

# An Approach On Water Purifier Service And Supervision Using Mobile Application

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## Abstract:

The Water Purifier Service Supervision Mobile Application is an innovative solution designed to streamline the supervision and management of water purifier services. This mobile application empowers users to conveniently monitor, schedule, and track the maintenance and servicing of their water purifiers, ensuring the continuous supply of safe and clean water for drinking. It's crucial to have access to clean, safe drinking water for maintaining public health and well-being. Regular maintenance and servicing of water purifiers are crucial to ensure optimal performance and water quality. However, keeping track of service schedules and coordinating with service providers can be challenging for users. The application enables customers to simply navigate through the many features and functionalities thanks to its user-friendly interface. It provides a seamless user experience, ensuring accessibility for individuals with varying levels of technical proficiency.

Users can schedule service appointments for their water purifiers through the application. The system sends automated reminders to ensure timely servicing and maintenance, reducing the risk of missed appointments. The application maintains a database of authorized service providers for water purifiers. Users can access information such as contact details, ratings, and reviews of service providers, facilitating informed decision-making. Users receive real-time updates on the status of their service requests, including confirmation, technician arrival time, and service completion. This enhances transparency and allows users to track the progress of their service appointments. The Water Purifier Service Supervision Mobile Application empowers users to take an active role in managing their water purifier services. By providing a centralized platform for scheduling, tracking, and monitoring service appointments, the application ensures the regular maintenance and optimal performance of water purifiers, ultimately promoting the availability of safe and clean drinking water.

**Key words:** Water, Purifier, Service, Mobile, Application.

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## I. Introduction

Water purifiers play an important part in ensuring access to clean and safe drinking water. The purpose of water filters is to eliminate various pollutants in water, including bacteria, viruses, parasites, chemicals, heavy metals, and other harmful substances. These contaminants can pose serious health risks when consumed, leading to waterborne diseases and long-term health issues. Purifiers help eliminate these contaminants, making the water safe for consumption. The main source of waterborne illnesses such as cholera, typhoid, dysentery, and hepatitis is contaminated water. Water purifiers act as a barrier against these diseases by effectively removing or inactivating the pathogens present in the water. They provide a reliable and cost-effective solution to ensure that water-related illnesses are prevented. Some water sources may contain impurities that affect the taste and odor of the water. Water purifiers help improve the overall quality of water by removing unpleasant tastes, odors, and discoloration caused by chemicals, pollutants, or natural sources. This makes the water more palatable and encourages regular consumption, promoting proper hydration and overall well-being. Water sources may contain harmful chemicals like chlorine, pesticides, industrial pollutants, and heavy metals such as lead, mercury, and arsenic. Long-term exposure to these substances can negatively impact one's health, especially in vulnerably situated groups like children and pregnant women. Water purifiers equipped with Reverse osmosis systems and activated carbon filters are efficient ways to get rid of these chemicals and heavy metals, safeguarding health. Dependence on bottled water as an alternative to safe drinking water can contribute to environmental issues such as plastic waste and carbon emissions. Using water purifiers eliminates the need for bottled water, reducing plastic waste and the environmental impact associated with its production, transportation, and disposal. It promotes a more sustainable approach to accessing clean drinking water. Investing in a water purifier is a cost-effective long-term solution compared to regularly purchasing bottled water or relying on alternative water sources. While the initial cost of a water purifier may vary depending on the type and technology, it significantly reduces recurring expenses associated with buying bottled water. Over time, it proves to be an economical choice and helps save money.

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The Water Purifier Service Supervision Mobile Application is an innovative solution designed to address the challenges associated with the maintenance and servicing of water purifiers. access to water that is both clean and safe is a fundamental requirement for community health

as shown in Figure 1, and regular servicing of water purifiers is essential to ensure their optimal performance. However, managing service schedules, coordinating with service providers, and tracking maintenance history can be a complex task for users. The Water Purifier Service Supervision Mobile Application aims to simplify and access the supervision and management of water purifier services. By utilizing the power of mobile technology, this application empowers users to conveniently monitor, schedule, and track the servicing of their water purifiers, ensuring a continuous supply of safe and clean drinking water.



**Figure 1: Water Purifier Service**

## **II. Literature Review**

V. Kasturi Rangan[1], The monsoon had a significant impact on India's water supplies.. There are serious water shortages for use in agriculture, industry, and home use as a result of unsustainable water consumption brought on by rising demand, developmental pressures, and socioeconomic activities. In India, access to drinking water sources increased to 89 percent (96 per cent in urban areas and 86% in rural areas) in 2006, and access to sanitary facilities increased to twenty-eight percent fifty-two percent in urban areas and eighteen percent in rural areas).However, no Indian town had a home water supply that was available around-the-clock.. For instance, forty percent of the water that was intended for consumers was frequently lost due to the city of New Delhi's badly serviced transmission lines and systems. By just providing a little amount of water for a couple of hours each day, water was rationed.

Yoon-Young Chun[2], This essay contrasts the environmental effects of the traditional producing and marketing business model with those of the renting business model. By creating scenarios for the administration and upkeep of the traditional and lease business models, the case study analyzes a residence's use water purifier. Exploring ways to make the leasing model more environmentally friendly when it comes to of resource usage and impact on the environment is another goal.

Kun\_Zhou[3], Investigate cutting-edge approaches and useful uses of client service system planning. Rebuild the item's service network based on its functionality and behavior. By using techniques such as activity design, utility modeling, operational mapping, and demand and value analysis, among others, the concept design of a household water purifier is generated, and problems with the method of installation are addressed. In order to investigate the goods and service system of residential water purifiers, this research offers a novel approach.

Hammer, Donald A., and Robert K. Bastian [4], The idea of a product-service system has drawn more and more attention as a way of ensuring environmentally friendly production and utilization. Despite the fact that certain tools have been proposed for PSS design, prior tools largely concentrated on conceptually identifying the interaction among characters. Even while it is important and can't be ignored, in a practical setting, what matters more is to depict the precise flow or interaction of PSS elements, taking into account goods and services.

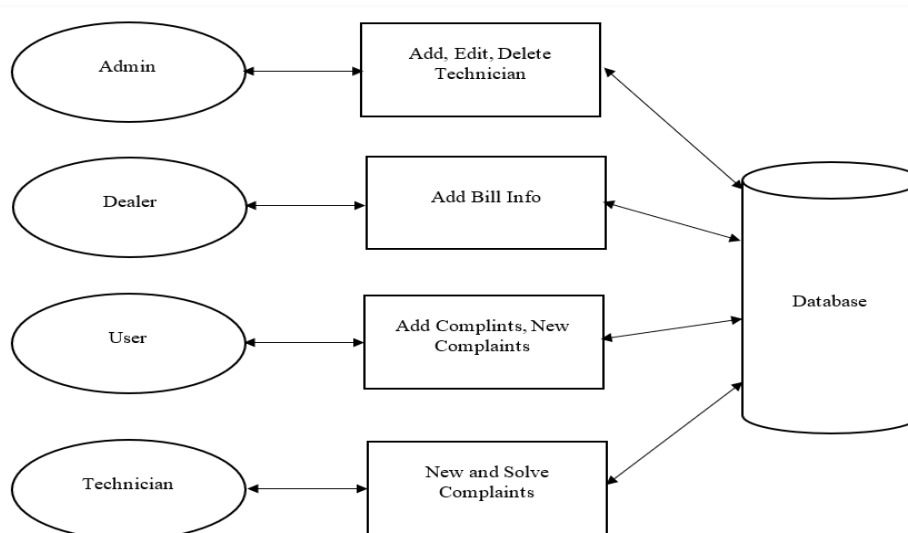
Lihua Yin[5], In this study, we thoroughly examine the features of DNSWT assaults in 5G-enabled SIIoT networks. We then develop Water Purifier, a cooperative and stacked defense system, to defend the SIIoT networks against DNSWT threats.

## **III. Methodology**

A web and Android application called "Water Purifier Service" was created for use by customers, dealers, and technicians, and it offers complete information about the products, complaints made about them, the status of the complaint's resolution by the technician, and the accurate uploading of bills by dealers in a timely manner.

Customers, dealers, and technicians can log into this program using secure user credentials, preventing illegal access and ensuring the security and safety of the data it contains. This program is intuitive and comfortable enough for anyone to use it efficiently.

They can obtain accurate information on complaints about the things they bought thanks to an application developed utilizing SQL as its backend and ASP.Net as its front end. Customers who have voiced concerns items will have those complaints assigned to the appropriate technicians, who will then be if given the chance to update the work progress as necessary.



**Figure 2: Water purifier service Architecture**

### 1. Project Planning and Requirements Gathering:

- Define the scope of your water purifier service application.
- Identify the target audience and their needs.
- Determine the features and functionalities required.

### 2. UI/UX Design:

- Design the user interface (UI) to be intuitive and user-friendly.
- Produce mockups and wiring diagrams to see how the app will look.
- Keep navigation and interaction in mind.

### 3. Backend Development:

- Set up a backend server to manage data and user accounts.
- Choose a suitable technology stack (e.g., Node.js, Django, Firebase) for the backend.
- Develop APIs for user registration, login, and data storage.

## IV. Implimentation

### 1. Implement User Authentication:

- Integrate a user authentication system using Firebase Authentication or a custom backend.
- Implement user registration and login screens.

### 2. Create Service Request Forms:

- Design and implement forms for users to describe their water purifier issues.
- Capture relevant details, such as purifier model, issue description, and location.

### 3. Implement Appointment Scheduling:

- Develop screens for scheduling service appointments.
- Allow users to choose a convenient date and time.

### Algorithm to implement Water Purifier Service Supervision Mobile Application

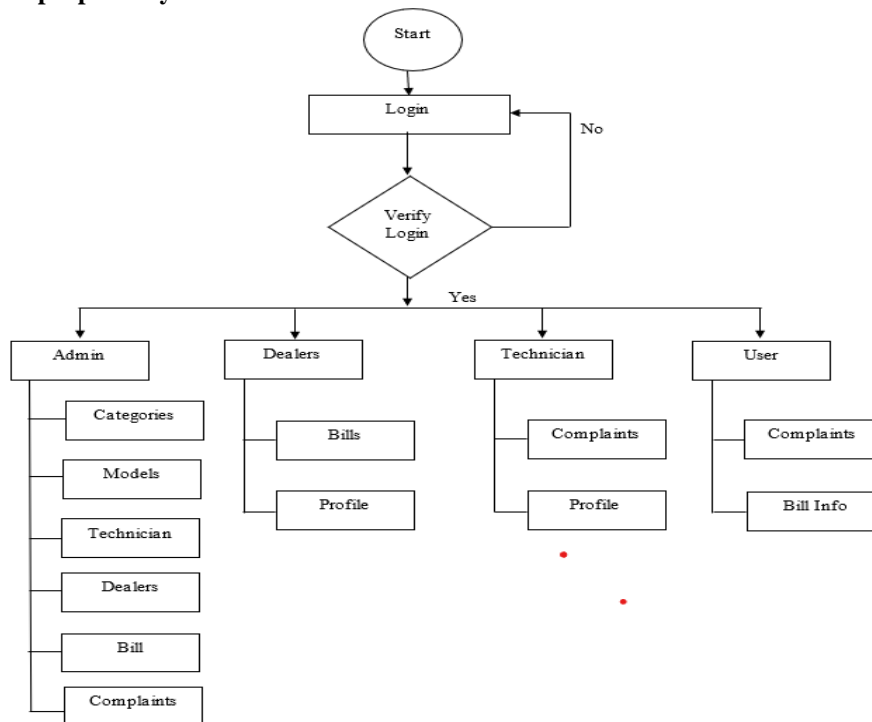
**Step 1:** Display the main menu options to the user

1. Schedule Service
2. Track Service

3. Service Providers

**Step 2:** if user\_input == "Schedule Service"  
 then  
 store service request  
 status = pending  
 else if user\_input == "Track Service"  
 then  
 display status as "Pending" or "In progress" or "Completed"  
**Step 3:** if user\_input == "Service Providers"  
 Then  
 Display "Service Providers Name and details"  
**Step 4:** Exit

**Flow diagram on proposed system**



**V. Result And Discussion**

In the Figure 3, The sign-in page for the water purifier service Android app offers users secure access to their accounts. Users enter their registered user id and password, which are validated against the server's database. A "Forgot Password" option allows password recovery. After successful authentication, users gain access to service requests, appointment scheduling. In the Figure 4, The post-complaint page in the water purifier service Android app enables users to report issues with their purifiers. Users input details such as purifier model, issue description, and location. Once submitted, complaints are sent to the service center for prompt resolution. Users receive a confirmation notification. In the Figure 5, view location page for the water purifier service app helps technicians to find customer address easily.

**VI. Conclusion**

The Water Purifier Service Supervision Mobile Application offers a comprehensive solution for users to schedule, track, and manage service appointments for their water purifiers. By integrating various features and functionalities, the application enhances the overall experience of purifier maintenance and ensures the delivery of clean and safe drinking water to users.

The application streamlines the service process by providing An interface that is easy to use that makes it simple for consumers to schedule service appointments based on their convenience. Real-time notifications keep users informed about appointment status, ensuring transparency and effective communication. Users can track the progress of their service appointments, access their service history, and receive personalized recommendations for maintenance. The application also facilitates efficient service provider management by maintaining a database

of authorized technicians, along with their contact details and ratings. Users can select service providers based on their preferences and make informed decisions. The inclusion of feedback and rating features allows users to share their experiences, enabling continuous improvement in service quality.

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