Application for Efficent Water Distribution

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Abstract: ***Technological advancements have been such that it has evolved to be a part of our life. E-commerce, a trending field ion the technological and industrial world has provided the people the luxury of shopping from home. Advancement in the field of e-commerce allows people to review the product, and shop with confidence. Cities in several Asian countries sell packaged drinking water for domestic use. Use of E-commerce in this regard, that is to order packaged water online can reduce the human effort while contributing to ease of access of small retailers and human comfort. The major drawbacks in current system of business are, repeated calls to and by a customer, there is no track of order, only cash payment etc. the system uses First Come First Serve Algorithm. A mobile application shall be developed for this purpose designed by Dart programming language.***

Keywords: Water Delivery, E-Commerce, DART

I. INTRODUCTION

Application is a computer program that can run on any mobile device such as phone, tablet, and smart watches etc. application provides the service to users with similar services to those accessed on computers. These applications are tremendously popular in last few years. There are a wide variety of application in play store. Which has been uses for different purposes such as listening music, news, get connected to peoples etc. applications reduce the manual work and its make work user friendly as now a days most people are smartphone users. For example, GAANA, UBER, SWIGGY etc. Cities and towns in certain country of Asia use packaged drinking water cans for domestic purpose. India is one of those country of Asia. where water scarcity becoming number one owe with government's own data revealing that resident in 22 cities out of 32 major cities have to deal with daily shortage. The distribution of water cans from a retailer to the house of a customer is a tedious task. To ease the use of this work, we propose to design a mobile application. Which will reduce the manual work and will provide various medium of payment. The application for the module shall be developed using Dart programming language. Dart is an effective development language. Apart from the retailer and the customer, a delivery boy is to be involved for the water can delivery.

II. EXISTING SYSTEM DRAWBACK

- If we need water we have to 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, we lack 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.
- In a shop we can get one or at most two brand but not all.

III. PROPOSED SYSTEM

This paper is based on mobile application development which will help to develop an application. Proposed system will reduce most drawbacks of existing system. proposed system is an application it will reduce the manual work and provide the various option of payment. Since the system uses First Come First Serve Algorithm**.** This application will provide equal opportunity for every shopkeeper and more option to customers. this application will provide more brand option for customer which they won't get on existing system.

IV. ALGORITHM USED

First in, first out (FIFO), also known as first come, first served (FCFS), is the simplest scheduling algorithm. FIFO simply queues processes in the order that they arrive in the ready queue. In this, the process that comes first will be executed first and next process starts only after the previous gets fully executed.

V. SYSTEM ARCHITECTURE

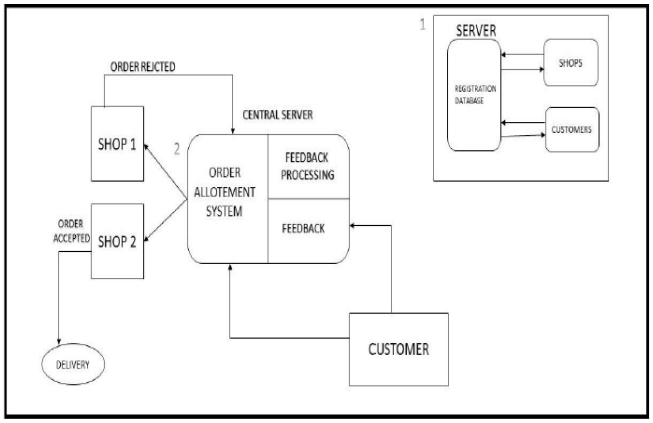

Fig. System Architecture

This system provides majorly three module which are mentioned below. System provide user friendly GUI and data flow to all modules in dynamic way.

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A. Modules

1. LOGIN/REGISTRATION
2. ORDER MODULE
3. DELIVERY MODULE

Login/Registration Module

This module specifically designed for customers and shops record. customers and shops both have to provides details like name, address, phone number and e-mail id to get register with application and to receive user-id and password from central server where password can be changed later by customers and shops. When user will login. Their details will be sent to central server if detail will match in database. then user will be logged on else throw out. Key feature of this model is profile of both customers and shops.

B. Order Module

This module is designed only for ordering purposes. customer will place their order which will go to central server. Server will send this order to the shops according to First Come First Serve Algorithm. If order is accepted by shop then it will notify central server else same order will go in loop till it is accepted by any shops. once order accepted it will go for delivery module. key feature of this model is confirmation of order.

C. Delivery Module

This module is designed for delivery and payment purposes. This module consists delivery person details as well. Once the order is confirmed by shop then it will go for payment option. when payment mode option is selected delivery person will go for delivery of water on customers address.

VI. METHOLOGY

This paper is influenced by digital India scheme and making all possible work digital. Existing system has drawbacks like; slow, includes lots of manual work, no e - payment, lack of delivery methods and many more. The proposed solution in this paper eases of everything and make the system digital. The working of the system is shown in a flow chart fig (). The customer first registers by filling up all required details in the registration form of an application. When the order needs to be placed customer searches for the nearby shops that delivers the water cans, and places the order. Once central server receives the request from customer this request will set to shop. If shop accept this request then it will pass notification to central server else this request will go into loop till this request accepted by any shop. When shop confirms the order, which is next moved to delivery module. Delivery module will provide the payment mode option. once payment is done delivery person will go for delivery of water cans to customers address. The multiple markers API of Google maps are used and shortest path between those markers is calculated and optimized route is displayed on delivery person application. Once the delivery is done the delivery person changes the order status to delivery success. In this all mean while the customer gets an option to track order also. The payment method can be online payment or e wallet of the application.

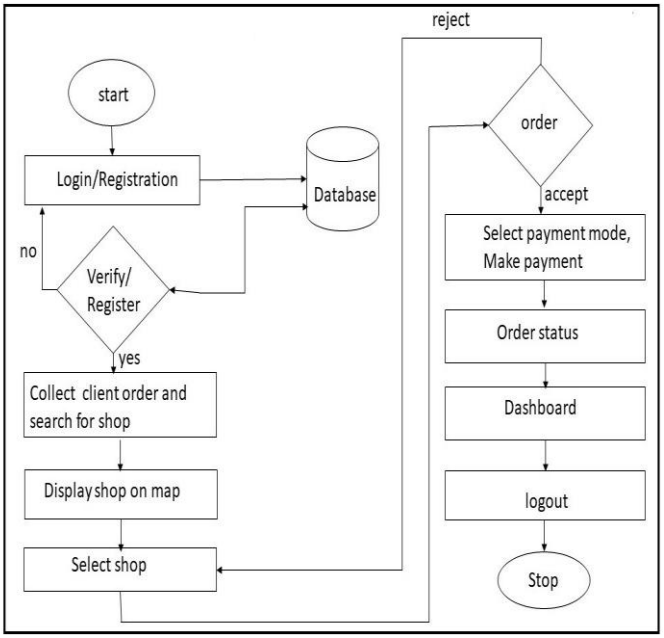

Fig. 2. Methodology Flowchart

VII. CONCLUSION

The current working System is least effective and there is no usage of commonly used technologies like internet, android and digital money. 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 and track orders. It also helps the shops to maintain records systematically and reduces a lot of paper work and manual efforts. The application provides lots of advantages like shop locator, customize orders, enhanced user interface, payment options, delivery options, order process estimate, order status and may more.

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