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Washify Laundry Booking App for IOS and Android Applications

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***Abstract*— In the world of software development nowadays, many applications are available on both Android and iOS platforms. Each app solves a unique problem statement with a better solution and idea. In this modern era, apps are available to fulfill and understand the user's needs. In the same way nowadays, there are many laundry service platforms available in towns and rural areas, it is generally more likely to be found in multi-store residential or university buildings where there is usually a lot of cost or dorm. The general issue with the existing laundry applications is that users face many issues while booking the service. These existing laundry applications are not intuitive and user-friendly for the users while using the app. Students have certain communication issues with the service provider when using the laundry facilities at institutions located in different states or locations, and this gives a thumbs down to the laundry service provider for being unreliable. From this project, we hope to build a well- interactive, user-friendly, and secured laundry application for Android and iOS applications that helps users easily book their services and communicate easily with the service providers.**

***Index Terms*— React Native Expo, NPM, Java Script, Node.js, Python, NLP, MBERT, Expo Location and Firebase.**

I. INTRODUCTION

Due to the rapid advancement of information technology and the modern lifestyle, individuals often struggle to find time for household chores like laundry, cleaning, and cooking. With the proliferation of smartphones in recent years, which come equipped with enhanced features and widespread usage.
Businesses are looking to leverage these devices for developing mobile applications to promote their services and products. Laundry, being a daily necessity, is simultaneously a time- consuming and burdensome household task. Hence, the development of a mobile application to deliver laundry services to customers' doorsteps proves to be an effective and advantageous solution for both customers and service providers. Our innovation concept revolves around three key enhancements. First, we aim to incorporate a language text conversion module that facilitates seamless communication among users with diverse language preferences, greatly benefiting settings such as universities where multilingual interaction is common.

II. LITERATURE REVIEW

The strategy for examining user behavior within mobile payment systems in the evolving digital landscape

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involves a comprehensive approach that considers various aspects of user interactions, preferences, and experiences. This analysis aims to gain insights into how users navigate these platforms, make financial transactions, and adapt to the changing electronic environment Mobile application and user analytics play a major role in building the app to provide user-friendly navigation through the app [2]. The paper centers on the process of developing a mobile application that caters to laundry services, with a specific focus on the utilization of expo as the primary development platform. This application is designed to offer convenience and efficiency to users seeking laundry- related services.[3]

We use location-based services to help in the delivery process of the laundry app. by using react native Expo Locations which allows geolocation information from the device, Once the user allowed the location access while using the app it'll show case the user geolocation name inside the application with a clear interface [4] Text monitoring using NLP is also used in the building of the apps text-text translator which helps users to exchange there words of communication while delivery or pickup, this helps users to type and text and convert it into any one of the provided languages for translating the words user wanted to communicate it with the laundry Wender.[5] The study of translating text or speech between languages is done by a language translator. Machine translation, at its core, mechanically transfers words between languages, but achieving accurate translations requires recognizing precise parallels between complete sentences in source and target languages.[6]

III. Proposed Methodology

This section depicts the overall architecture diagram of the application, the algorithms used to build the app, the challenges that are dealt with while making the app, and also the overall flowcharts of the application before and after login.

A. Architecture diagram

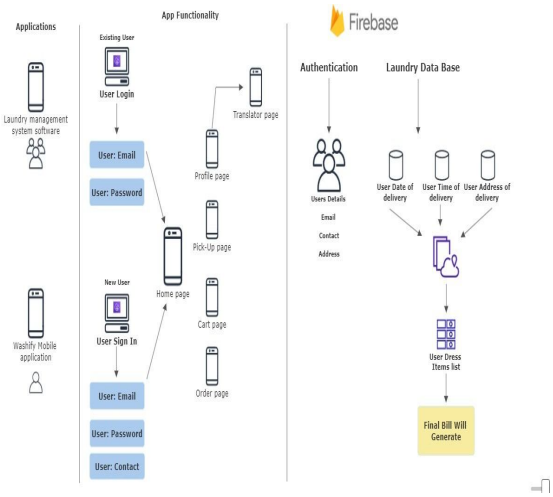


Fig.1. Depicts the architecture diagram of the over all application.

B. Challenges in developing our software, we prioritize several key aspects.

Scalability is essential, ensuring that the system can efficiently accommodate a growing user base and increased transaction volume, all while maintaining optimal performance and response times. Our commitment to an intuitive design aims to create a user-friendly interface that empowers users to effortlessly place orders, monitor progress, and manage payments without the need for extensive training.

Integrated notifications play a vital role in keeping our users well-informed about their orders, delivery schedules, and exclusive promotions, promoting effective communication and sustained engagement. Furthermore, our innovative language text conversion feature allows users to communicate seamlessly in their preferred language, facilitating interactions and providing clear instructions for laundry services.

It's worth noting that our real-time apps are optimized for various platforms, including iOS and Android, although this may limit accessibility for some users. We are diligently working to ensure that such limitations are minimized, as a few apps on the market might experience occasional crashes during payment and booking processes.

Ongoing monitoring and optimization of performance is needed to provide a seamless user experience. The necessary steps for achieving optimal performance, especially in peak usage periods, are to regularly carry out load testing, and identify and resolve problems with respect to the system architecture.
In addition, it is essential to improve accessibility to ensure compatibility with a number of devices and screen sizes. It is possible to enhance the user engagement and satisfaction by applying responsive design principles on a wide range of devices and platforms while optimizing software for each screen resolution and orientation.

C. Algorithms used:

Password Hashing is used to securely store user passwords, we employ a password hashing algorithm like b- crypt (Hashing) to protect user credentials from potential breaches.
Transfer Learning techniques involve pre-training a model on a large corpus and fine- tuning it for translation of two different languages. We'll be using BERT and T5 (Text-to-Text Transfer Transformer) to create a text-based transformation. For communication.
Text translation module manages as a text translator between the user and laundry vender. Which can help both user and service provider to communicate easily.
Token based authentication using JSON Web Tokens (JWT) is implemented to manage user sessions securely which can send notifications to the user.
With reference to Figure.2. and Figure.3. The functionalities and attributes presented in each flowchart are accessible exclusively following a successful sign-in using a valid user account in the Washify System Software application and logging in with a registered account through email or contact number in the Laundry on-demand Mobile Application. Additionally, the Washify Mobile Application offers users the capability to establish a new password or initiate a password reset (in case of a forgotten password) by receiving a unique link via email for registration and password recovery purposes.
In addition, the Washify System Software application is accompanied by a full user management system enabling administrators to set up, edit, and deactivate user accounts. With a flexible user role, the ability to access certain functionalities in Washify System Software is kept under control so as not to give unauthorized persons access to important information and essential operations.

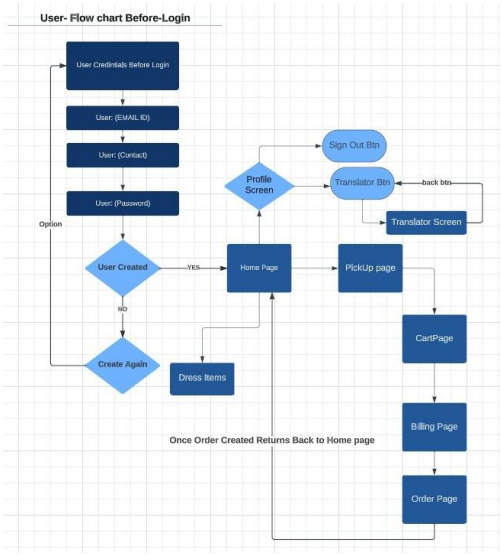


Fig .2. Describes the flowchart of the app before logging into the app.

Flowchart after login
Fig .3. Depicts the flowchart after logging into the app.

IV. Results And Discussions

As shown in Fig.5. The app opens with the logo of Washify's laundry application automatically proceeding. On the next page which shows the sign-in option, go to the translator option and the orders option which enables the user to look at their orders as shown in

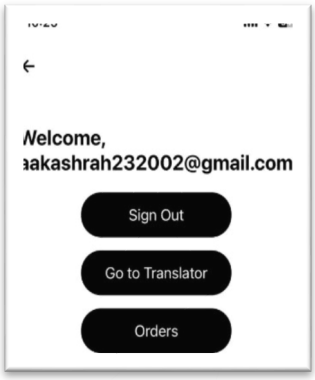
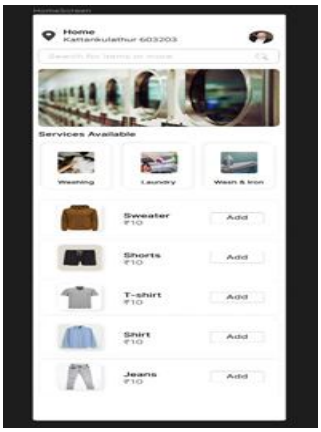


Fig.5. is the welcome page which shows the logo of the laundry application. Fig.6. Depicts the login page of the Washify app.

After the user successfully signs into the welcome page using the correct email ID/ phone number and password, the home page of the application is shown in Fig.6. which has three categories, the washing category, laundry category, and the wash & iron category. It further shows various types of garments that can be added to the cart.



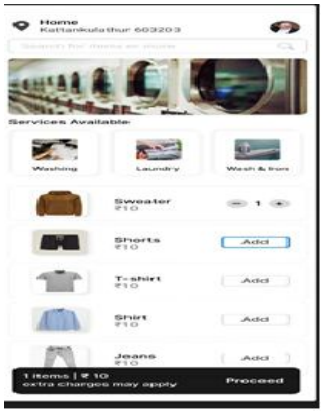


Fig.7. The main page of the laundry app Fig.8. Depicts the main page after an item is added to the cart further shows the proceed option.

To add the laundry item to the cart, the user is required to choose the laundry item and the laundry item detail is shown in Fig.7. The user may increase or decrease the item number and the float button is to add the chosen item to the cart. The user can now enter the address, pickup time, pickup date and delivery date in below mentioned figure.

Fig.9. shown by pressing the proceed button in the category list.

The translator feature is the most important feature of the app which sets it apart from a lot other laundry apps because the text feature enables the user for better communication between the user and the laundry provider.

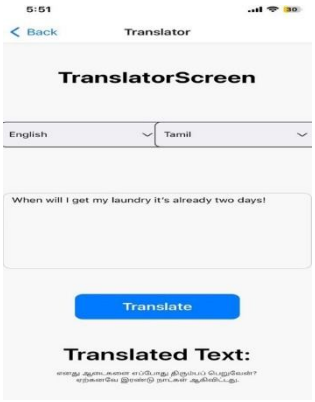


Fig.10. Shows the translator screen which enables us to translate from four different languages to other four Languages. This image shows the translation of English to tamil.

The admin can now view the added items in the cart page as Fig.11. shown by pressing the proceed to cart button in the category list. The user can now see the list of items in the cart, the total value of the cart, delivery fee on the order and the other categories selected on the previous page.

Fig.11.the category list, item total, delivery fee, and the other previously selected options.

After successfully placing the order by clicking the place order button the user gets directed to the last page of the washify app, your order has been placed page shown in

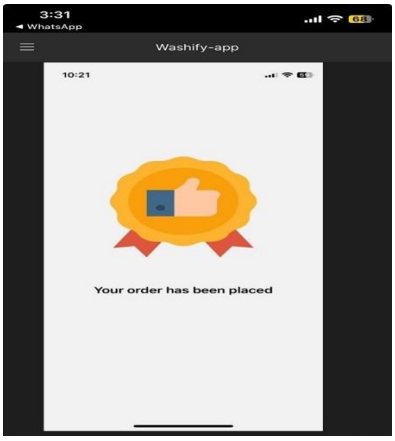


Fig.12. The final page of the laundry app which shows that the order has been placed.

V. Capabilities And Applications

The project's core objective revolves around the substantial overhaul of app functionality, promising to redefine and streamline laundry processes through the power of mobile applications.
This initiative holds significant potential in enhancing the efficiency and convenience of both customers and service providers. At the heart of our endeavor is a strong emphasis on user experience, aiming to elevate customer satisfaction.
This vision entails the development of a user-friendly platform, accessible through smartphones, which facilitates seamless access to laundry services and their efficient management.
Central to our mission is the creation of an intuitive and user-friendly interface, where users can effortlessly place orders, monitor their laundry's progress, and handle payments, all without the need for extensive training. Furthermore, our app is tailored to meet the unique needs of university communities, serving as a valuable tool for students.
It encompasses features such as booking services, real-time progress tracking, instant notifications, and a text translation module to facilitate effective communication among diverse language preferences. This comprehensive approach not only simplifies the laundry process but also enhances the overall experience for university students, illustrating the broader potential of our innovation.

VI. Future Scope

The future scope of this project can be handled with some specific updates like adding voice features for the text-text translation module, user location in maps, and drop notifications for laundry delivery, we can also add RFID tags to the clothes for making a proper user's cloths data which help the laundry vendors to not mix up with other clothes. These are a few future enhancements ideas that can be later in this project.

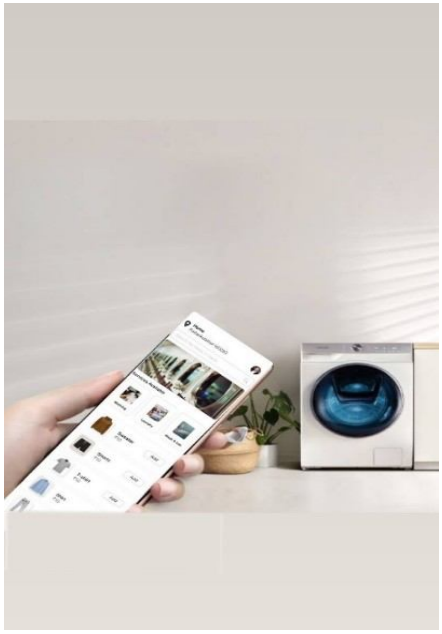


Fig.13. Shows the user using the Washify app To use the laundry service effortlessly.

VII. Conclusion

Our application has been intricately crafted, leveraging a robust technology stack that includes React Native Expo, Redux, Firebase, and other cutting-edge technologies.
Throughout the development process, our focus has remained unwaveringly on the end-users, ensuring that their needs and expectations are met.
For individual consumers, our app provides a user-friendly and hassle-free experience, simplifying the often-time-consuming task of managing laundry. On the business front, it opens doors to operational optimization, increased

customer satisfaction, and the potential for market expansion. In a highly competitive environment, our application offers businesses a means to stand out, attract a broader audience, and ultimately, thrive.

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