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GettSett: A Courier Delivery Application

Abhishek Rajesh Sharma[1], Akanksha Rohidas Hande[2], Sakshi Sanjay Chalke[3], Sonali Navnath Rathod[4], Dr. Siddharth Hariharan[5]

[1, 2, 3, 4]*Department of Computer Engineering, Terna Engineering College Nerul West, Navi Mumbai*

[5]*Assistant Professor, Department of Computer Engineering, Terna Engineering College Nerul West, Navi Mumbai*

Abstract: ***A courier delivery application is the solution that automates the courier delivery process, by delivering the parcel from one place to another very efficiently. Therefore, this platform is created to provide safe and fast delivery which also include part-time employment for people who join as a delivery partner. There is also an admin page that includes all the details regarding both end the user and the delivery partner. So this project includes two Android applications; one website is connected with the help of Firebase. The delivery which is created by the user will be pushed to the application which is created for a delivery partner. All the details of the user and the delivery partner will be stored and maintained on the admin page for security purposes. Many functions such as notification, query section, live tracking, rewards and coupons, wallet, calculator, etc. are included in the getter. So the platform GettSett is a combination of Getter (the application which provides employment) and Setter for the user who wants to deliver a parcel from one place to another.***

Keywords: Getter, Setter, Admin page, Firebase, Android application.

I. INTRODUCTION

Courier delivery means sending the parcel from one place to another. In today's world courier delivery has become very essential in every sector of life. Sending the parcel in less time and also with safety is the need. According to the present applications, there are some disadvantages which are encountered, more commission, pending orders for longer periods of time, and not handling the parcel properly. This platform is the combination of three individual platforms which are synchronized with the help of Firebase. The smartphone has a custom Android app installed that is Getter which will be used by the user who wants to deliver the parcel. The user will create the order by adding all the details of the items then by calculating the amount with the help of distance and the weight of the parcel the amount for that delivery will be allocated. The calculator is basically the ML model prepared by training and testing the dataset to give the proper and precise answer. The order from the getter app will be pushed to the setter app now the delivery partner which is present in that area will complete that order. The admin page will contain all the details regarding the user who has placed the order and the delivery partner who is completing that order. The tracker system is also present on the website for security purposes. The Android app interacts with the web server using Firebase.

The courier delivery application has transformed the way businesses and individuals send and receive packages, making it more convenient, reliable, and cost-effective. Security is the most important factor hence document verification of both applications will be performed by the website (admin page).

II. LITERATURE SURVEY

A. Mohd., R. A. Rashid, A. H. F. Abdul Hamid, M. A. Sarijari, M. R. A. Rahim, H. Sayuti, M. R. Abdul Rashid [1] in the paper Development of android-based apps for courier service management that will keep the track and choose the best route to the address and notify the customers before arriving so that the customers are ready to receive the parcel. This last mile route tracking for parcel delivery will provide the basis for an efficient courier service system.

Faizal Johan Atletiko [2] in paper Development of Android Application for Courier Monitoring System will help distributors in order to monitor location of the courier, so that the business process of both parts would run properly. It is basically the courier monitoring system which consist of pharmacy Distribution, medicine courier and Android C2DM.

Agu, MN, Nwoye CI and Ogbuokiri BO [3] in the paper Enhancing Courier Service with the Development of an Interactive Mobile App in Android Platform will ensure that customers easily participate effectively in pre-courier, courier and post-courier activities which will drastically reduce the unbudgeted cost of transaction and build trust in the courier service system.

S. Prasad and A. Bhattacharya [4] in paper Design and Development of Courier Delivery Mobile Application, this study presents the design and development of a courier delivery mobile application that allows users to book and track their deliveries in real-time. The application was developed using Android Studio and Firebase database, and it was tested and validated through user surveys.

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The study found that the application was easy to use and had a high level of user satisfaction, indicating the potential for courier delivery applications in the industry.

P. Singh and P. Goyal [5] in the paper A Comparative Study of Courier Delivery Mobile Applications, this study compared the features and usability of three courier delivery mobile applications: FedEx, DHL, and UPS. The study found that all three applications offered similar features, such as real-time tracking and secure payment options, but differed in terms of user interface and design. The study concluded that courier delivery mobile applications can significantly improve the efficiency and convenience of courier delivery services.

R. Kumar and S. Kumar [6] in their paper Optimization of Courier Delivery Routes using Genetic Algorithm, this study proposed an optimization algorithm using a genetic algorithm to optimize courier delivery routes. The algorithm was tested using data from a courier delivery company in India and was found to significantly reduce delivery time and distance travelled. The study concluded that optimization algorithms can be used to improve the efficiency and effectiveness of courier delivery applications.

III. MOTIVATION

Our application is admiringly valuable for users who want to have a safe delivery, more convenient, efficient, transparent, secure, cost-effective, and environmentally sustainable solution it also provides full-time and part-time employment as a delivery partner. It offers the following advantages to its users: -

1) *Convenience:* Courier delivery applications provide customers with a convenient way to book and track their deliveries in real time, reducing the need for phone calls or in-person visits to courier offices.
2) *Efficiency:* Courier delivery applications allow delivery personnel to optimize their routes and manage their deliveries efficiently, reducing delivery time and increasing productivity.
3) *Transparency:* Courier delivery applications provide customers with real-time tracking and instant notifications, increasing transparency and trust in the delivery process.
4) *Security:* Courier delivery applications offer secure payment options and delivery verification, reducing the risk of fraud and theft in the delivery process.
5) *Cost-effectiveness:* Courier delivery applications can reduce the cost of courier delivery services by improving efficiency and reducing administrative costs.
6) *Environmental Sustainability:* Courier delivery applications can reduce the carbon footprint of courier delivery services by optimizing delivery routes and reducing unnecessary trips.

IV. METHODOLOGY

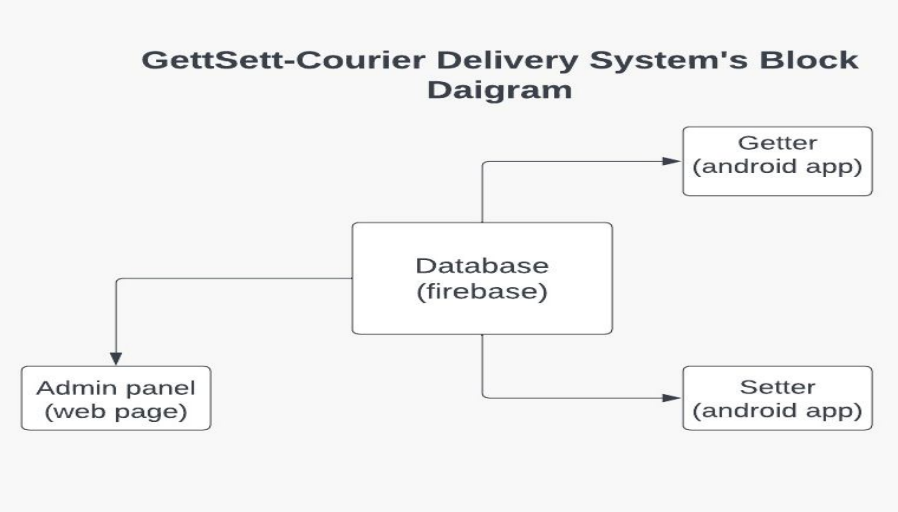


Fig. 4.1 Block Diagram

This part describes the whole architecture of the system. The architecture consists of the getter and setter, the Android app, and the web server interacting with each other.

V. PROPOSED WORK

In the proposed system, we are using different components to make the system much more flexible to work with. The system consists of three modules that are the Setter module, the Getter module, and the admin page. Setter is an application which is designed for the employment a part-time or full time it shows the delivery partner the courier delivery which is pushed by the user in the location where the partner is present on the other side this platform consists of the Getter application for the user who wants the parcel to send from one place to another, both these applications are connected by the firebase which shows the live parcel push happening between two applications. All the details regarding the parcel and the person doing the delivery are tracked and saved on the admin page which checks whether the courier delivery is happening in right place in less time. In this way, all three modules will communicate with each other for safe delivery.

A. *Getter Application*

1) *Customer Registration and Login (Getter):* The customer has to first create his account on the app. The customer details will be saved on the web server.
2) *Create Order:* The details of the parcel with distance, parcel image, and weight need to be mentioned to know the charges for that parcel.
3) *Other features of the Getter application:* Wallet which tells the balanced amount, and transaction history and also consist of add money option. Rewards and Coupons by adding them can reduce the charges. My order shows the history of all the orders the user has placed. FAQs and Queries are there to solve the user's doubts.

B. *Setter Application*

1) *Delivery partner Registration and Login (Setter):* The delivery partner has to first create his account on the app. The details will be saved on the web server, which includes some identity-proof documents like an Addhar card and photo id.
2) *OTP Verification:* After checking all the documents, the OTP will be generated on the mobile number which is mentioned in the registration.
3) *Live Delivery:* The delivery pushed from the getter application will be displayed to the delivery partner present in that location.

C. *Admin Page (Website)*

1) *Login Page:* Admin has to log in first to get access to this page
2) *Dashboard:* Many options are present in the dashboard which includes the customer and the delivery partner details.

The order when it is pushed to the delivery partner as well as delivered is also mentioned on this page with the help of notification.

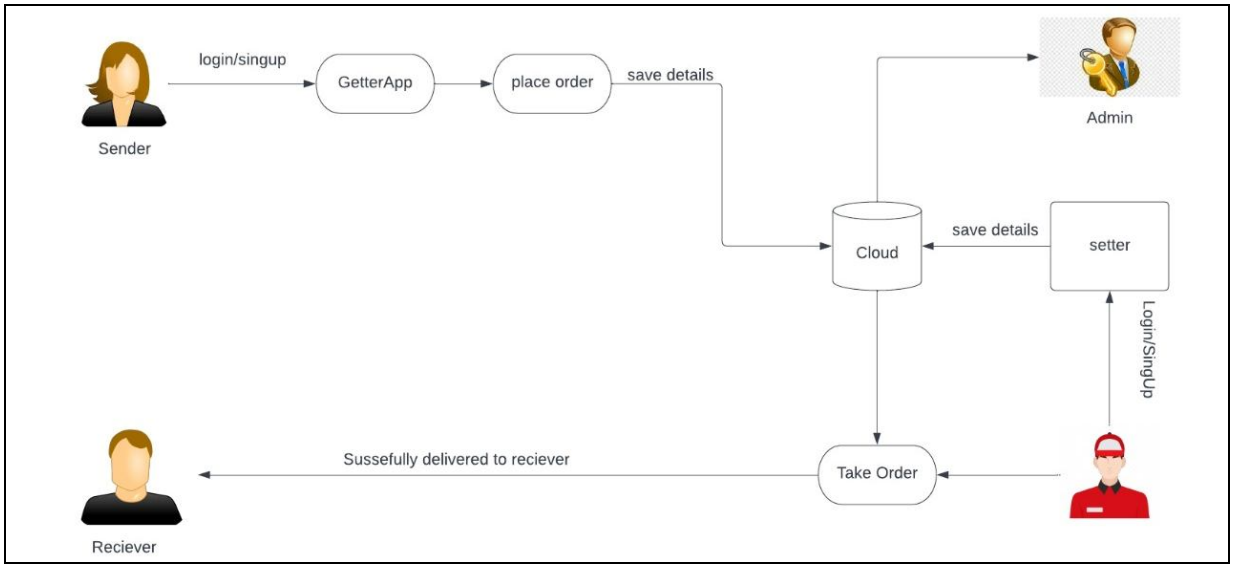


Fig 5.1 System Architecture of GettSett

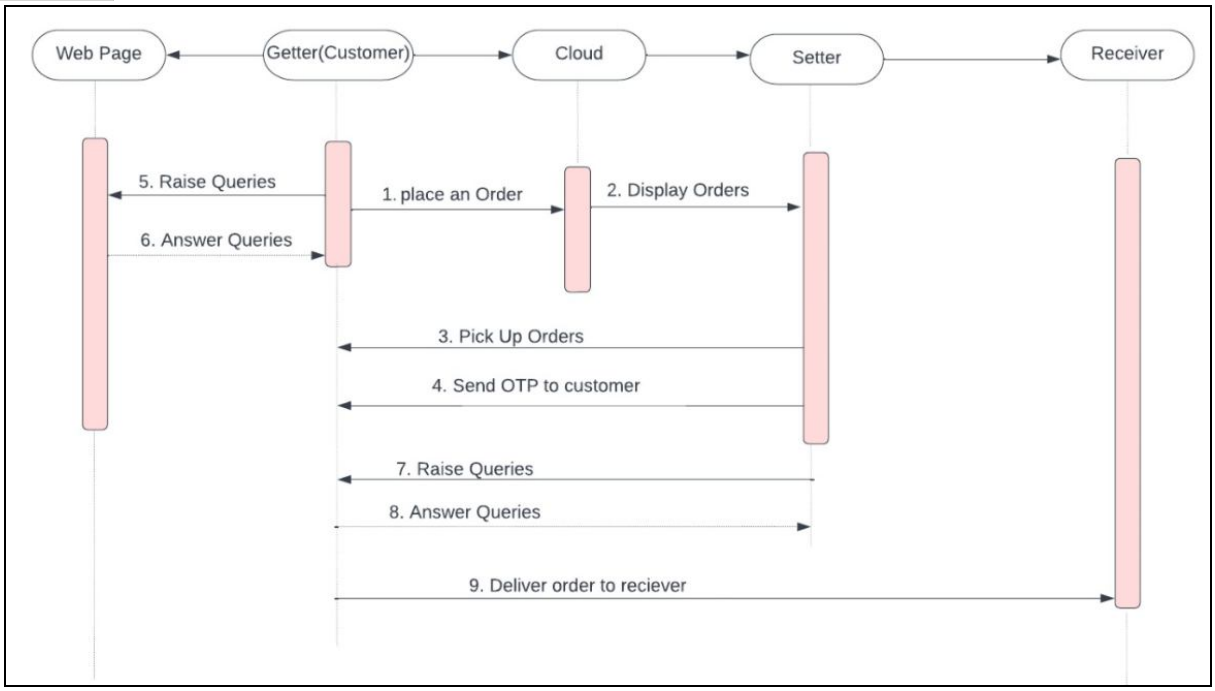


Fig 5.2 Flow of Application and Website

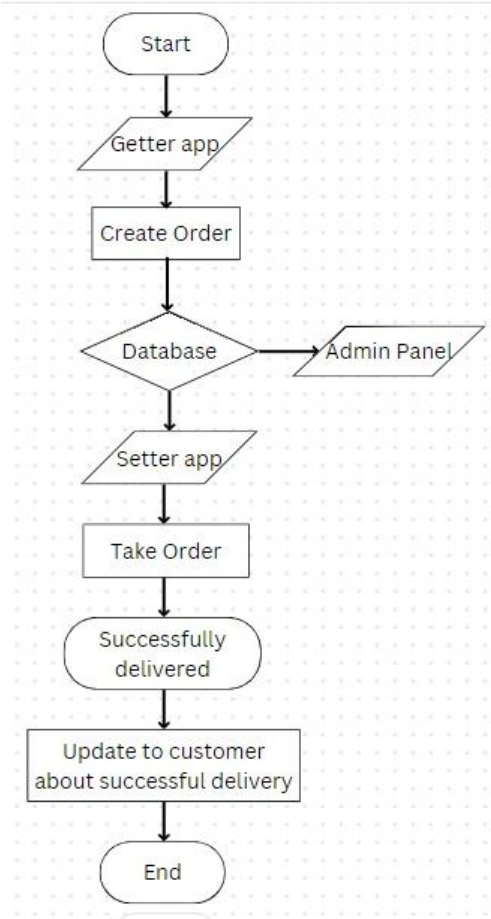


Fig 5.3 Flowchart of GettSett

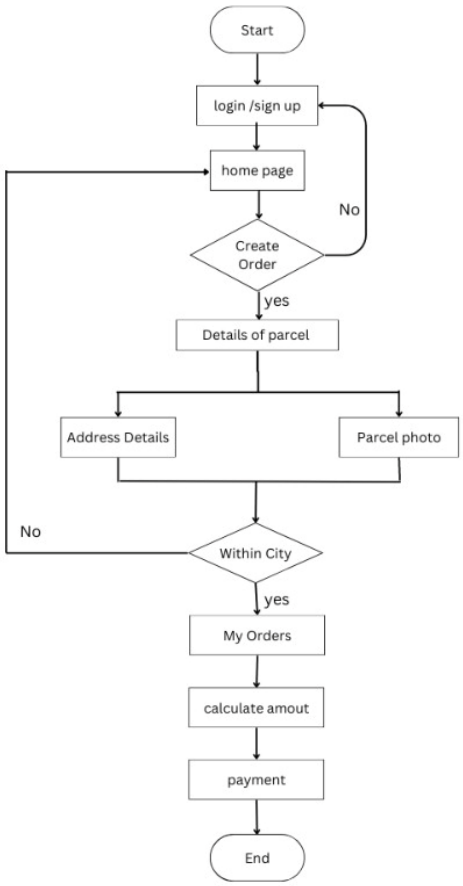


Fig 5.4 Flowchart of Getter app

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VI. RESULT AND EXPERIMENTATION

A. Getter Application

Login and Registration page

Customers need to register or log in before creating the order.

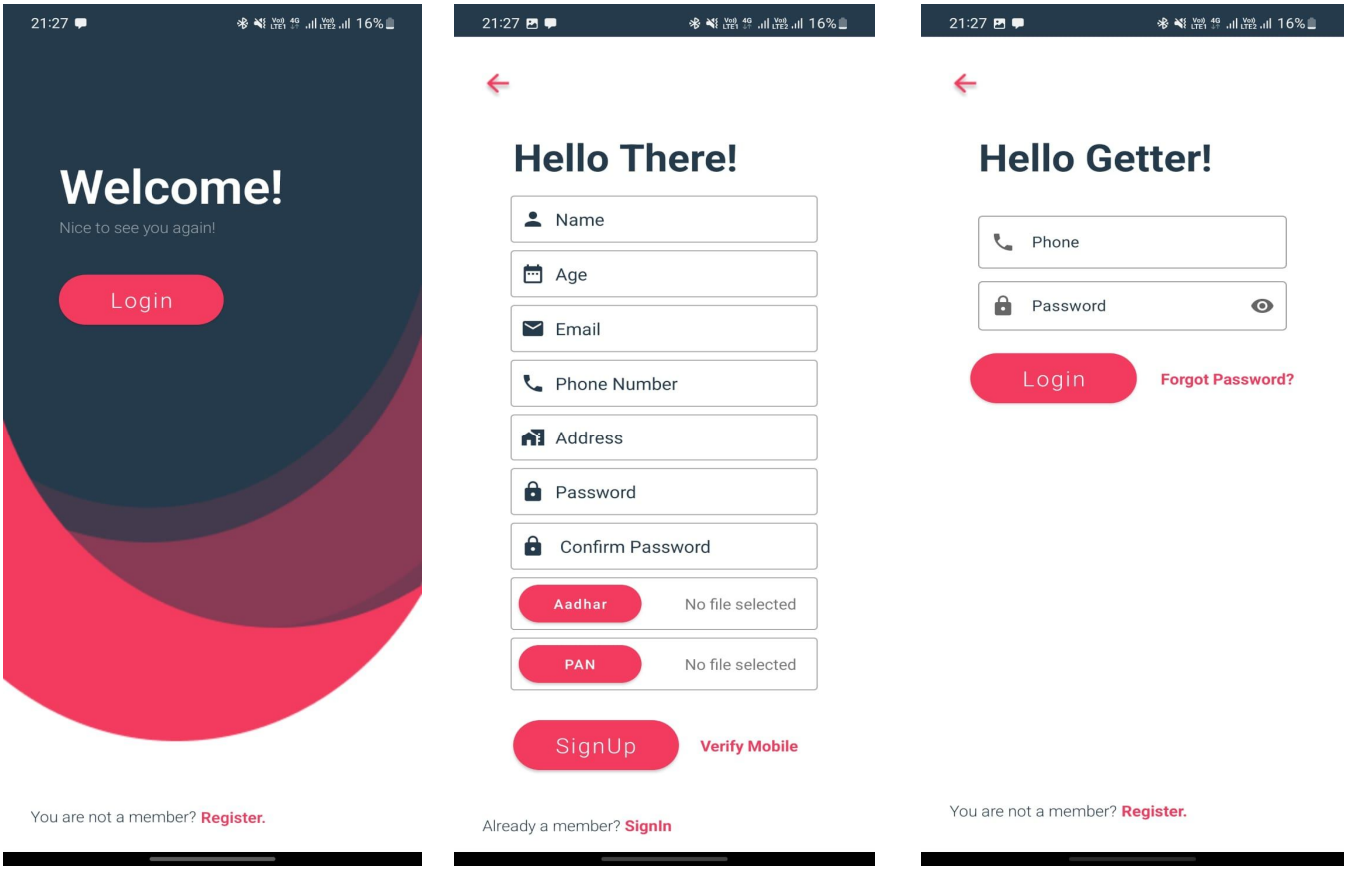


Fig 6.1 Login and Registration page of Getter Application

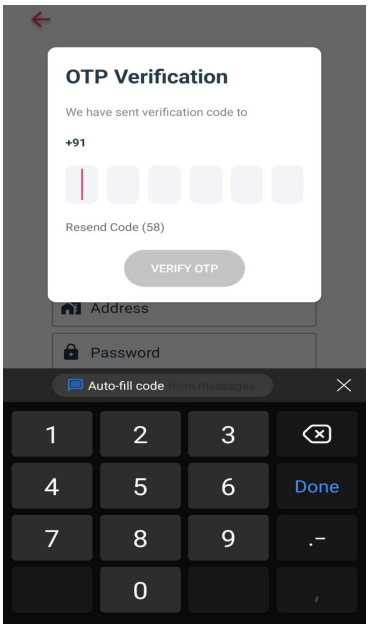


Fig 6.2 OTP Verification

After registration user needs to verify with the help of OTP which will be received on the number registered.
Home page where user will get option to book his/her order.



Fig 6.3 Home page of Getter app

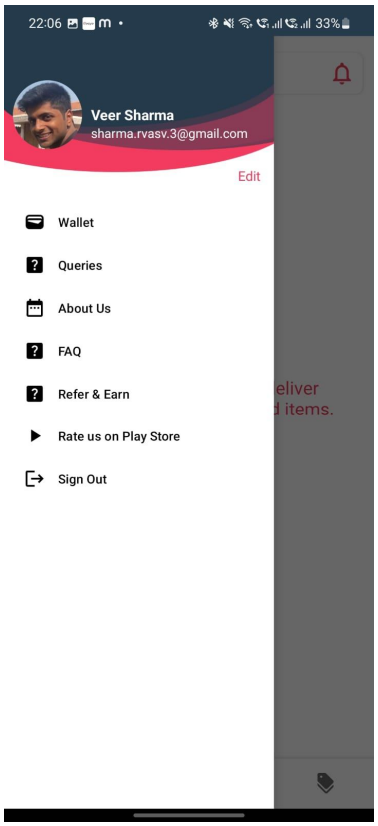


Fig 6.4 Other options in application

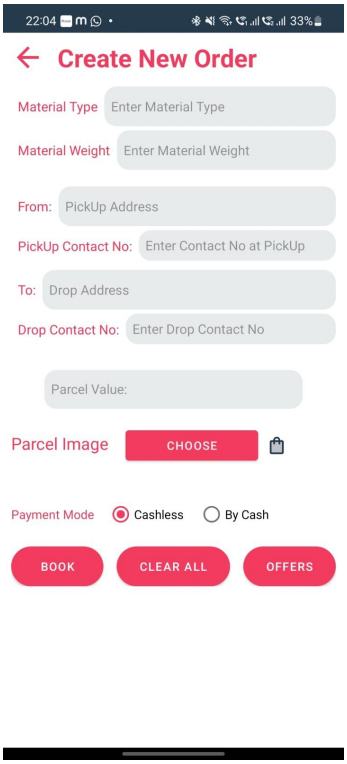


Fig 6.5 Create order page

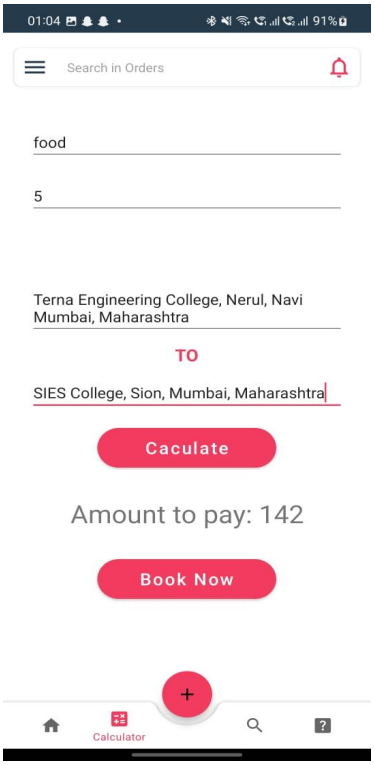


Fig 6.6 Calculate the amount

When the user visits the home page there will be a button in the bottom navigation to create an order. Create an order page consisting of some information about location, weight, parcel image, and payment options.
User can calculate the amount of the parcel by giving the details of parcel weight and location the parcel need to deliver.
After checking the amount, the user can book the order.

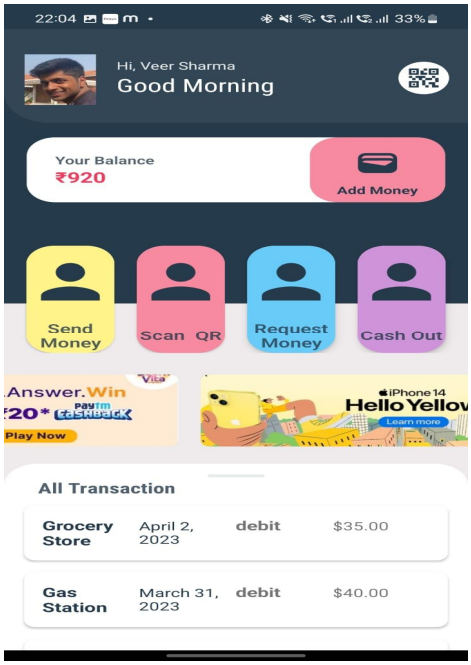


Fig 6.7 User wallet

All details of the user payment will be mentioned in the wallet section.

B. Setter Application

The home page of the setter will be divided into three parts order, active, complete. The order part will consist of all the orders which are present in the live location of that delivery partner. According to the location mentioned by the delivery partner while registering the orders will be placed. The active part will show the orders which delivery partner will be delivering and the orders which are already completed will be shown in the completed part



Fig 6.8 Orders according to location

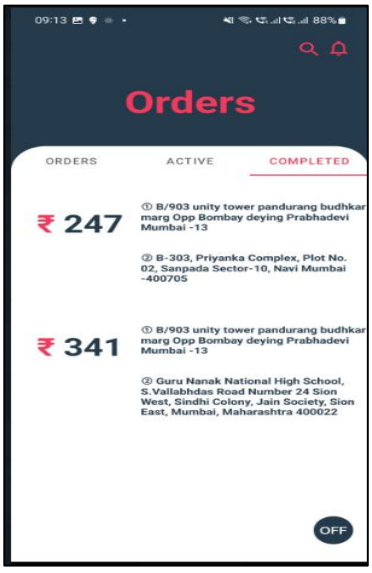


Fig 6.9 Completed orders



Fig 6.10 Order selected by Delivery partner

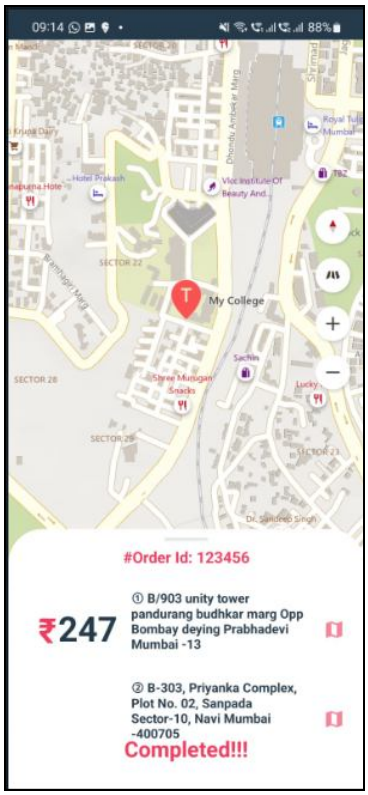


Fig 6.11 when order is completed

C. Admin Page (website)

All the components will be connected by Firebase

The admin page will contain all the details about the delivery partner and the delivery status.

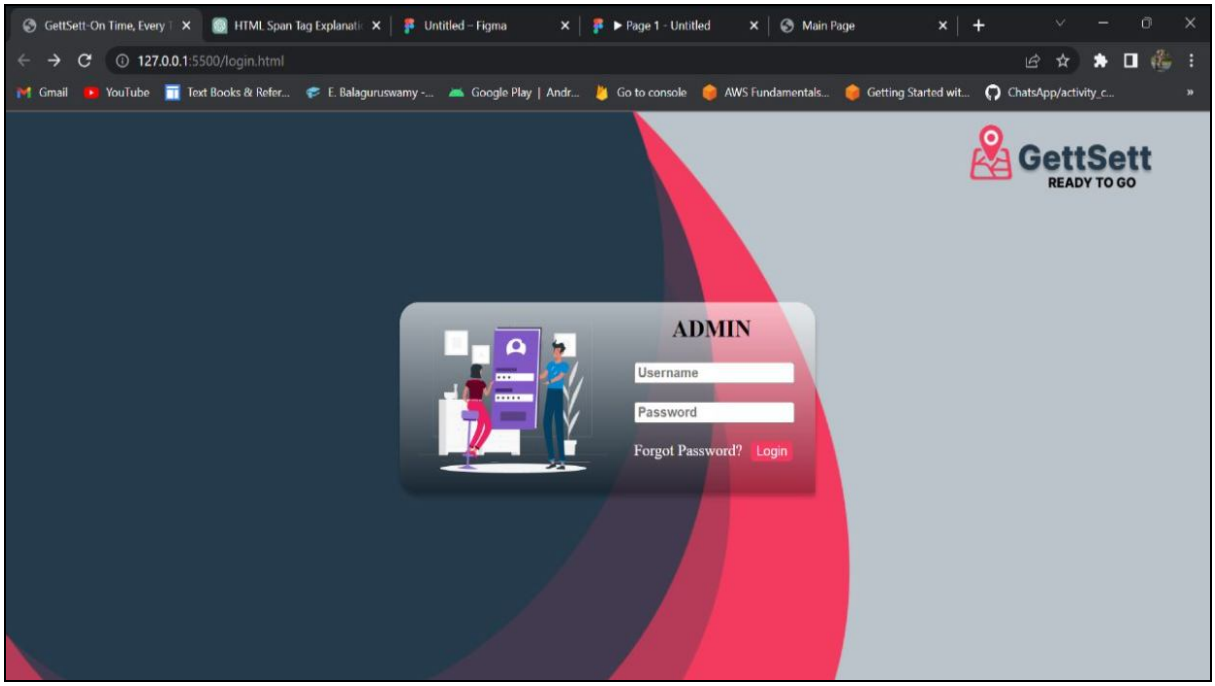


Fig 6.12 Login page

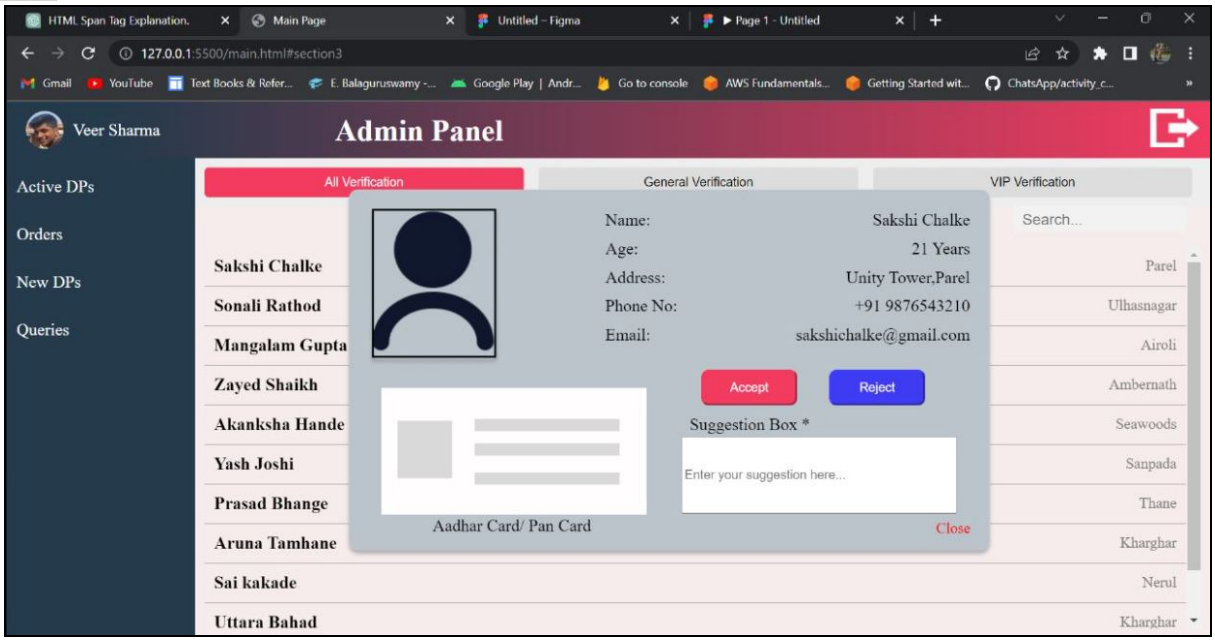


Fig 6.13 Customer Details

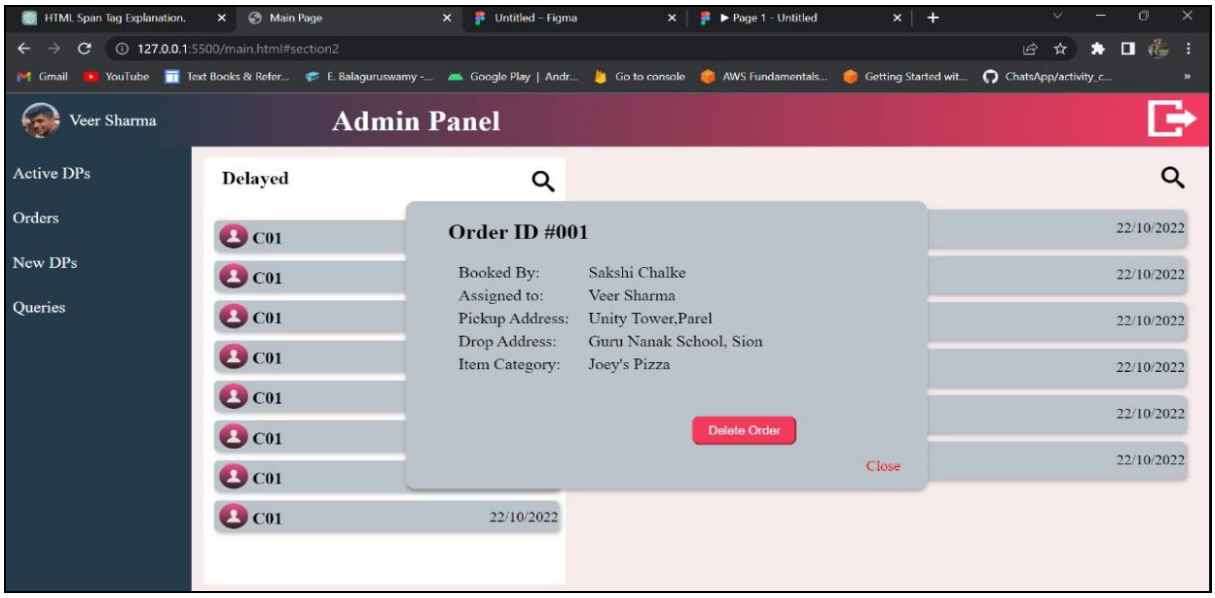


Fig 6.14 Order Details

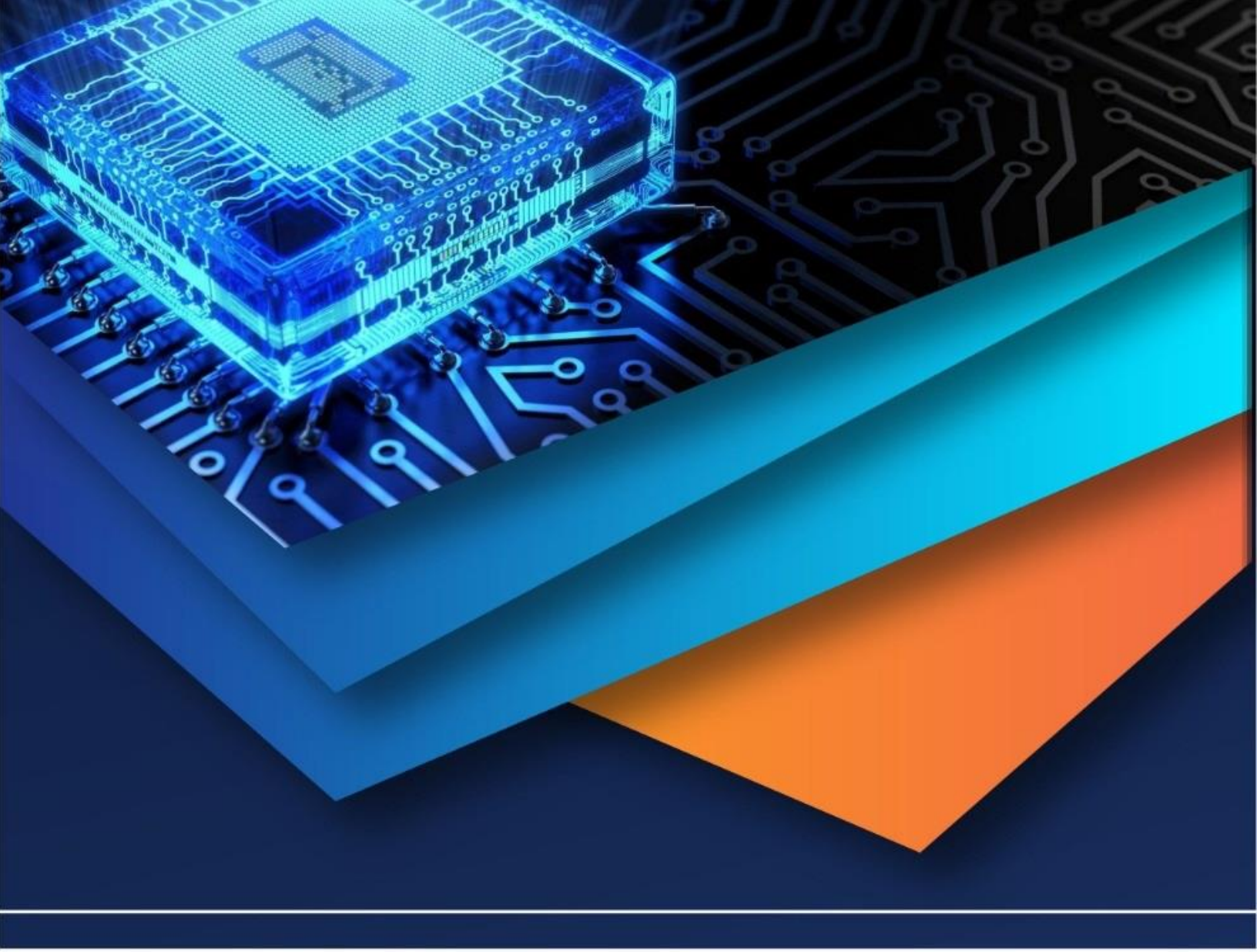
VII. CONCLUSIONS

Thus, we will have to develop a single system that will run on Android mobile only. Basically, the system contains two Android applications and one admin website and we integrate all on the cloud using Firebase. The web-based management system will provide the back-end service for parcels and customer information management. It will be integrated with the two Android applications (Getter and Setter) that will be used by the courier service personnel that are responsible to deliver the parcels to the customers by delivery partners. The system will be clearer and easily accessible to the users. The system will be used by both customers as well as persons who wanted to work. The key elements of the customer experience must be the parameters of the courier service application affecting customer satisfaction and will ultimately impact customer loyalty. Also, a system is developed that eases the courier delivery personnel in finding their way to deliver the parcels to the customer's doorstep**.** This system is definitely useful in helping the courier service to provide a better delivery time for customers and better communication with the customers. As well as it is useful for delivery partners for earning.

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