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Centralized ERP Application for Drinking Water Distribution and Maintenance Management Mr Suthahar P [1] Assistant Professor in Department of Information Technology Sri Sairam Institute of Technology suthakar.it@sairamit.edu.in Gayathri B[2] Department of Information Technology Sri Sairam Institute of Technology sit20it042@sairamtap.edu.in Monika E [3] Department of Information Technology Sri Sairam Institute of Technology sit20it039@sairamtap.edu.in

**Abstract** In today's world, efficient management of drinking water distribution is essential to ensure a sustainable and reliable supply of clean water to communities. The efficient management of drinking water distribution and maintenance is crucial for ensuring access to clean and safe drinking water. This comprehensive system aims to streamline the processes associated with water distribution, maintenance, and management across various units and regions. In this era of technological advancement, the implementation of a centralized Enterprise Resource Planning (ERP) system offers a comprehensive solution to streamline and optimize the processes associated with drinking water distribution across various units and maintenance activities. This survey paper aims to provide a comprehensive overview of the proposed project, discussing its objectives, significance, methodologies, expected outcomes, and potential challenges, components, and potential benefits of such a system, offering insights into its implementation and impact on water management. **Keywords:** online shopping, clean drinking water, Progressive web Application, DigitalMarketing, Safe and Sanitation, User friendly, Enhancement of hygiene..

**I.**

**INTRODUCTION** Access to clean drinking water is a fundamental human right, and its efficient distribution and maintenance are essential for public health and well-being. Many small distributors and shops are packing and distributing mineral waters under various units and containers based on user requirements. Most of these business people are only using some manual entries for stock maintenance and water distribution as they cannot afford an ERP software to automate their process. Thus, we are planning to create a centralized ERP application to maintain the stocks and distribution history along with the mode of transport, payment cycles, customer maintenance etc which will help the micro business units to enhance their business in a better way. To design and develop a centralized ERP system that integrates all aspects of drinking water distribution and maintenance. To improve the efficiency, transparency, and accountability of water supply operations. To provide real-time

monitoring and data analytics capabilities for informed decisionmaking. To enhance customer service by enabling easy reporting of issues and tracking resolution. To supply and securing of clean and sufficient drinking water for the population To improvement of infrastructure for storage, transport and agricultural marketing To improvement of physical health (supported by clean drinking water, access to sanitation, improved nourishment) and advancement of (environmental) education and self-help. Ultimately, ERP integration contributes to sustainable and efficient water distribution, ensuring the availability of clean and safe drinking water to consumers.

## II. LITERATURE REVIEW

Drinking water distribution management is a critical aspect of public health and infrastructure management. It encompasses the entire process, from sourcing water through treatment plants to its delivery to homes and businesses. Key components include water sources (e.g., reservoirs, wells), treatment facilities, pipes, pumps, and storage tanks. Strict adherence to quality and safety standards is crucial to ensure the water's potability. Real-time monitoring, maintenance, and response to emergencies are essential for efficient operations. Emerging technologies like IoT sensors and data analytics are increasingly used to improve monitoring and management. Sustainability and conservation efforts are also gaining prominence in modern water distribution strategies to address water scarcity and environmental concerns.

ERP systems are comprehensive software platforms that centralize and automate core functions like finance, human resources, manufacturing, inventory management, and more. They provide a unified database and user interface, allowing seamless data flow and collaboration across departments. ERP systems facilitate realtime data access and decisionmaking, improving overall operational efficiency. Common modules within ERP systems include accounting, procurement, CRM (Customer Relationship Management), and supply chain management. ERP implementations often involve customization to match an organization's specific needs and industry requirements. These systems enable better resource allocation, cost control, and productivity enhancement, leading to improved competitiveness. Cloud-based ERP solutions have become increasingly popular, offering scalability and accessibility from anywhere. Challenges in ERP adoption include high initial costs, complex implementation, and resistance to change among employees. Modern ERP systems may incorporate advanced technologies like AI, machine learning, and IoT for enhanced functionality. Water management organizations are increasingly adopting ERP systems to enhance

their efficiency and effectiveness. ERP integration allows for the centralized management of critical data, such as water quality, supply, and infrastructure maintenance. It streamlines various functions, including billing, customer service, asset management, and regulatory compliance, within a single software platform.

III. System Architecture

Front-End Layer: The front-end layer handles the user interactions and presents information from the ERP system to users. It should include elements like responsive web design, user authentication, and interactive dashboards.

Back-End Layer: Application Server: This layer handles the business logic of the ERP system. It includes modules for order processing, inventory management, maintenance tracking, and more.

Database: Store and manage data related to water distribution, inventory, user profiles, and maintenance records. Consider using a relational database or NoSQL database depending on your data requirements.

3.1 HTML

HTML stands for the hypertext markup language. It contains the links which allows the user to jump to other document. The HTML describes the structure of a web page and allows the user to create the pages. The pages can be viewed using the CSS. The basic elements present in the HTML are tags and attributes. The tags are used to start an HTML element which is usually enclosed by the angular brackets. The attributes provides additional information. The main advantage of using HTML is they are very user friendly and they are easily customizable. The main disadvantage is the code or the document cannot be printed. The HTML can be used in different applications like web page development, navigation of internet, provides offline support, and helps in development of gaming. The navigation of internet allows the user to navigate from one page to another page. The HTML pages can be made available even in offline mode without the access of the internet facilities. The gaming development provides a better experience. The basic HTML tags used in the documents are ,

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