HYDROHUB-OUR SOURCE FOR WATER INFORMATION

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ABSTRACT

Access to safe and clean drinking water is a fundamental human right, and its availability and quality are of paramount importance. To ensure the efficient management of drinking water resources, a comprehensive and user-friendly information system is essential. This abstract outline the development of a web portal for a drinking water details system (dwds) aimed at providing realtime access to critical information related to drinking water sources, quality, distribution, and consumption.

Hydro Hub stands as a crucial resource for individuals, communities, policymakers, and businesses seeking reliable data and insights on all aspects of water. Hydro hub's mission is to empower individuals and organizations with the knowledge and tools needed to make informed decisions about water resources. By promoting data driven, sustainable water management practices and fostering a sense of shared responsibility, hydro Hub serves as a catalyst for positive change in how we approach one of our most precious and vital resources. In a world where access to clean and reliable water is increasingly essential, hydro Hub stands as a beacon of knowledge and collaboration in the pursuit of water sustainability.

I. INTRODUCTION

Hydro is a comprehensive platform that provides a wealth of data and resources related to water. Hydro offers a wide range of information, including water quality reports, conservation tips, consumption data, infrastructure updates, and much more. Whether you're a part of the public, municipal authorities, or administrators, Hydro can be a valuable tool for accessing essential water related information to make informed decisions and promote water sustainability. It provides a ton of valuable data and resources to help everyone from the public to municipal authorities make informed decisions about water. Hydro can give you insights into water quality reports, conservation tips to save water, data on how much water is being used, updates on water infrastructure, and even emergency response protocols. It's a great tool to understand water supply and demand, improve infrastructure, and respond quickly to any water-related issues in your community.

Access to clean and safe drinking water is a fundamental human right and an essential component of public health and well-being. To ensure the availability of this vital resource, effective management, monitoring, and dissemination of information about drinking water sources, quality, distribution, and consumption are imperative. In response to these needs, the development of a web portal for a Drinking Water Details System (DWDS) has emerged as a significant technological advancement in the domain of water resource management.

The DWDS portal is meticulously designed to achieve the dual objectives of enhancing transparency and optimizing efficiency in the multifaceted domain of drinking water management. In this introduction, we will explore the pivotal objectives, core functionalities, and the profound significance of this portal in the context of delivering safe and reliable drinking water to communities.

II. LITERATURE SURVEY

TITLE: A Web portal for safe drinking water

AUTHOR: C. Nivetha, S.P. Sangeetha

ABSTRACT: Water is the basic need for survival of all living beings. It also supports the economic growth of the country in terms of agricultural and industrial developments. Only 1% of water is fit to use out of the 71% that is available on Earth. Remaining 70% of water is being polluted with organic and inorganic matters, chemicals and other

contaminants by various natural and human activities. This study is a review of various examinations done on some important Indian water bodies on its quality. This paper deals with the water quality analysis and determining the inception that spoils the quality of water. The analysis of water quality in terms of its physio-chemical properties proves that most of the water bodies are being polluted by industrial activities and appropriate water management schemes or treatment should be done to protect the water quality. It has also been recorded that the agricultural soil is affected due to the presence of excess heavy metals.

TITLE: An Integrated Web Portal for Water Quality Monitoring through Wireless Sensor Networks

AUTHOR: Lule Ahmedi, Figene Ahmedi, Besmir Sejdiu

ABSTRACT: Wireless sensor networks (WSNs) are aiding water quality monitoring with support for real-time and remote quality measurements in terrain. Environmental monitoring portals receiving data from sensors have been a practice since a while among researchers. However, the Web portal introduced here is essentially an integrated portal since it supports modelling and management of both, the observational stream data on water quality coming from wireless sensors – dynamic data, as well as of the data describing the WSN itself, its devices and the corresponding site allocation data – static da-ta. Access is given to a wide range of individuals, from water experts to WSN engineers, to general public. Experts' module infers statistics about water parameters given the experts' data and rules. The portal is further distinguished for its level of scalability: it allows adding with ease new components, like add certain new regulatory documents for water quality, and directly compare data measured by sensors with corresponding quality standards. The aim is to enrich the portal with semantics in future.

TITLE: Technologie Online Drinking Water Quality Monitoring: Review on Available and Emerging

AUTHOR: Syed Imran, H. Najjaran, muinul H. Banna, Alex Francisque

ABSTRACT: Online drinking water quality monitoring technologies have made significant progress for source water surveillance and water treatment plant operation. The use of these technologies in the distribution system has not been favorable due to the high costs associated with installation,

maintenance, and calibration of a large distributed array of monitoring sensors. This has led to a search for newer technologies that can be economically deployed on a large scale. This paper includes a brief description of important parameters for drinking water and current available technologies used in the field. The paper also provides a thorough review of the advances in sensor technology for measurement of common water quality parameters (pH, turbidity, free chlorine, dissolved oxygen, and conductivity) in drinking water distribution systems.

TITLE: IoT based smart water quality monitoring system.

AUTHOR: Varsha Lakshmikantha, Anjitha Hiriyannagowda, Akshay Manjunath, Aruna Patted, Basavaiah.

ABSTRACT: Pollution of water is one of the main threats in recent times as drinking water is getting contaminated and polluted. The polluted water can cause various diseases to humans and animals, which in turn affects the life cycle of the ecosystem. If water pollution is detected in an early stage, suitable measures can be taken and critical situations can be avoided. To make certain the supply of pure water, the quality of the water should be examined in real-time. Smart solutions for monitoring of water pollution are getting more and more significant these days with innovation in sensors, communication, and Internet of Things (IoT) technology. In this paper, a detailed review of the latest works that were implemented in the arena of smart water pollution monitoring systems is presented. The paper proposes a cost effective

and efficient IoT based smart water quality monitoring system which monitors the quality parameters uninterruptedly. The developed model is tested with three water samples and the parameters are transmitted to the cloud server for further action. water quality perceptions, discusses existing surveys that ask questions on water quality, and outlines information on actual water quality data that are available for the United States. Past research has shown that though most householders in the U.S. view their water quality favourably.

III. SYSTEM ANALYSIS & DESIGN
EXISTING SYSTEM

The existing system for accessing drinking water details often relies on scattered and outdated information sources, making it challenging for the public to access up-to-date and comprehensive data about their water supply. These systems typically lack user-friendly interfaces, making it difficult for users to understand and interpret the information. Moreover, there is limited interaction between water utilities and the public, resulting in a lack.

LIMITATIONS
- Limited Access to Information
- Lack of Transparency
- Reduced Accountability
- Inefficient Communication

PROPOSED SYSTEM

The proposed web portal for drinking water details system seeks to revolutionize the way users' access and interact with water-related information. It will provide a centralized and user-friendly platform, offering real-time and accurate data about local water supplies. This proposed system will foster transparency by enabling direct communication between water utilities, regulatory bodies, and the public. Additionally, it will empower individuals and communities to actively participate in water conservation efforts and raise awareness about the importance of clean drinking water.

ADVANTAGES
- Accessibility
- Transparency
- Accountability

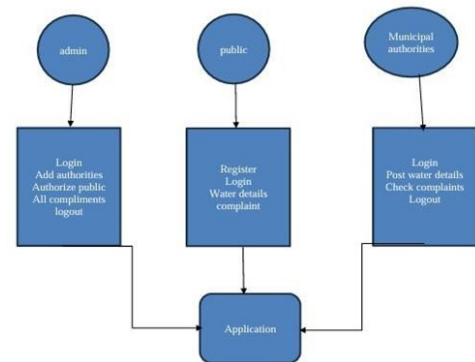- Efficient communication

SYSTEM ARCHITECTURE

Fig. SYSTEM ARCHITECTURE

IV. IMPLEMENTATION
MODULES
- ADMIN
- MUNICIPAL AUTHORITIES
- PUBLIC

MODULE DESCRIPTION
1. ADMIN

In this application the admin is one of the Modules and here the admin can directly login with the application. And the admin can add the authorities, Authorize public and view all complaints.

2. MUNICIPAL AUTHORITIES

Here the municipal authorities can login with the application and the municipal authorities perform some actions like post water details, and check complaints.

3. PUBLIC

Here the public is also one of the modules the public can register with the application and public should authorize by the admin, then only the public can login into the application, and the public can perform the following operations such as check the water details, complaint on water and check the complaint status.

V. SCREENSHOTS

FIG-5

FIG-9

FIG-10

VI. CONCLUSION

CONCLUSION

A web portal for safe drinking water is an essential resource for ensuring the well-being and health of communities around the world. In conclusion, such a portal plays a crucial role in addressing various aspects related to safe drinking water, including information dissemination, access to critical resources, and raising awareness. It serves as a centralized platform for:

1. Information Dissemination: Providing comprehensive information on water quality standards, water treatment processes, and water-related regulations to educate the public and empower them with knowledge about safe drinking water.

2. Access to Resources: Offering access to resources such as water quality reports, testing kits, and contact information for relevant authorities, enabling individuals and communities to monitor

and address water quality concerns effectively.

3. Community Engagement: Facilitating community engagement through forums, discussion boards, and educational materials to foster a sense of shared responsibility for safe drinking water and encourage collaboration on water-related issues.

4. Emergency Response: Providing real-time updates on water quality in case of emergencies, natural disasters, or contamination incidents, helping communities take immediate action to safeguard their health.

In summary, a web portal for safe drinking water is a vital tool in the effort to ensure that people have access to clean and safe water. It promotes transparency, awareness, and community involvement, all of which are crucial in maintaining and improving the quality of drinking water, thereby contributing to the health and well-being of individuals and communities.

FUTURE SCOPE

The future scope of a web portal for safe drinking water is filled with potential for addressing global water quality challenges and improving access to clean and potable water. Here are some key areas of development and opportunities for such a portal:

➢ Data Analytics and AI Integration: Implementing advanced data analytics and artificial intelligence (AI) can help predict and detect water quality issues in real-time. AI algorithms can analyse data from various sources, such as sensors, environmental data, and water quality reports, to identify trends and anomalies, allowing for more proactive responses to water contamination and quality concerns.

➢ Mobile Applications and IoT Devices: Developing mobile applications and integrating Internet of Things (IoT) devices can make it easier for individuals to monitor their own water quality and contribute to a broader database. Users can use smartphone apps to check water quality, report issues, and receive alerts, creating a more participatory and engaged user base.

➢ Geographic Information System (GIS)

Mapping: Implementing GIS technology can help users visualize water quality data on interactive maps. This feature can be particularly useful for identifying areas with poor water quality, tracking pollution sources, and planning infrastructure improvements.

➢ Water Quality Certification and Standards Tracking: Creating a section on the portal dedicated to tracking and updating water quality certifications, standards, and regulations can help users stay informed about changes and ensure compliance with the latest safety guidelines.

➢ Collaboration with NGOs and Government Bodies: Collaborating with non-governmental organizations (NGOs), governmental agencies, and water experts can enhance the portal's credibility and effectiveness. These partnerships can help with data collection, quality assessment, and policy advocacy.

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