AQUA: Smart Water Supplier

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Abstract.: Online shopping progress have been so drastic that it has evolved to be a part of our life. Today customer does not drive down to some shop for buying a product but preferably check over the internet for price, offers, reviews and order online. In most of the metro Politian cities water containers are purchased from shops for their basic needs of day-to-day life. The current system working procedure is customer calls/drives down to shop to order the water container by providing the shopkeeper a deliverable address and then a delivery person delivers the order to customer's house, as this system works totally offline and has lot of disadvantage. The major drawbacks in current offline system are repeated calls from and to customer, if various orders are placed from same locality the delivery person travels various times, there is no track of order, etc. This paper proposes an android application for water vessels ordering and delivery management system, where customer can order over an application by searching the nearby shops which provide the service and make payment online. This proposed system helps in overcoming the major drawbacks of current system. This application provides help for seller; it rather helps in developing digitally empowered society. [1]

Keywords.: Android, Water crisis, Delivery, Feedback.

1 Introduction.:

When a crack occurs in the water tube, water crisis occurs. Due to the crack in water tube, the water gets wasted and the area where the water supposed to go becomes impossible. Therefore, those areas suffer from water crisis until the water tube is not fixed. Throughout the crisis, the people living in those zones are not able to get water directly; hence they need to get in touch with the nearest water tanker seller who can provide the supplies to those individuals living in those areas. This common approach takes lot of time and efforts to contact to the supplier. And there becomes a good probability of miscommunication in terms of water requirements, the location and address and contacting the supplier itself becomes a monotonous task. [2] To overcome this problem, this project tries to create a platform for the end users who need water. This platform will connect the water suppliers to the end consumers with the help of a mobile application. Where users can put their location, contact details and requirements, and order the supplies in a very well-organized way. The app will have more features apart from this such as supplier's shop location, for the latest updates and so on which we will be looking further in the document. The aim of this project is to provide a user-friendly application for its users. It is developed using Java, XML and Android Studio IDE. The application will be very useful for having update on water crisis and ordering water online.

2 Problem Statement.:

Traditionally, to order water supply from a supplier, the user orders it from a phone call. This results in more manual work and good chance of miscommunication while giving and receiving the details like the location, requirements, and the user who ordered the supply. To overcome this problem, we proposed an idea of creating a mobile application through which the user will be able to order the water supply as per their requirements. This leads to less manual work and very less chance of miscommunication due to less interaction with the supplier. With this, the work becomes more efficient, and the supplier can bring the supplies directly to the location. In our day and age where people use lots of water resources for even small activity, one should know whether he will receive water today or not. Till now it is not possible to notify each individual about the today's condition regarding the water supplies. Hence, we decided to add a feature of news section where admin can push notifications on the current scenario of the supplies. If the user orders a water tanker from a supplier, the user does not know the exact location of where the supply has reached. Hence in our project, the user will be able to send the exact coordinates to the supplier for better navigation. [3]

In traditional manner, one does not know the number of water suppliers in their locality, hence we will be implementing a feature where the user will get the location and contact details of all the suppliers in their location. These are the above problem statements which we came across and try to solve them in our final year project. This project aims to develop an android application to solve problems during a water crisis by providing various suppliers location and details and a support system for their query and a notifier by creating a news section on the app. And along with this the objective of our final year project is to show the marked area on the map which will reflect water crisis affected areas. The objective is also to create a feedback section for better understanding about the user's requirements. The water ordering system will have an authentication unit which will authenticate users and activate the water ordering system for him/her. The objective of this project is also to have an easy to use and creative user interface and an efficient programming done to the application for fast user experience.

3 Background and Related Work.:

This Case study looks at the problem of setting up a shop which provides water container delivery to customer doorstep and maintenance of the system. In existing system there are few drawbacks

Problems.:

- For placing any orders customers must visit shops to know about water items and then place order and pay. In this method time and manual work is required.
- While placing an order over the phone, customer lacks the visual confirmation that the order was placed correctly.
- Every shop needs certain employees to take the order over phone or in-person, to offer a customer satisfaction and process the payment.
- In today's market, labor rates are increasing day by day making it difficult to find employees when needed. [4]

4 System Architecture.:

This system provides majorly four modules,

which are mentioned below. The system provides user friendly GUI and data flows to all modules in dynamic way. The four major modules of the system are,

Modules.:

1. Customer.
2. Seller.
3. Admin.

Customer.: This module is specifically designed for customer end. The customer must provide details like name, residential address, phone number, email-id, and password for registration of the new customer.

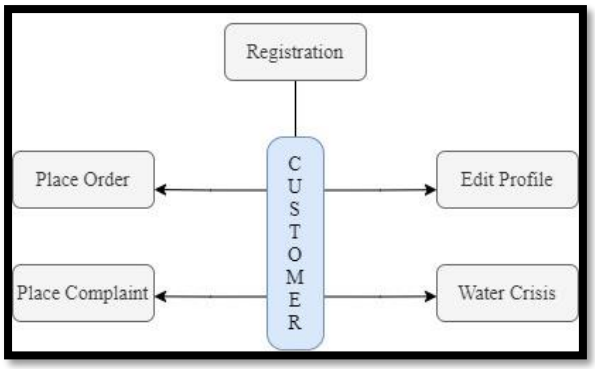

Figure 1.: Customer Privileges

The features provided in this module are.:

- Edit Profile.
- Search Store.
- Place order.
- Feedback

Seller.: This module is for seller who provides water delivery to customers. The seller must provide details for registration like name of shop, shop owner, shop address, phone number and email-id and password.

The features provided in this module are.:

- Edit Profile.
- Order Pending.
- Cancel order.
- Orders completed.
- Pending Complaint.

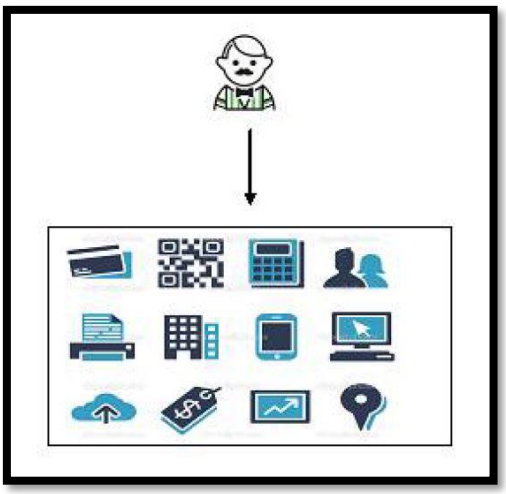

Figure 2.: Seller Privileges

5 Requirement Analysis.:

1. Hardware.:
    a. One Laptop / Desktop Computer.
    b. Multiple Mobile Phones.

2. Software.:
    a. Android Operating System.
    b. Windows / Mac operating system.
    c. Android Studio.
    d. Kotlin Programming Language.
    e. Java virtual machine.

6 Feasibility.:

1. **Technical feasibility.:** Technical feasibility focuses on the technical resources (software and hardware) available to the organization and helps to determine whether the Technical team can convert the ideas into working systems. The software

Required for our project; Android Studio is already ready with us. And hardware component is a laptop to write our application and mobile phone to run our application which both are ready.

2. **Economic feasibility.:** This assessment typically involves a cost / benefits analysis of the project. This project will be developed with minimal cost, only expense will be the existing laptop and our mobile phone.

3. **Legal feasibility.:** This assessment investigates whether any aspect of the proposed Project conflicts with legal requirements like zoning laws, data protection acts, or Social media laws. The project does not involve any legal concerns since all the Decisions will be taken under the guidance of water suppliers.
4. **Operational feasibility.:** This assessment involves undertaking a study to analyze and determine whether and how well the organization's needs can be met by Completing the project. The main objective of the project is proper allocation of Water supplier to the customer and proper tracking available to the user.

7 Methodology.: Initially the user will log in to the system to place a booking for the water supply. The user will be greeted with the user interface from where he / she can place an order. Automatically the current location of the user is fetched in the application or else he / she can change the location by typing the location. The user will enter the requirements, then he will be shown the estimated price which he has to pay the supplier at the time of delivery after this, the user will press on place order the request of the user will get pushed to the supplier he chose. In the next part, the user will be able to track his / her order in the application once the order is placed successfully. Other things which user can do are, he can read the news sections where water supply related news will be posted by the administrator. In another section of the app, the user will be able to see.

Along with this, he will be able to see the contact details and other details of the supplier. In another section of the application, he will be able to see a marked location marked by the administrator during water crises. The user will be also privileged with the Contact us and FAQs section through which he can places his / her query on the app, and which will be solved by the administration team as soon as possible. The user will also be able to edit his/her profile. Along with this, the user can rate the application and can give feedback though which we can understand the user requirements better. [5]

8 Design Details.:

i Use case.:

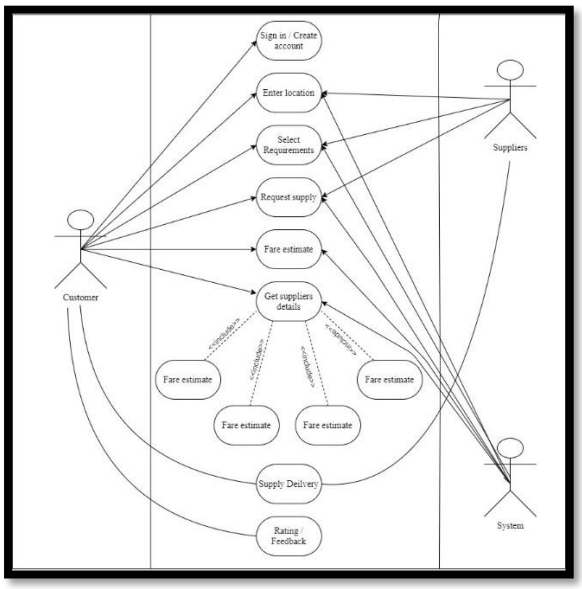

Figure 3.: Use Case Diagram

ii Sequence Diagram.:

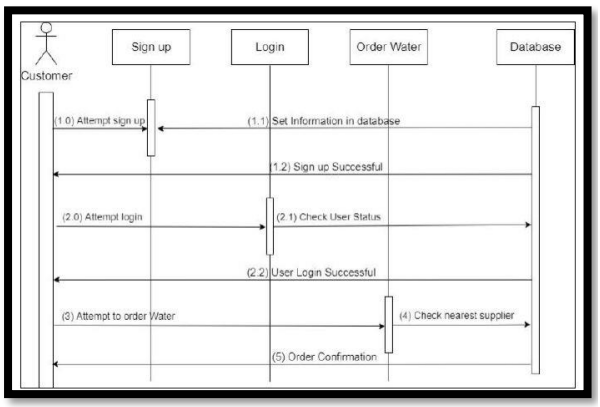

Figure 4.: Sequence Diagram

9 Future Scope.: Advancements in a project such as Better optimization can be done, live tracking of order can be added, recommendation of nearby suppliers based on customers order, currently this app is based for ANDROID user only for IOS user same app will implemented, these features are left as a future scope to work upon.

10 Conclusion.: The current working strategy is old fashioned and there is no usage of commonly used technologies like internet, & android. Thus, it can be concluded that the proposed application effectively provides the solution to current working method. This application introduces facility for customer to place orders, place complaint (if any) and give feedback to seller. It also helps the shopkeeper to maintain records systematically and reduces a lot of paperwork and manual efforts. The application provides lots of advantages like shop locator, customize orders, enhanced user interface, delivery options, order process estimate, order status and may more.

References

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