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QuickBite: A Cutting-edge Food Ordering System Developed with Flutter

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Abstract

Mobile applications have become a pivotal strategy for customer retention, especially with the prevalence of smartphones and improved wireless networks. Traditional restaurant ordering methods often lead to inefficiencies and dissatisfaction, highlighting the need for a comprehensive mobile food ordering platform. This project aims to develop such a platform to address issues like long wait times, order inaccuracies, and poor order visibility. The waterfall model is used to create this application, ensuring a structured development process. The application, to be deployed in Sudan where no similar app exists, will be available for both Android and iOS users. Testing has shown it effectively connects customers with restaurants in just a few steps. Expected outcomes include enhanced meal ordering convenience, flexible payment methods, and an improved user experience with a user-friendly interface. Users can also apply discount coupons and designate favorite items for quick access, making the ordering process more efficient and enjoyable.

1. Introduction

In today's digital age, mobile applications have become essential for retaining consumers, driven by the rising demand for smartphones and the evolution of wireless networks [1]. Online shopping's convenience draws individuals to browse options and compare prices effortlessly. Introducing Quickbite, a mobile food ordering application designed for smartphone users seeking a seamless dining experience. Quickbite enables users to access restaurants, peruse menus, place orders, and make payments without direct interaction with restaurant staff, significantly reducing waiting times and enhancing the overall customer experience.

Quickbite offers more than convenience; it integrates real-time order tracking, allowing users to monitor their orders from preparation to delivery, ensuring transparency and reducing uncertainties. Utilizing data analytics and customer feedback, Quickbite provides personalized recommendations and promotions, fostering customer loyalty and driving revenue growth for participating restaurants. Security and data privacy are prioritized, with robust encryption protocols safeguarding sensitive information. For restaurants, Quickbite offers increased visibility and valuable insights into customer preferences, helping optimize offerings and marketing strategies.

Traditional food ordering methods often result in inefficiencies and frustration for consumers and restaurant employees, with long wait times, order inaccuracies, and limited order status visibility [2]. There is a significant gap in the market for a comprehensive and user-friendly mobile food ordering platform [3]. Quickbite addresses

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these issues with a streamlined interface, real-time tracking, personalized recommendations, and robust security measures. The project's objectives include designing and developing Quickbite using Flutter and Dart, and rigorously testing its usability and functionality. Ultimately, Quickbite aims to revolutionize the dining experience by enhancing convenience, efficiency, and satisfaction for both consumers and restaurants.

2. Related Work

This section will examine existing food ordering systems, emphasizing the limitations and offering QuickBite as a creative and efficient alternative.

2.1 Food Ordering Platforms

Food ordering platforms serve as the backbone of the modern dining experience, acting as dynamic bridges that seamlessly connect customers with a wide array of restaurants and food delivery services across diverse cuisines and preferences [4]. These platforms operate within a comprehensive and sophisticated ecosystem, facilitating multifaceted functions such as menu exploration, streamlined ordering processes, efficient delivery tracking, and personalized user engagement while ensuring quality and satisfaction [5].

Digital food ordering platforms bring together customers, restaurants, and delivery personnel into a unified environment, creating accessible, transparent, and efficient services for dining and delivery needs. They represent the contemporary nexus where culinary aspirations meet practical convenience, redefining the dining landscape by enhancing the reach and efficiency of food services in an age of digital innovation and interconnected communities.

2.2 Analysis of Existing Platforms

It is vital to research popular food ordering systems to better understand their functional dynamics, strengths, and limits. This investigation includes a detailed inspection of Talabatey, Hunger Station, and Yala Natlob. Each platform has its own set of features designed to support different humanitarian projects and community-driven initiatives. This in-depth analysis intends to shed light on the platforms' strengths, shortcomings, and underlying operating processes, offering comprehensive knowledge that will drive the project's growth and improvement.

Talabatey application was launched in 2017 and was the first of its kind so that users can order their food from a wide range of restaurants through a chain ordering experience, Talabatey has set a new standard for food ordering services in Sudan. It not only simplifies the process of eating at home but also supports local restaurants [6].

Talabatey has several benefits, but some drawbacks affect the user experience. Potential users from other parts of Sudan are now unable to use the app since it is only available to residents of Khartoum and Port Sudan. Delivery delays are common, and they can be annoying and difficult for clients. Moreover, consumers find it challenging to learn the status and anticipated delivery time of their meals due to the absence of real-time order tracking [7]. These problems point out areas that need to be improved to improve Talabatey's service and reach more people.

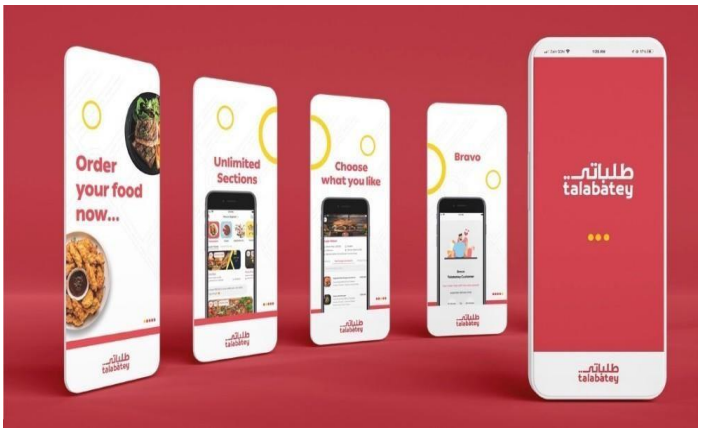

Fig. 1 *Talabatey platform*

Another platform is HungerStation, a popular meal delivery service in Saudi Arabia, links clients with over 10,000 partners in more than 80 locations, providing a diverse range of restaurants [8]. The platform's user-friendly design, multiple payment options, real-time order tracking, and dependable customer service provide convenience while saving consumers time and effort.

However, HungerStation offers certain negatives, including hefty service and delivery costs, which may dissuade budget-conscious clients, occasional challenges with order accuracy and customer assistance, and delivery delays during busy periods. These difficulties indicate opportunities to increase customer happiness and service quality.

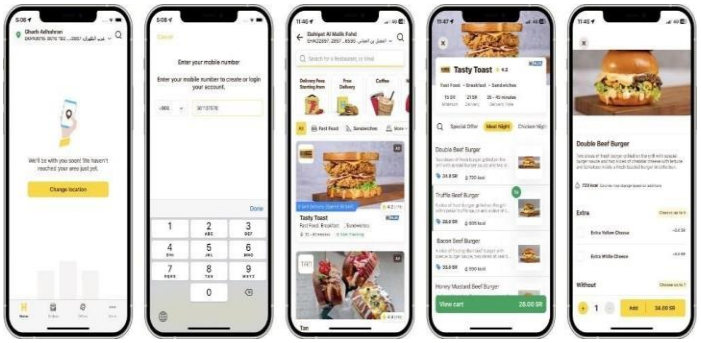

Fig. 2 *HungerStation platform*

With the launch of the multi-restaurant meal ordering app Yalla Notlab in 2019, Sudan's culinary scene saw a major advancement. Yalla Notlab provides a practical option for consuming a range of cuisines at home and was created to satisfy the changing demands of contemporary customers. Through the app, customers can browse menus, make orders, and have meals delivered right to their homes from a wide variety of eateries.

Although Yalla Notlab has significantly improved Sudanese meal ordering, several disadvantages exist. One major drawback is that iOS users are not able to access it since it is exclusively available to Android users. The app's restricted service area—it only caters to users in Sudan's capital Khartoum—is one of its main drawbacks. This limitation severely restricts the service's total reach by denying access to users in other areas.

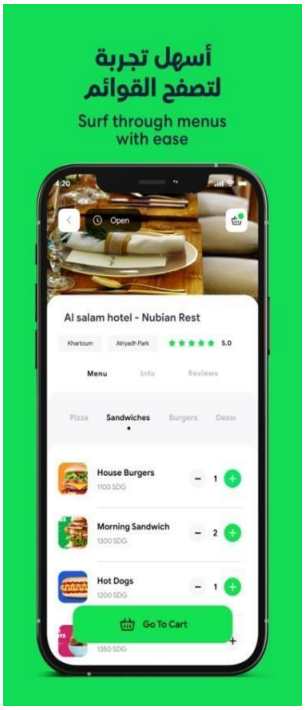

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Fig. 3 *Yala Notlab platform*

The comparison between the existing and proposed systems is shown in Table 1.

Table 1: *Comparative Analysis of Three Existing Systems and the Proposed System*

Features	Talabatey	HungerStation	Yalla Natlob	Proposed System
User Registration	√	√	√	√
User Profile	√	√	√	√
Cart Module	√	√	√	√
Add an Item to Favorite	X	√	X	√
Different Payment Method	X	√	X	√
View History	X	X	X	√
Adding Notes During Orders	√	√	X	√
Real-Time Tracking	X	√	X	√
System Type	Mobile App	Mobile App	Mobile App	Mobile App + Web Dashboard
IOS + Android	√	√	X	√

2.3 Significance for QuickBite

QuickBite is a revolutionary meal delivery platform that bridges the gap between current platforms and evolving customer demands. It provides a complete strategy that includes a broad range of restaurant alternatives, various payment methods, and real-time order monitoring, catering to a varied audience and allowing users to easily connect with their preferred eating options.

Furthermore, QuickBite's mobile application format increases accessibility by overcoming the constraints of conventional web-based platforms. The mobile-centric strategy offers a smooth user experience by providing simple access to restaurants, menus, and delivery tracking at any time and from any location. This improved accessibility increases user engagement and encourages regular contact with the site.

QuickBite's relevance stems from its technological advancements and disruptive influence on user convenience and the food ordering industry. It reimagines food ordering by increasing openness, inclusion, and interaction, resulting in a stronger and more efficient food delivery ecosystem.

3. Methodology

A methodology is a collection of ideas, norms, and procedures that direct the software development process. Rather than focusing on the technical components of software development, it also includes the organizational aspects [9]. There are several Systems Development Life Cycle (SDLC) approaches available that can be used as a management guide to ensure successful software or system development. However, the waterfall model will be used in this project since it is a simple approach to oversee, with each step being implemented and finished independently of the others.

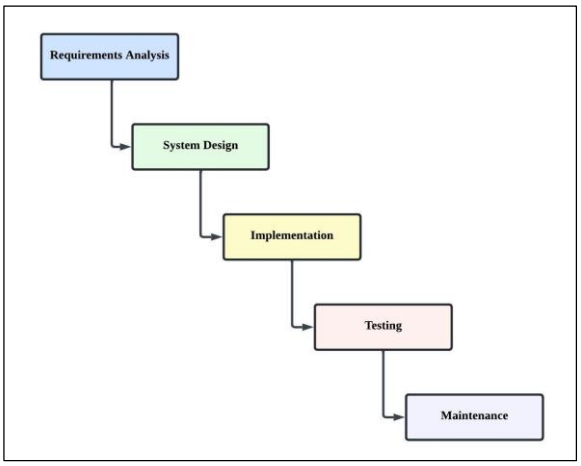

Fig. 4 *Waterfall Process Model [10]*

3.1 System Requirement Analysis

System Requirement Analysis is a meticulous process that involves identifying, documenting, and managing the comprehensive needs and expectations for a software system. This vital phase encompasses analyzing the multifaceted requirements of diverse stakeholders while prioritizing functional and non-functional elements essential for optimal system performance [11]. The primary aim is to guarantee the software product's alignment with desired objectives, ensuring its ability to deliver high-quality, user-centric experiences.

Table 2: *Functional Requirements*

Modules	Requirement
User Registration	• The application allows users to establish an account by filling in their username, email address, valid phone number, and password.
Login	• The application allows user to log in via a valid phone number and password.
Profile Management	• The application allows users to update their profile details.
Search	• The application allows users to search for a wide range of restaurants.
Comment and raring	• The application allows users to provide real-time feedback by evaluating and commenting on the food after successfully placing an order.
Location	• The application allows users to use Google Maps to confirm their location.
Logout	• The application allows users to log out once they have used it.

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Table 3: *Non-Functional Requirement*

Requirement	Description
Performance	• The system should be quick to respond, especially when lots of people are using it. • It should manage many users without slowing down.
Reliability	• The system should always be available, with little time when it is not working. • It should be able to get back information if something goes wrong.
Security	• The system should encrypt the user's password to login to the application. • The system should protect the privacy of user information.
Usability	• The system should be user-friendly, both visually and functionally. • It should be accessible for people who may struggle using regular systems.

3.2 Design

The design phase in software development serves as the foundation for translating system requirements into a structured blueprint [12]. This crucial phase involves conceptualizing, planning, and detailing the architecture, interfaces, and functionalities of the software system. The primary objective is to establish a robust framework that aligns with the specified requirements while ensuring scalability, efficiency, and user-friendliness. This section elucidates the design considerations, architectural decisions, and strategies adopted in crafting the QuickBite application.

3.3 Implementation

The implementation phase is critical, when precise planning and an iterative design approach combine to create a durable and adaptive system. During this phase, the combination of programming languages such as Flutter for the frontend and PHP for the backend serves as the foundation for creating a highly adaptable platform. This intentional use of programming languages allows the development of a system that effortlessly combines functional competence with user-centric attractiveness. Using these languages, the project aims to create a scalable, efficient, and engaging application that meets the various demands of users and stakeholders. Iterative approaches, including as prototyping and thorough user testing, are critical for modifying features based on user input, hence improving the system's overall usability and efficacy.

3.4 Testing

During the testing phase, the system is rigorously evaluated and validated to guarantee reliability, functionality, and compliance with stated criteria. To examine the system's performance across several scenarios, various testing approaches are used, including unit testing, integration testing, and system testing. This phase seeks to identify and resolve any abnormalities, flaws, or inconsistencies in the system's functioning. Robust testing

processes are designed to provide a flawless and error-free user experience, hence increasing the system's overall dependability and efficiency. Through careful testing, the project aims to produce a high-quality and durable platform that matches the stated goals and user expectations.

3.5 Maintenance

The final step of the Waterfall model is maintenance, which entails delivering enhancements and updates to the customer's environment. This phase focuses on issue fixes and incorporating user feedback from the previous step, which was the testing stage. The aim is to provide an updated version of the program that improves its functionality and overall user experience. Several tasks are carried out during the maintenance phase to guarantee that the application continues to work and is current. Regular software upgrades are made to fix any difficulties that develop following the application's deployment. These updates might contain bug fixes, performance improvements, and security patches to defend against potential vulnerabilities.

4. Result and Discussion

This section shows the project's findings, including numerous visual representations and evaluations of the system's structure, functioning, and user interface design. It contains a context diagram, a data flow diagram, an entity relationship diagram, and user interface designs, giving a complete picture of the system's architecture and user interaction models. These visual aids are crucial for understanding the system's behavior, user interactions, and general operation. This part attempts to illustrate the project's accomplishments, highlight critical design choices, and assess the system's alignment with the defined criteria and goals via a thorough discussion and analysis of these findings.

4.1 Context Diagram

The QuickBite system revolves on the Admin, who ensures that the platform runs smoothly and is managed effectively. The Administrator monitors and manages important capabilities such as user access, restaurant data, restaurant management, order processing, and general operation flow. By successfully addressing these obligations, the admin ensures that the platform remains functional and serves the demands of all users. Users contribute to the system by registering or logging in, specifying their location, checking restaurant availability, perusing menus, making orders, examining order details, and offering comments. Their interactions with the system determine its usefulness and success.

The Use Case Diagram graphically illustrates the Administrator's important role in orchestrating the system's operations, as well as the Users' collaborative participation in creating a dependable and user-friendly meal ordering and delivery experience.

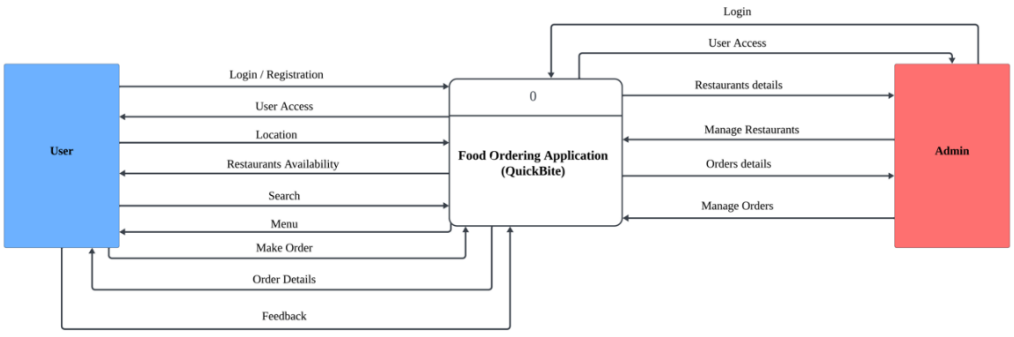

Fig. 5 *Context Diagram*

4.2 Data Flow Diagram

The data flow diagram depicts the successive stages involved in user and admin interactions on the QuickBite platform. The procedure starts when the user or admin logs into the system. The system checks credentials to differentiate between new and current users. The platform makes it easy for new users to register and utilize

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QuickBite's capabilities. Once signed in, users may make orders by exploring various restaurants and menus, choosing their chosen products, and then completing the checkout procedure. The system processes the order information, updates the cart, and validates the payment. Users may also update their profiles by changing personal information, which improves their engagement with the network.

Admin, on the other hand, plays an important role in managing restaurants and menus. They may add, modify, and remove restaurant and menu information to keep the platform's material correct and up to date. The administrator's responsibilities include monitoring user activity, supervising restaurant operations, and ensuring the platform's general functioning.

The graphic depicts a thorough overview of the QuickBite system's user and admin workflows, emphasizing the platform's seamless integration of user actions and system operations to create an efficient and user-friendly experience.

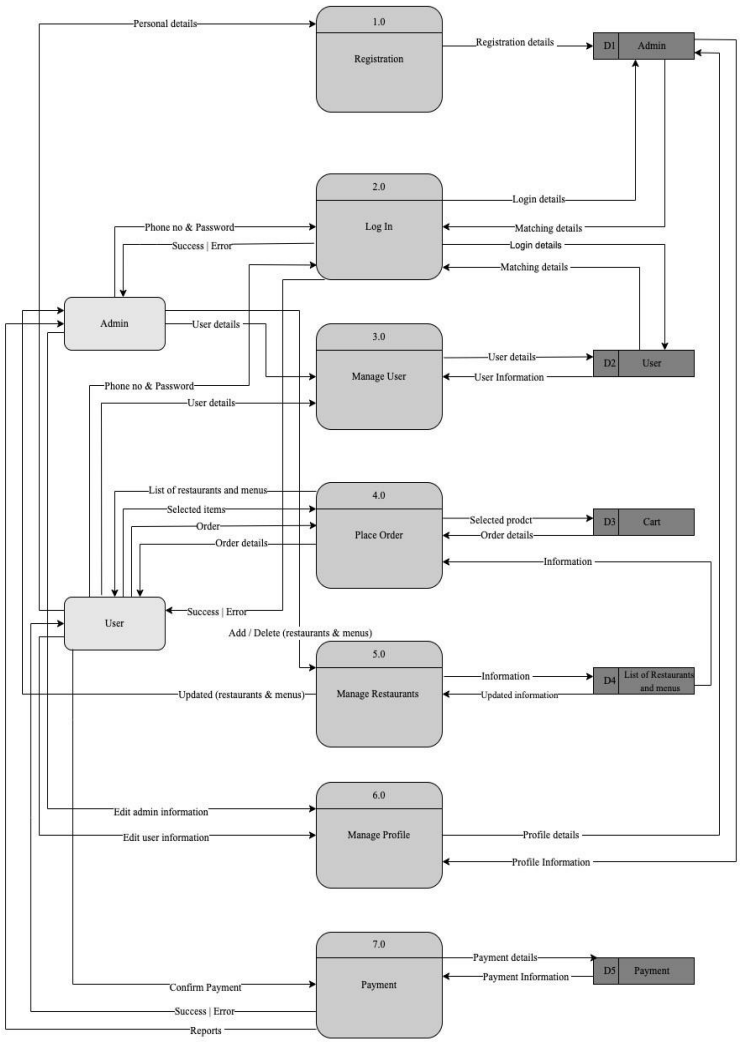

Fig. 6 *Data Flow Diagram*

4.3 Entity Relationship Diagram

Entity Relationship Diagram (ERD) is a visual depiction of the relationships and linkages between entities in the QuickBite system. This diagram is an important tool for understanding the structure and relationships between various data types, since it provides a clear and simple overview of the system's data architecture and how information is organized and connected inside the application. The ERD captures the links between entities, attributes, and data flow, providing critical insights for system design, development, and maintenance.

The entity relationship diagram (ERD) gives a thorough visual representation of the system's data architecture [13]. This graphic illustrates the interactions and relationships between various entities in the QuickBite ecosystem, revealing the structure and interconnectivity of crucial data elements. The ERD serves as a fundamental tool, detailing the data organization and connections that are critical to the design, functioning, and maintenance of the QuickBite application.

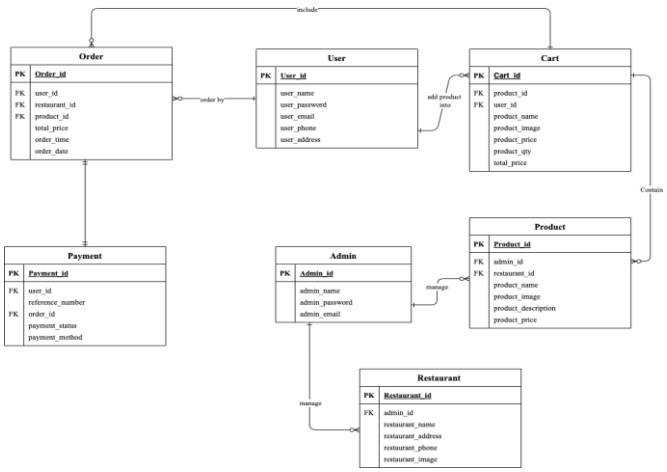

Fig. 7 *Entity Relationship Diagram*

4.4 Implementation

QuickBite's implementation entails putting the project's design and goals into practice, transforming conceptual concepts into functioning and user-friendly mobile applications. This section gives a full explanation of the technological methods and techniques used to create QuickBite. The project's theoretical framework is realized by outlining the system architecture, front-end and back-end development, database design, and security protocol integration.

An iterative development process is used, which ensures continual improvement and adaptation based on user input and testing. Each part of this section focuses on a distinct aspect of the implementation process, such as technology selection, development approaches, and development obstacles. This extensive explanation demonstrates the technical rigor and strategic strategy that enables QuickBite's successful implementation.

4.4.1 Welcoming Screen

QuickBite's welcoming screens, which are meant to introduce users to the app's essential features. The first screen promotes QuickBite's vast restaurant selection and ease of ordering, while the second focuses on the speedy and economical delivery service. These visually appealing screens provide a seamless introduction to the app, enhancing user engagement and understanding of the platform's benefits.

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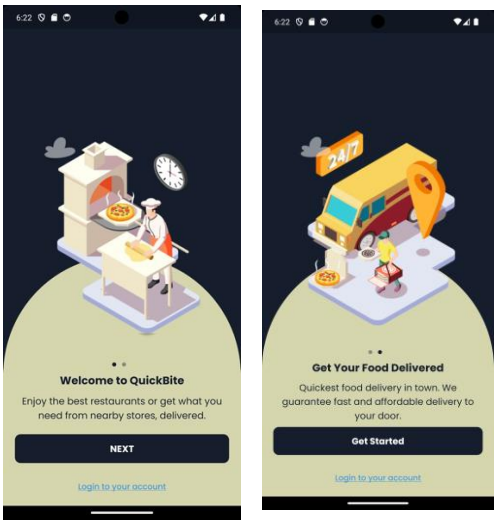
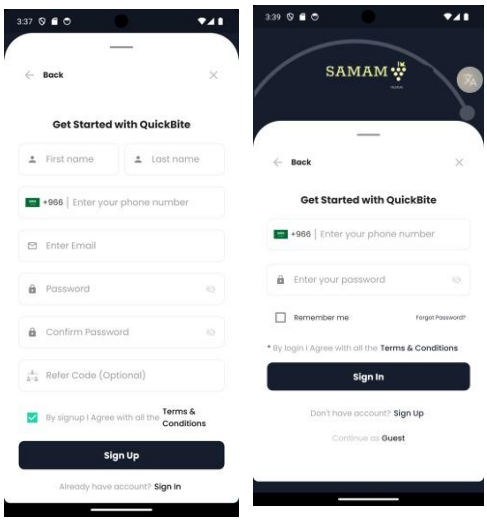


(a) **(b)**

Fig. 8 (a) & (b) *Welcoming Screen*

4.4.2 Registration and Login

The Registration and Login subsystem is a critical component of QuickBite, ensuring secure and streamlined access for the users. This section outlines the implementation of user authentication and authorization mechanisms, which are foundational to protecting user data and maintaining the integrity of the application. Key elements include the creation of user profiles, validation processes, and secure storage of credentials.



(a) **(b)**

Fig. 9 (a) *Registration Interface, (b) Login Interface*

4.4.3 Setting Location

This part depicts QuickBite's setting location screen, which allows customers to locate their precise location, and based on that, the customers can see the nearby restaurant list using an interactive map. The page prominently shows the user's current or searched location at the top, with an easy-to-use "Pick Location" button to confirm the address.

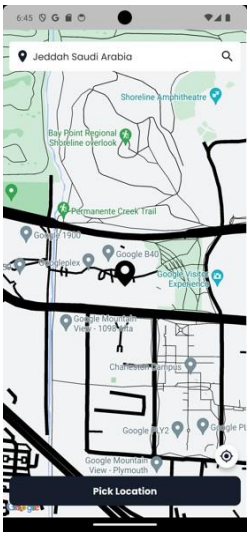


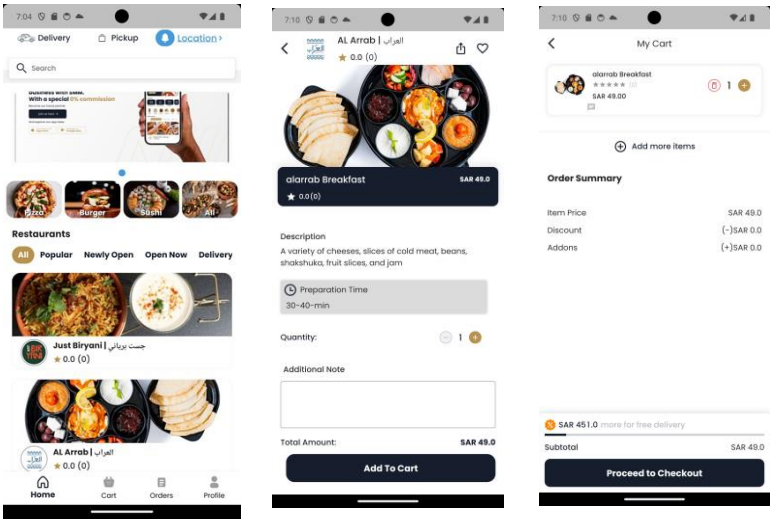
Fig. 10 Setting Location Interface

4.4.4 Home Page

QuickBite's home page, which includes advertising banners, a search box for discovering restaurants, and categories such as "Popular," "Newly Open," "Open Now," and "Delivery" choices. The page also shows a list of restaurants, including their names, ratings, and highlighted meals, with the opportunity to browse more. This style simplifies navigation and increases user engagement by offering rapid access to popular and nearby eating alternatives.

The product page contains extensive information on a specific menu item. The page offers the dish's name, price, description, preparation time, and the ability to change the amount. Customers may additionally provide unique instructions in the "Additional Note" box. The "Add to Cart" button helps consumers to smoothly complete their transactions. This arrangement promotes clarity and ease, which improves the user's ordering experience.

Lastly, the cart page includes a summary of the chosen products. The page shows the item's name, quantity, price, and total amount. Customers may change the amounts or delete products straight from the basket. The "Order Summary" section details item pricing, discounts, and add-ons. The cart page also contains a suggestion to add additional products and displays the remaining amount for free delivery. The "Proceed to Checkout" button allows consumers to conclude their purchase.



(a) **(b)** **(c)**

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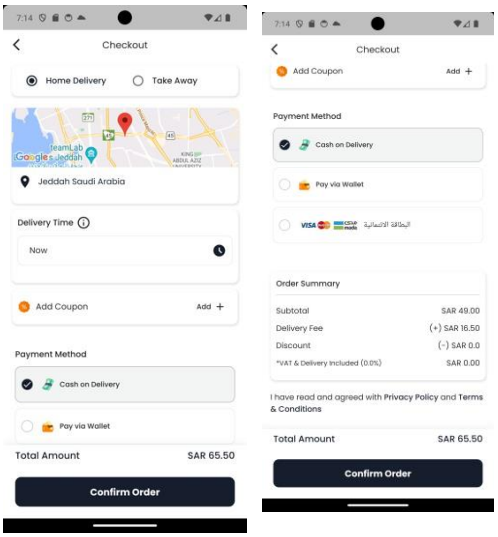
Fig. 11 (a) *Home Page Interface, (*b) *Product Page Interface,* (c) *Cart Page Interface.*

4.4.5 Checkout Page

The checkout page illustrates an overview of the transaction and enables customers to complete the purchase. The page contains choices for selecting the delivery mode (e.g., Home Delivery or Takeaway), entering the destination address, and choosing a delivery time. Users may also use coupons to get discounts. The payment method section provides a variety of alternatives, including Cash on Delivery, Wallet, and Credit/Debit Cards, giving customers more freedom. The order summary shows the subtotal, delivery cost, discount, and total amount.



(a) **(b)**

Fig. 12 (a) & (b) *Checkout Page Interface*

4.4.6 Order Confirmation Page

QuickBite's order confirmation page informs customers that their order status was successfully processed. To ensure that users' orders are executed, the page contains a confirmation message and a visual signal (checkmark symbol). A "Back to Home" button is given, enabling users to return to the home page with ease.

Moreover, the order tracking page gives customers a clear visual depiction of their order's progress. The page shows a step-by-step timeline with stages like "Order Placed," "Order Confirmed," "Preparing Food," "Food on the Way," and "Delivered." The current status is shown, allowing customers to follow their orders in real- time.

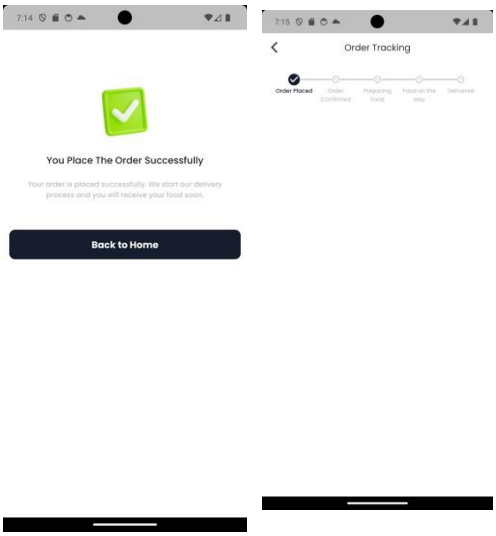


Fig. 13 (a) *Order Confirmation Page Interface, (b) Order Tracking Page Interface*

4.4.7 Customer Profile

QuickBite's profile management feature enables users to easily personalize and maintain their personal information. Users may change their contact information, delivery addresses, and preferences immediately from the app. This feature provides a more customized experience by storing user data for speedier checkout and targeted suggestions. It also gives a secure interface for managing payment methods and seeing purchase history, which improves ease and user engagement.

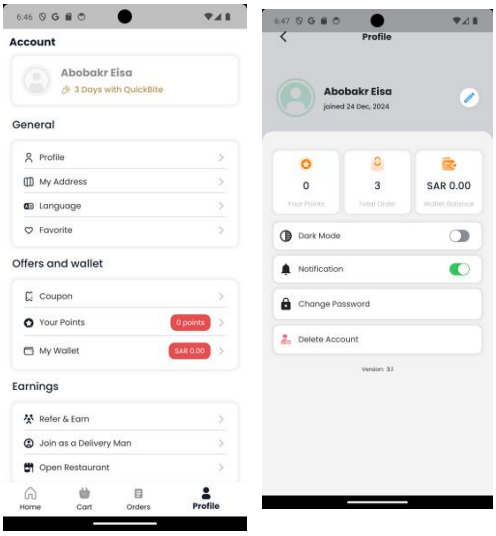


Fig. 14 (a) & (b) *Customer Profile Page Interface*

4.4.8 Admin Dashboard

The Admin Dashboard is a consolidated platform that allows Admin to quickly manage the app's activities. Admin may supervise and manage restaurants, including adding new restaurants to different locations, updating restaurant information, and ensuring efficient service delivery. They may also maintain menus by adding, changing, or deleting items, ensuring that the information shown to clients is correct and up to date. This

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simplified management solution enables Admin to retain operational efficiency while improving the overall user experience.

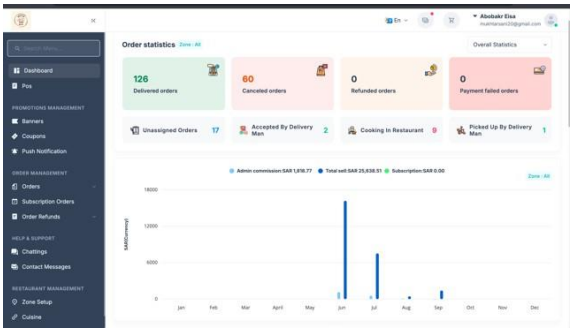

Fig. 15 *Admin dashboard*

Fig 15. Depicts the main page being shown after successful login to the system by admin. The admin dashboard is intended to give thorough supervision of the platform's activities. The dashboard shows essential order information, including delivered, cancelled, refunded, and payment-failed orders, as well as unassigned and in-progress orders. It also includes options for managing promotions such as banners, vouchers, and push alerts, as well as order and restaurant administration capabilities such as zone setting and cuisine selection. A graphical depiction of sales and commissions improves data visualization, allowing the administrator to track performance and guarantee effective service delivery. This configuration enables operational transparency and simplified administration for QuickBite.

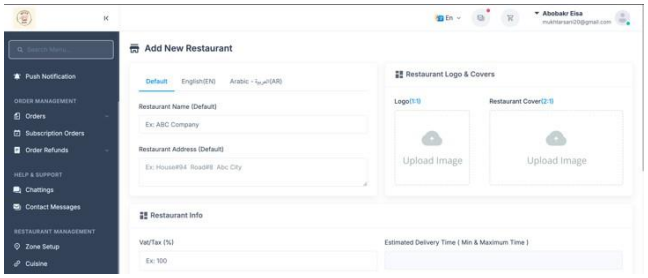

Fig. 16 Adding New Restaurant via the *Admin dashboard*

Fig. 16 shows the "Add New Restaurant" page of QuickBite's Admin Dashboard. This page enables the admin to enter important restaurant information such as the name, address, and other relevant details. It also contains areas for uploading a restaurant logo and a cover picture to improve branding. The page also includes areas for specifying tax rates, projected delivery periods, and other operational characteristics.

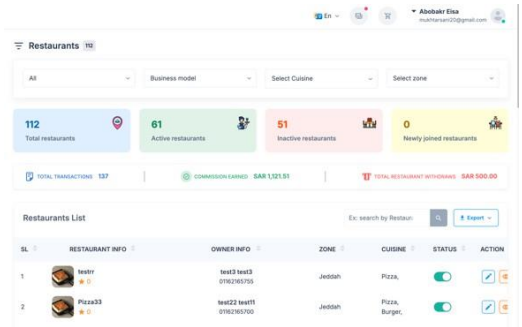

Fig. 17 Restaurant Lists

Fig. 17 shows QuickBite's restaurant management dashboard, which lists registered restaurants. The page shows the number of restaurants, active and inactive statuses, and new additions. Other insights include total

transactions, commission, and restaurant withdrawals. The restaurant list includes name, owner, zone, cuisine categories, and status toggles for easy control. This dashboard helps Admin manage restaurant operations and provide real-time information, improving functionality and control.

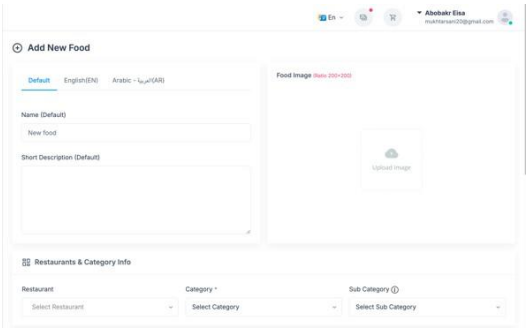

Fig.18 Adding New Food

Fig.18 shows QuickBite's "Add New Food" page in the admin dashboard, where Admin may enter and modify food data. The website supports English and Arabic dish names, brief descriptions, and picture uploads. It also lets you link the new food item to restaurants, categories, and subcategories.

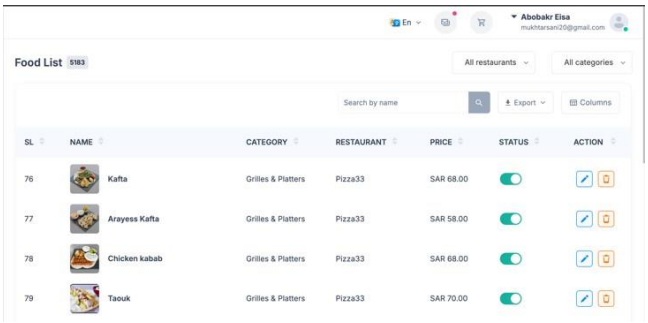

Fig. 19 Food Lists

Fig. 19 shows the QuickBite Admin dashboard's "Food List" page, which lists all food items. The page shows the food name, category, restaurant association, price, status toggle indicating availability, and edit and delete buttons. Admin can effectively manage food products and update menu information throughout the platform using this structured interface.

4.5 Testing

Testing plays a crucial role in various fields, including software development, education, and design processes. In software development, testing is essential for verifying requirements, validating software behavior, and catching regressions in products [14].

The Testing portion ensures that the QuickBite platform is reliable, functional, and secure. The application's integrity is rigorously confirmed at several levels by using rigorous testing approaches such as unit testing, integration testing, and user acceptability testing. This section describes the testing techniques used to discover and address any faults or defects, resulting in a smooth and reliable user experience. QuickBite promises to swiftly produce a high-quality, dependable platform that satisfies its consumers' expectations and demands by emphasizing extensive testing methods.

4.5.1 Alpha Testing

In software development, alpha testing is critical for assessing a software application's functionality and quality before it goes through beta testing and is distributed to end customers. According to the study articles, this testing process entails directly checking the software output to verify it matches the predicted outcomes. The table below shows the test cases created and run for this project.

4.5.2 User Acceptance Testing

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User acceptance testing is essential because users are the primary individuals who will interact with the QuickBite application in their daily lives. This testing phase allows users to engage with the app, providing valuable insights into its functionality and performance. Through their involvement, users can evaluate the features and usability of QuickBite, identifying any issues that may have been overlooked during development. This feedback is crucial for developers as it helps refine the application and ensures it functions smoothly in real-world scenarios. A group of 19 participants was involved in this testing process, with their feedback collected and analyzed to improve the app's overall quality and user experience.

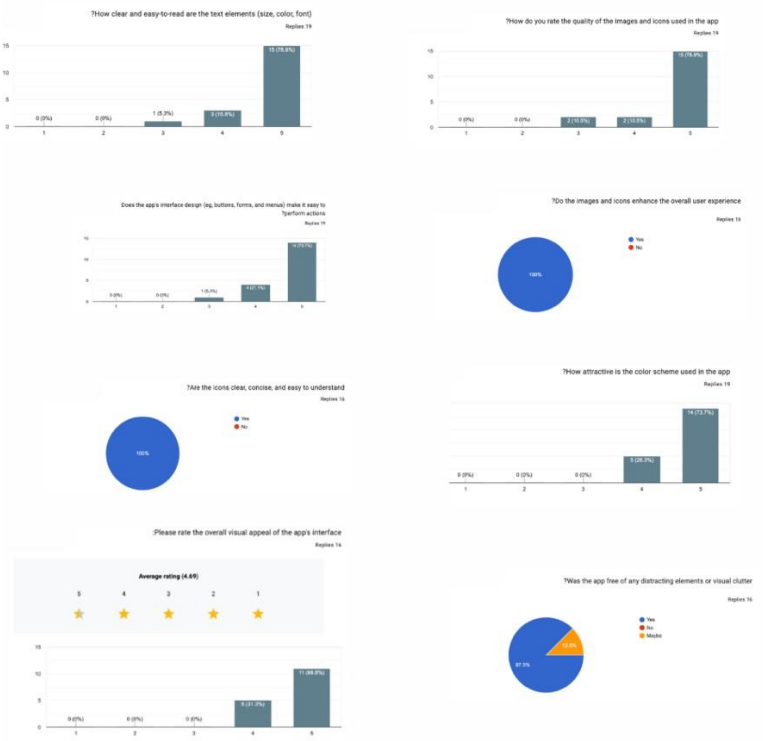

Fig. 20 *User acceptance testing results of User Inerface*

Fig. 20 illustrates charts and graphs that analyze user responses to the application's UI. The majority of respondents regarded the app's text components, graphics, symbols, and color scheme as clear, visually attractive, and simple to understand. The app's design was also praised for improving the user experience, with the majority stating that the interface (e.g., buttons, forms, and menus) is easy to use. Overall, the visual appeal of the app received high ratings, with minimal feedback indicating any distracting elements or visual clutter. These findings indicate that users thought the program was intuitive, appealing, and well-designed.

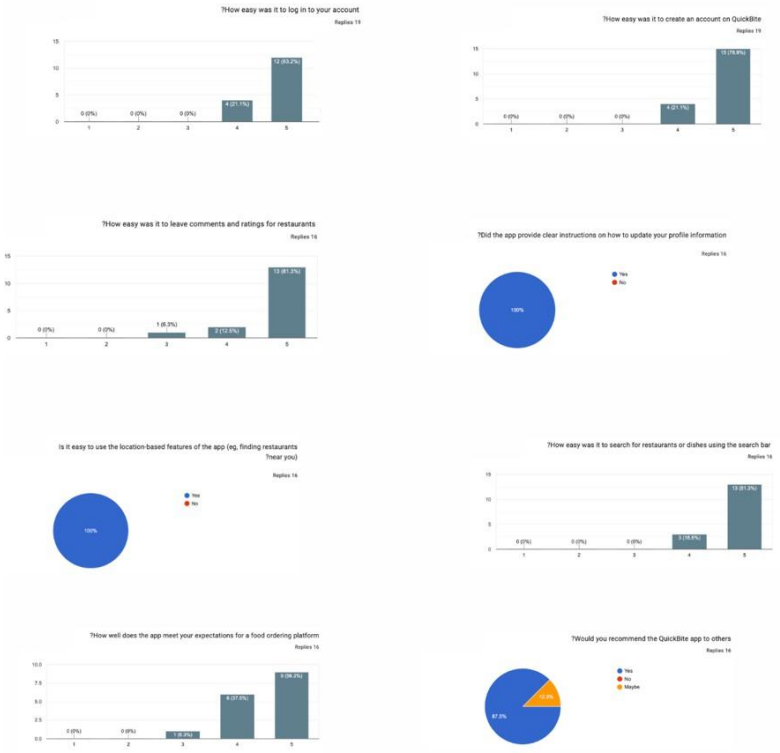

Fig. 21 *User acceptance testing results of Functionalities*

Fig. 21 illustrates charts and graphs assessing user comments on QuickBite's usability and usefulness. QuickBite users found signing in and establishing an account easy. Restaurant reviews were likewise simple, with most respondents giving it the highest rankings. Users also unanimously agreed that the app offered straightforward profile update instructions.

Eventually, all the participants found the app's location-based functions, such as discovering nearby restaurants, simple to deal with. Most people found the search bar easy to use to find restaurants and foods. The software fulfilled respondents' meal ordering expectations, and a large percentage would suggest QuickBite to others, indicating user happiness.

5. Conclusion

Finally, the QuickBite application has the potential to significantly improve the restaurant management experience. By exploiting existing strengths and adopting the proposed upgrades, the platform may become a more efficient and user-friendly tool for customers and restaurant owners. QuickBite may continue to improve its services by iterating and refining them continuously, increasing customer satisfaction and promoting a seamless eating and food delivery experience for communities throughout the globe.

The system's architecture is iterative, with Flutter and PHP used to provide adaptation and robustness. The user interface designs offer smooth interactions for both users and administrators.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *Abobakr Eisa Omer, Abd Samad Bin Hasan Basari;* ***data collection:*** *Abobakr Eisa Omer, Abd Samad Bin Hasan Basari;* ***analysis and interpretation of results:*** *Abobakr Eisa Omer, Abd Samad Bin Hasan Basari;* ***draft manuscript preparation:*** *Aabobakr Eisa Omer, Abd Samad Bin Hasan Basari; All authors reviewed the results and approved the final version of the manuscript.*

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