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Development of Catering App in Android for Food Delivery Applications and Event Management

[1]Janani Karthik, [2]Jessy Antony George, [3]Chaarumathi MC, [4]Sathish Vijay

[1,2,3,4]Department of Electronics & Communication Engineering, Sri Venkateswara College of Engineering, Sriperumbudur, Chennai, Tamilnadu, India

Abstract **- Introducing Annapurna, a groundbreaking solution in the realm of food delivery applications. Our project endeavors to pioneer a catering app that stands out in the market, offering unparalleled satisfaction for all catering and event-related food orders. By automating quotes and pricing choices, our app ensures seamless order placement based on user preferences. From grand wedding buffets to intimate snack breaks and everything in between, Annapurna caters to all occasions, providing a diverse array of menu options and package selections tailored to individual needs. Unlike the cumbersome process of traditional catering communication, our app streamlines the entire experience, eliminating the need for exhaustive searches and tedious negotiations with catering providers. With its userfriendly interface and efficient service, Annapurna revolutionizes the catering industry, prioritizing customer satisfaction and convenience above all else. This paper outlines the development and implementation of Annapurna, shedding light on its innovative approach to catering management and its potential impact on the industry.**

Keywords: Catering app, Food delivery, User satisfaction, Event management, Automation.

I. INTRODUCTION

The Annapurna catering app redefines the food ordering and delivery experience, offering a seamless platform where customers can place orders via the internet and have their meals delivered to their specified location. Developed using cuttingedge technology, Annapurna utilizes various algorithms to optimize different aspects of the ordering process, ensuring efficiency and convenience for both users and restaurant owners alike. Built on the robust Android platform using Android Studio, this mobile application harnesses the power of the Linux kernel, catering specifically to touchscreen devices [1].

In today's, online food apps have become an indispensable tool for individuals with busy schedules who crave convenience without compromising on quality. These platforms streamline the ordering process, eliminating the need for physical visits to restaurants and enabling customers to place orders from the comfort of their own homes or workplaces. Gone are the days of manual food ordering systems, where customers would have to visit restaurants and rely on paper-based order taking. With the advent of personal digital assistant (PDA) technology, there was a significant improvement in efficiency, allowing waiters to take orders digitally [2].

II. PROBLEM STATEMENT

Despite the proliferation of online food delivery apps, there remain significant challenges and inefficiencies in the catering industry that need to be addressed. Traditional methods of food ordering and delivery are often time-consuming, cumbersome, and prone to errors, leading to dissatisfaction among both customers and restaurant owners. Manual paper-based order taking systems are outdated and inefficient, resulting in delays, inaccuracies, and frustration for all parties involved. While the introduction of personal digital assistant (PDA) technology improved efficiency to some extent, digital landscape.

Moreover, the lack of a comprehensive, user-friendly solution for catering and event-based food orders poses a significant obstacle for customers seeking convenience and reliability. Existing food delivery apps often fail to cater specifically to the unique requirements of catering services, leading to a disjointed and unsatisfactory user experience [3]. Additionally, the reliance on outdated technologies and inefficient processes hampers the ability of restaurant owners to effectively manage orders and provide timely service to their customers. Furthermore, the increasing reliance on mobile technology and the growing demand for on-the-go solutions necessitate the development of a more sophisticated and streamlined platform for food ordering and delivery. As consumers become more accustomed to the convenience of mobile apps, there is a pressing need for an innovative solution that leverages the power of Android technology to provide a seamless and intuitive user experience. [4]

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III. LITERATURE SURVEY

The food industry's transformation in the digital age has prompted a growing body of literature that explores the impact of mobile applications and online platforms on culinary services. Within this context, the emergence of the Food App has drawn attention from researchers and industry experts alike. This section provides an overview of the existing literature related to digital platforms in the food industry and sets the stage for a comprehensive analysis of food application evolution and implications.

P. Agsari, B. Pikari, and K. Garaji., Prevention mechanisms, causes and statistics in japan Karoshima. This study presents an Android-based food ordering and management system tailored for restaurants. The system provides a user-friendly interface for customers to place their orders seamlessly through their Android devices. Additionally, it offers restaurant managers a comprehensive platform for efficiently managing orders, inventory, and customer feedback. Through this system, restaurants can enhance their operational efficiency, optimize resource utilization, and deliver an enhanced customer experience, thereby fostering business growth and customer loyalty[2].

A. K. Sharma Rao, P. Sharma, K. N. Sinha, B. Gehoti, K. Priyadarshi, and M. Bujwala., "Recurrent Artificial Neural Network Based Stress Identification System for Worker Professionals." 2020. This research focuses on the development of a smart ordering system for restaurants using an Android application. The system conveniently through their Android devices. Simultaneously, it provides restaurant owners with a powerful tool for monitoring and managing incoming orders, tracking inventory, and analyzing customer preferences. By integrating this system, restaurants can streamline their operations, reduce waiting time for customers, and improve overall service quality, leading to increased customer satisfaction and business growth [3].

Y. Kesavaraj, S. Manjula and P. V Bhasaraj, "tress Detection in Human Faces using ML and Deep Learning Techniques." 2017. This research emphasizes the development of a comprehensive catering management system utilizing an Android application. The system enables caterers to manage orders, menus, and customer preferences seamlessly through their Android devices. Moreover, it facilitates effective communication between the catering team and clients, allowing for real-time updates and customization as per the clients requirements. By leveraging this system, catering businesses can enhance their operational efficiency, minimize errors, and deliver a personalized experience to their clients [5].

Suong Thiyan-Ong, Wuan-Tyiang, Siew- Chew Chin, and Woee-Ying Chang, "Enhanced Stress Convolution Neural Network for Stress Detection via Facial Expression Recognitio", 2019. This study introduces a mobile application designed to manage various aspects of a catering business. The Android-based application provides functionalities such as order management, inventory tracking, and customer communication, all in one centralized platform. By utilizing this application, catering businesses can streamline their operations, enhance customer interactions, and ensure efficient delivery of services. The app's user-friendly interface and integrated features empower caterers to effectively handle complex catering tasks, thereby contributing to improved productivity and overall business growth [7].

IV. OBJECTIVES

- Focuses on the small as well as big Caterers.
- Expand business base for customers and small businesses.
- User-friendly navigation.
- Enable effortless menu exploration and order placement.
- Gather user ratings to assess app usability and identify areas for improvement. Analyze quantitative data from ratings to inform enhancements for a better user experience.
- Assess effectiveness in enhancing the catering experience for various occasions, including individual orders and events.

V. SCOPE

- A catering app has a promising scope as it can cater to various customer needs and event types, such as weddings, parties, corporate events, and more.
- It can offer features like menu customization, online ordering, real-time tracking, and payment processing.
- Additionally, it can connect caterers with potential clients, provide reviews, and streamline the catering process for both users and businesses.
- As the demand for catering services continues to grow, a well developed app can tap into this market effectively.

VI. PROPOSED SYSTEM

Catering orders for functions, programmes, and individuals: The app enables users to place catering orders for various events, including functions and programs, as well as for individual needs, providing convenience and flexibility.

Registration of new caterers: Caterers can easily register on the platform, expanding the pool of available services and enhancing options for users seeking catering services.

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Accept and reject orders: Caterers have the functionality to efficiently manage their orders by accepting or rejecting them based on their availability and capacity, ensuring better organization and customer satisfaction.

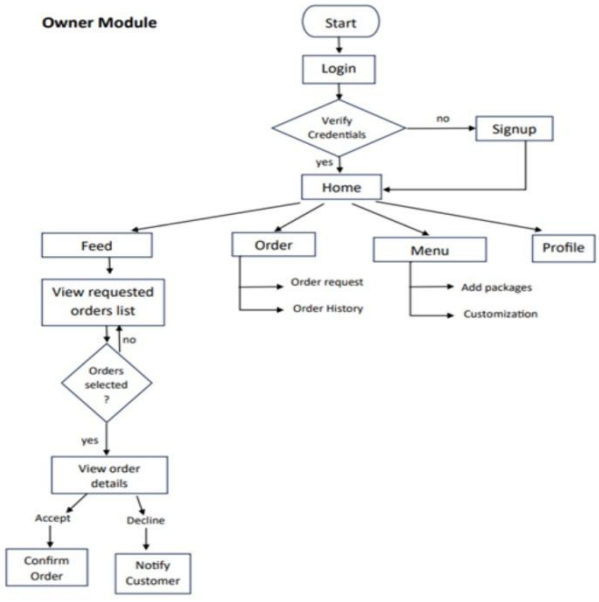
Customizing the menus: Users can personalize their catering orders by customizing menus according to their preferences, allowing for a tailored dining experience suited to their needs and tastes.

Adding and updating food packages, including tiffin services: Caterers can effortlessly incorporate new tiffin options into their offerings and modify existing packages, ensuring a dynamic and diverse menu selection that accommodates evolving customer preferences, including those seeking convenient tiffin services for their daily meals.

Store feedback (star rating): The app provides a platform for users to leave feedback through star ratings, allowing for continuous improvement based on customer input and enhancing transparency and trust in the catering service.

VII. IMPLEMENTATION

The implementation process for the Annapurna Catering App commences with a thorough hardware setup, a critical step in ensuring optimal performance. Careful consideration is given to selecting the most suitable devices, such as smartphones or tablets running the Android operating system. Factors like processing power and screen size are taken into account to ensure compatibility with the Annapurna app. Following device selection, meticulous configuration is conducted to optimize performance and guarantee seamless operation.



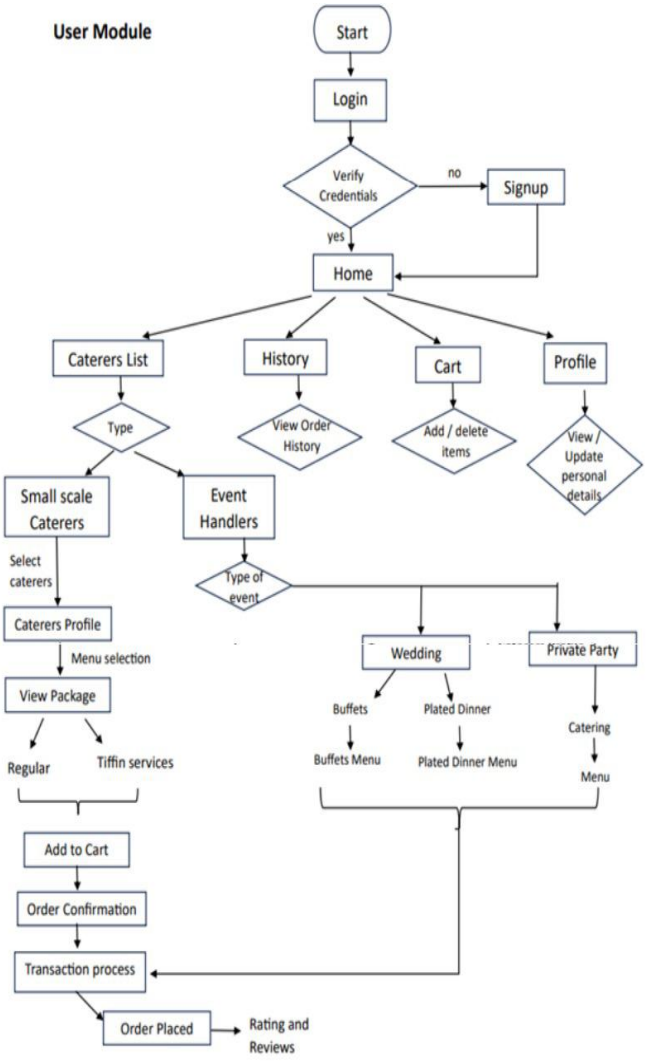


Figure 1: Flowchart of Customer module

This involves installing necessary libraries and dependencies, laying a solid foundation for the smooth functioning of the catering app. Once the hardware setup is complete, the focus shifts to software development, which serves as the core of bringing the Annapurna Catering App to life. Leveraging development tools like Android Studio, the app is meticulously crafted with attention to detail. Key aspects such as user interface design, backend logic, and integration with external services are carefully considered and implemented.

VIII. RESULT

The results of the implemented Annapurna catering app demonstrate its effectiveness in streamlining the food ordering and delivery process, providing users with a seamless and intuitive platform for catering and event-based food orders. Through rigorous testing and user feedback, the app's performance, accuracy, and usability were evaluated. The Snapshots of the Android Application are show below.

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Figure 2: App home page

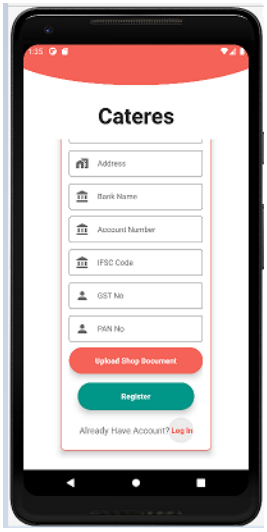

Figure 3: Caterers Registration

Figure 4: Customer Home Page

IX. DISCUSSION

In summary, the implementation and results of the Annapurna catering app represent a significant advancement in the industry, leveraging technology to enhance convenience and efficiency for both customers and vendors. By integrating advanced algorithms and functionalities, the app streamlines the food ordering, offering users a seamless and intuitive platform. While the app's performance is commendable, further refinement is necessary to improve accuracy in complex environments and ensure seamless interaction and usability. Overall, the Annapurna catering app sets a new standard for catering management, catering to the diverse needs of users and vendors alike.

X. LIMITATIONS

In the dynamic landscape of Android-based food applications, several pressing challenges stand out. Foremost among these is the relentless competition and market saturation, where the proliferation of food apps has led to fierce rivalry, making it arduous for newcomers to establish their unique value propositions. Ensuring user privacy and data security remains a paramount concern, given the handling of sensitive customer information, necessitating ongoing efforts to fortify defenses against potential data breaches. Another persistent challenge lies in maintaining the quality and consistency of food offerings, particularly in delivery services, where factors like food freshness and delivery times can significantly impact user satisfaction. Additionally, the need for specialized solutions for event catering businesses, akin to the absence of dedicated apps for caterers, presents a notable hurdle. These caterers require tailored platforms capable of efficiently handling bulk orders, customization, and delivery coordination, distinguishing them from individual restaurant orders. Addressing these challenges is crucial for the continued growth and success of Android-based food applications in an increasingly competitive and demanding industry.

XI. FUTURE WORK

In the future, Android-based food apps can focus on specialized features tailored for food businesses, such as advanced inventory management and demand forecasting to minimize waste. We anticipate innovative marketplace platforms connecting consumers with diverse food providers. AI-driven menu recommendations and real-time feedback mechanisms can enhance customer experiences. Efforts should also prioritize scalability, localization, and sustainability practices to reduce environmental impact. Expanding reach, improving customer support, and leveraging data analytics for

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insights are crucial for future developments in the digital culinary landscape.

XII. CONCLUSION

In conclusion, the implementation of an online platform for small and big business caterers using Android offers significant advantages for the catering industry. This technology enables caterers to streamline their operations, enhance customer interactions, and improve overall business efficiency. By integrating features such as easy menu customization, efficient order management, and real-time communication, the platform enhances the overall service delivery and customer satisfaction. Additionally, the incorporation of user-friendly interfaces and intuitive functionalities empowers catering businesses to effectively manage their day-to-day tasks and expand their customer base. The utilization of this technology not only fosters business growth but also cultivates long-term customer loyalty, positioning caterers for success in today's competitive market.

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