby declare that the work presented in this report entitled “Water Administration and Preservation system", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. We have given due credit to the original authors/sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. We have used quotation marks to identify verbatim sentences and given credit to the original authors/sources. We affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, we shall be fully responsible and answerable.

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### CERTIFICATE

This is to certify that project report entitled “Water Administration and Preservation System” which is submitted by Oham Khatri, Prabal Pratap Singh, Ilarika Singh, Ishika Chowdhary, Kavyanshi Srivastava in partial fulfillment of the requirement for the award of degree B. Tech. in the Department of **Computer Science and Engineering** of **Pranveer Singh Institute of Technology,** affiliated to **Dr. A.P.J. Abdul Kalam Technical University, Lucknow** is a record of the candidates own work carried out by them under my supervision. The project embodies the result of original work and studies carried out by the students themselves and the contents of the project do not form the basis for the award of any other degree to the candidate or to anybody else.

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### ABSTRACT

Urbanization is a phenomenon observed in both planned and unplanned settlements in cities, leading to house densification. In densely packed urban areas of India, the prevalence of devastating fires poses significant risks. According to the India Risk Surveys 2018, India ranks third in fire incidents, particularly in the Northern and Western regions of the country. Causes of fire disasters in urban areas include the use of wood fuel and charcoal for heating, waste burning, and inadequate city infrastructure for firefighting, exacerbating the potential for fire risk occurrence. Urban fires have adverse impacts on human lives, property, and the environment, generating smoke pollution and releasing greenhouse gases. Despite previous major fires, violations of building and fire safety norms persist, resulting in fire accidents with alarming regularity. Urgent action is needed to address fire safety concerns and hold violators accountable. In response to these challenges, the project aims to tackle water scarcity through an integrated system of IoT devices, cloud storage, and mobile/web connectivity. By installing IoT devices on water tank lids, real-time location and water level data are provided, facilitating efficient water resource management through a user-friendly mobile app and website interface. Additionally, the modernization of fire safety equipment and assistance to fire departments are essential to minimize loss of life and property due to fire outbreaks and inefficient water source administration in Smart Cities. The project addresses several key issues contributing to fire risks and water scarcity. Firstly, it tackles the unavailability of water during emergencies, which is exacerbated by non-functional water hydrants and dedicated tanks situated at a distance from fire locations, making access to water challenging. Secondly, it addresses the lack of real-time water level records, as the absence of such records in surrounding water tanks and the availability of fire hydrants hinder efficient firefighting efforts. Thirdly, the project aims to reduce dependence on manual labour for water distribution and administration, recognizing that this reliance increases the likelihood of inefficiencies and errors in water management. Finally, it seeks to overcome the absence of a centralized system for water management, recognizing that such a system would streamline the administration of water sources and alleviate the challenges faced in efficiently managing water resources. Through the implementation of an integrated system of IoT devices, cloud storage, and mobile/web connectivity, the project aims to provide real-time water level data and location information, facilitating efficient water resource management and enhancing resilience against fire risks and water scarcity challenges in urban areas. The proposed solution involves the implementation of an IoT-based system comprising devices installed on water tank lids to measure and transmit real-time water level data and location coordinates to a cloud server. A mobile application and website will display the location and water level information of nearby water tanks, allowing fire stations, water authorities, and private users to identify tanks with ample water reserves during emergencies. By leveraging technology and modernizing fire safety equipment, the project aims to enhance the resilience of Smart Cities against fire risks and water scarcity challenges.

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*We also do not like to miss the opportunity to acknowledge the contribution of all faculty members of the department for their kind assistance and cooperation during the development of our project. Last but not the least, we acknowledge our friends for their contribution in the completion of the project.*

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