



Figure 1:

Software Documentation and Technical Writing

Ninja application

Team

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Abstract

It contains the delivery application "Ninja" that aims to solve the challenges that change the lifestyle and the increasing reliance on delivery services, and existing applications such as HungerStation, Jahez and Mrsool that provide convenient services to users, and analysis of functional and non-functional requirements, and design of different user interfaces such as login, browsing products and orders and potential economic impacts on restaurants and consumers, and contains analytical statistical data about the delivery application "Ninja", we talked about the advantages and disadvantages of the HungerStation, Jahez and Mrsool applications and we also talked about the advantages of our Ninja application, the Ninja application needs an effective base to use information related to users, orders, services and services, and choosing a diverse MySQL database is very important, and we used the design of the structural relationship model, and the system architecture model was used to provide a comprehensive view of the structure and architecture of the Ninja application and how its various components work.

1 Introduction

Applications are distinctive services provided by user applications for applications from restaurants to home or work, which helps users save time and effort in going to restaurants and waiting in lines to get food. Users can now enjoy their favorite food in Saudi restaurants easily and conveniently, thanks to artificial intelligence technology, basic delivery applications for users have been developed effectively.[1] Delivery applications are considered a fast

and reliable delivery service, and the best Lebanese, Italian, Turkish, Egyptian, Arab, Indian, seafood, Iraqi and popular restaurants can be easily found through these applications. You can now search for the nearest restaurant and enjoy the offers and discounts provided by restaurants, saving money and time. Modern technologies are used to improve the user experience in using these applications[1]

Give customers the opportunity to order what they want from an endless number of menus and enjoy the most wonderful food from the comfort of their home. Listing your restaurant on the Ninja delivery app is a great opportunity to reach more customers and increase sales. If this app did not exist, there would be many problems, including:

1. Changing lifestyle

- Increased reliance on home cooking: People will be forced to cook at home more, which may lead to a change in eating habits.[5]
- Loss of convenience: The convenience provided by delivery services will decrease, which may lead to an increase in the time spent preparing meals.[5]

2. Impact on the economy

- Decrease in restaurant sales: Restaurants will find it difficult to attract customers, which may lead to a decrease in revenues.[5]
- Decrease in variety of food options: Access to different types of food may become more difficult, which affects the variety of meals.[5]

Therefore, the Ninja app was created to solve all these problems by saving time by making it easy for users to order food and products without having to go to the store or restaurant. Also, the variety of options by providing a wide range of options from different restaurants and shops, making it easy to choose what suits the taste, and the design of easy-to-use interfaces makes it easy to browse menus and place orders, and track orders in real time, giving users a sense of control and reassurance.[5] The Ninja application is a cloud system

that works mainly to display the various products or goods offered by merchants through the application, so that the customer orders these products or goods through the application and they are delivered to him by the application team that he owns and is managed by the service provider according to the service provider's management policy.[5] It is your online supermarket. Everything you buy in the supermarket can be ordered from us. We will deliver it to your door in minutes. Get everything from fresh vegetables and fruits to the ingredients needed for your dinner, but also everything you need for a happy hour.[5]

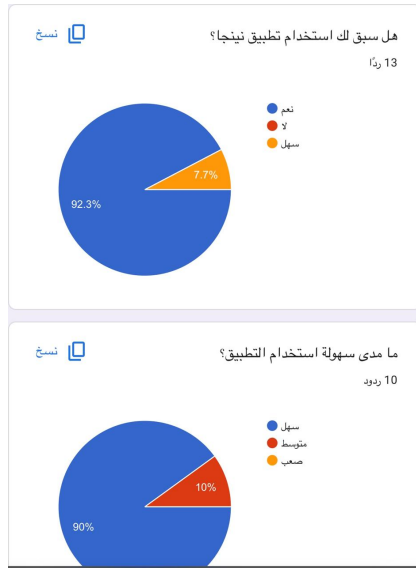


Figure 2: The answer was that approximately 92% answered yes. The answer was that approximately 90% answered it was easy.

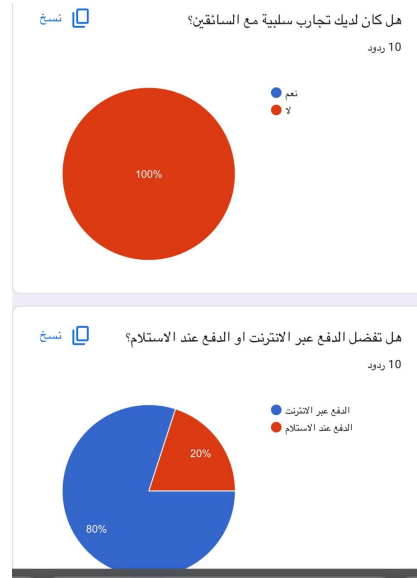


Figure 3: the answer was that 100% answered no. the answer was that 80% prefer to pay online

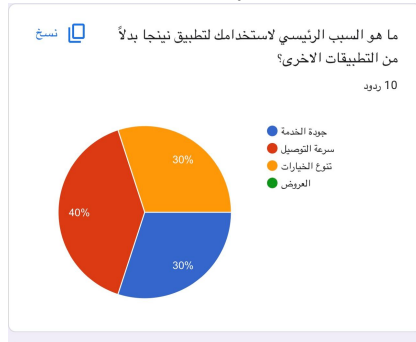


Figure 4: 40% fast delivery

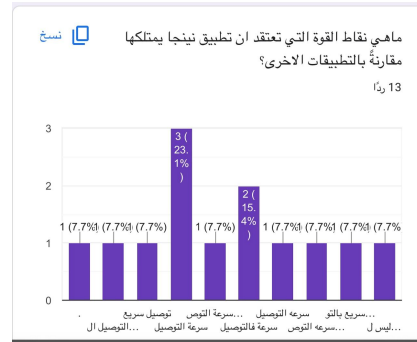


Figure 5: fast in delivery

Through the opinions that appeared in this survey, it became clear to me that the Ninja application needs improvements in order to become one of the most used applications.

First, in order to improve the customer experience for the application, the application must provide a service to all places, including villages and remote places, not just cities.

Also, to improve it, the number of drivers must be increased for faster delivery and a better experience, and also improve the user experience by simplifying the registration process by reducing the registration or ordering steps.

Also, provide all payment methods, including Tabby and Tamara, and provide a service to track the order and continuous updates until it arrives using GPS. I also concluded through the survey that the Ninja application is fast in delivery and provides a variety of options to satisfy all customers

1.1 Exiting programs

1.1.1 HungerStation App

- **Advantages**

Variety of options It offers a wide variety of restaurants and cuisines, User friendly interface The simple design makes browsing and ordering easy, Offers and discounts The application provides periodic offers and discounts on orders, Customer Service Good and responsive technical support.

- **disadvantages**

Delivery prices Delivery prices may be high sometimes, Delivery delays, Some orders may be delayed, especially during peak times, Food Quality Food quality may be affected during the delivery process.[2]

1.1.2 Jahez App

- **Advantages**

Ease of use Simple and easy to use interface, Order tracking: Ability to track the order status directly, Multiple options Many restaurants and cuisines are available, Fast delivery service The delivery service is usually fast.

- **disadvantages**

Restaurant availability Some restaurants may not be available in certain areas, High prices Prices can be higher than buying directly from the restaurant, Communication problems There may sometimes be problems communicating with customer service.[3]

1.1.3 Mrsool App

- **Advantages**

Comprehensive delivery It is not limited to food delivery only, but includes delivery of any type of orders. Pre-set price Users can set the price before ordering, Fast service Delivery service is usually fast and efficient, Payment flexibility Multiple payment options.

- **disadvantages**

Service Availability The service may not be available in all areas, Service Quality Service quality may vary based on the delegates, Additional costs Sometimes unexpected additional costs may be added.[4]

1.2 Advantages of the our program

Variety of options The application provides a wide range of restaurants and cuisines, allowing users to choose what suits their tastes. User friendly interface The app has a simple and user friendly design, making it easy for users to browse menus and place orders quickly. Order Tracking Users can track the status of their orders in real time, giving them a sense of comfort and reassurance. Offers and discounts The app offers periodic offers and discounts, helping users save money. Various payment options The application supports several payment methods, including cash on delivery and electronic payment, which provides flexibility for users. Customer Service The app provides good customer support, where they can get help if they face any issues. Fast delivery The app focuses on providing a fast and reliable delivery service. Ratings and Reviews The app allows users to rate restaurants and review their experiences, helping others make informed decisions.

2 REQUIREMENTS ANALYSIS

In this chapter, we will comprehensively review the system requirements, which form an important foundation for developing any successful application or system. We will identify the functional and non-functional requirements that a Ninja application needs to ensure an excellent user experience and achieve the specified goals.

2.1 FUNCTIONAL REQUIREMENTS

2.1.1 User Registration and Authentication

- Users must be able to register using their email address or phone number.
- Users must be able to log in with their credentials (email/phone and password).
- Users should have the option to reset their password.

2.1.2 User Profile Management

- Users must be able to view and edit their profile information.
- Users should be able to manage their delivery addresses and payment methods.

2.1.3 Browse Products and Services

- Users should be able to browse a list of available restaurants and products.
- Users should be able to browse a list of available restaurants and products.

2.1.4 Add to Cart

- Users must be able to add items to their shopping cart.
- Users should have the ability to modify quantities or remove items from the cart.

2.1.5 Order Checkout Process

- Users must be able to review their cart before proceeding to checkout.
- Users should be able to select a delivery address and payment method during checkout.
- The app must provide an order summary before confirmation.

2.1.6 Order Tracking

- Users must be able to track the status of their orders in real-time.
- The app should provide updates on the estimated delivery time and the location of the delivery person.

2.1.7 Rating and Reviews

- Users should be able to rate restaurants and delivery services.
- Users must be able to leave comments and reviews based on their experience.

2.1.8 Customer Support

- The app must include a feature for users to contact customer support.
- Users should have access to FAQs and help resources.

2.1.9 Notifications

- Users must receive notifications regarding order status, promotions, and updates.
- The app should allow users to customize their notification preferences.

2.1.10 Promotions and Discounts

- The app should provide options for users to apply promo codes and discounts during checkout.
- Users should be able to view available promotions.

2.2 Non-Functional Requirements

2.2.1 Performance

- The app should handle a high number of concurrent users and requests without significant degradation in performance.
- Response times for user actions (e.g., loading menus, placing orders) should be under 2 seconds in most cases.

2.2.2 Availability

- The app must be operational 24/7 with minimal downtime, targeting an uptime of 99.9
- There should be a clear plan for disaster recovery and system restoration.

2.2.3 Scalability

- - The app should be scalable to accommodate growth in user base and order volume without performance loss.
- The architecture should allow for easy addition of resources (e.g., servers, databases) as needed.

2.2.4 Security

- The app must comply with industry standards for data protection and user privacy, including encryption for sensitive data.
- User authentication should include secure methods, such as two-factor authentication (2FA).

2.2.5 Usability

- The app should have an intuitive and user-friendly interface that is easy to navigate for users of all ages.
- User documentation and help resources should be readily available within the app.

2.2.6 Compatibility

- The app must be compatible with the latest versions of major mobile operating systems (iOS and Android).
- The app should function properly on a range of devices and screen sizes.

2.2.7 Maintainability

- The app should be designed for easy updates and maintenance, allowing developers to fix bugs and add features with minimal disruption.
- Comprehensive documentation should be available for both users and developers.

2.2.8 Reliability

- The app should perform consistently without crashes or unexpected behavior.
- There should be mechanisms for error logging and reporting to facilitate quick resolution of issues.

2.3 Conclusion

At the end of the requirements chapter, we find that defining requirements accurately and clearly is an essential step in the Ninja application development process. We have identified functional requirements that reflect the needs of users, in addition to non-functional requirements that contribute to ensuring the performance and efficiency of the system.

3 design

At this stage, specific ideas and requirements are transformed into visual and detailed models, making it possible to visualize how the system will work and how users will interact with it.

3.1 interfaces

The Ninja app is a platform designed to facilitate a variety of services for users, making it an ideal choice for many needs. The app interfaces feature a modern and simple design, making it easy for users to navigate and use the available features.



Figure 6: Sign in section

3.1.1 Sign in section:

- Sign in with Apple: A button that allows users to sign in with their Apple accounts.
- Sign in with Google: Another button to sign in with a Google account.
- Option to sign in with a phone number.
- Provides the ability to change the language (such as "English").



Figure 7: Phone Number Verification Section

3.1.2 Phone Number Verification Section:

- A field to enter the verification code (usually consisting of several numbers), where the user can enter the code sent to his phone.
- Resend Code Button: An option to resend the verification code, giving the user a new chance if the code does not arrive the first time.
- Timer: Shows the time remaining before the code is resent, giving a sense of timer.



Figure 8: Grocery section

3.1.3 Grocery section:

contains the "Best Offers" section: - Three other offer cards: A. "Always Fresh" with product images. - "Ninja Fahem Al Tabkha" with cooking discounts up to 50- "Weekly Offers" with discounts up to 50- Different tags have been identified such as "Imported Products", "Coffee Break", "New".

-This page displays a variety of products and offers, with a focus on shopping and food, and quick access to the different categories and services provided by the application.



Figure 9: Restaurants Section

3.1.4 Restaurants Section:

-It contains a search box that says "Search for a type or restaurant (example: Burger, Al Baik...)" and also contains the best offers and contains a restaurants section. -This interface is designed to facilitate the process of choosing and ordering food from a variety of restaurants, with a focus on special offers and competitive prices. The design combines prominent offers with easy classifications to help quickly browse the available options.



Figure 10: Search Section

3.1.5 Search Section:

There is a search box that says "Search for products". This icon is designed in a simple and clear way to facilitate quick access to the search function in the application, and it is an essential part of the user interface to facilitate the browsing experience and find the required products or services.



Figure 11: Orders section (Basket)

3.1.6 Orders section (Basket):

The selected list includes different items that can be added to the basket. Each product contains: - Product Name - Product Price - Increase Button (+): Allows the user to increase the quantity of the product. - Decrease Button (-): Allows to decrease the quantity. Total Price: - The total cost of the items in the basket is calculated. Payment Options - Such as paying by credit card or other payment methods.



Figure 12: My Account Section

3.1.7 My Account Section:

- Contains the user's personal account name - It also shows the phone number and the phone number in addition to the account that constitutes the users access to their information. Edit Profile: - There is an "Edit" option that allows the user to update his personal information such as name, phone number or any other details. User Account: - A section that provides account information such as the current status (this is 0.00 Saudi Riyals). Additional Options: - There are options for settings such as "Allow Notifications" and "History" to view previous orders.

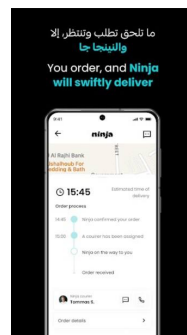


Figure 13: Order Tracking Section

3.1.8 Order Tracking Section:

Location Map: - The interface may contain a map showing the location of the representative, which helps the user to know the location of his order. Estimated Delivery Time: - Shows the expected time of arrival of the order. Event Timing: - A timeline showing the stages of the process: - 14:15: Order confirmation. - 14:30: Representative appointment. - 15:00: Other details about the order progress. Representative Name: - Shows the name of the representative responsible for delivering the order (for example, "Toms S."), which helps the user to know who will deliver the order. Order Status: - Different statuses may appear such as "Assigned", "On the way" or "Delivered".

3.1.9 summary

Ninja app interfaces are designed to be attractive and user-friendly, making it easy for users to access the services they need quickly and efficiently. By focusing on user experience, the app seeks to provide added value to its users.

3.2 database

Ninja application needs an effective database to manage information related to users, orders, restaurants, and specialty. Choosing the database base that it relies on depends on the application requirements, the type of data, and the requirement. Here we will review some common options, with an explanation of each one.

3.2.1 MySQL

MySQL is an easy-to-use relational database for the source, and can be widely used for web applications.

- Features: Specialized performance It is characterized by speed.
- Transaction support: ACID (atomicity, consistency, isolation, durability) profit sharing, which ensures data integrity.
- Powerful query language: It uses SQL, which makes it possible to deal with complex data.
- Scalability: Small and large applications can be used.
- Uses: Suitable for user data, orders, and restaurant related data.

In this image we show the user's table showing the user number, user name, email, phone number and password In this picture we show the restaurant's

Output:

user_id	name	email	phone	password
65	mnal	mn9999kh@gmail.com	0743211359	54378698
95	Zhoor	ZOH90kh@gmail.com	0753201359	872178698

Figure 14: table user

special table, which shows the restaurant number, restaurant name, restaurant address, phone number, and restaurant rating. Also, an update was made to the McDonald's restaurant rating.

restaurantID	name	address	phone	rating
60	macdonals	jeddah	0390641378	4.0
71	albaik	jeddah	0390656897	4.9

restaurantID	name	address	phone	rating
60	macdonals	jeddah	0390641378	4.8
71	albaik	jeddah	0390656897	4.9

Figure 15: table restaurant

In this image, we show the product's table, which shows the product number, restaurant number, product name, product price, product description, and an update has also been made to the product price.

productID	restaurantID	name	price	description
69	60	Burger	23.50	burger with cheese
productID	restaurantID	name	price	description
69	60	Burger	30.00	burger with cheese

Figure 16: table products

In this image, we show the special table for orders, which shows the order number, the restaurant number, the order date, the total amount of the order, and the order status (delivery pending, delivered, etc.). We also worked on updating the order status from delivery pending to delivery.

orderID	user_id	restaurant_id	order_date	total_amount	status
38	65	71	1446-02-12	83.50	under delivery
orderID	user_id	restaurant_id	order_date	total_amount	status
38	65	71	1446-02-12	83.50	delevred

Figure 17: table order

3.2.2 Entity Relationship diagram(ERD)

Entity-Relationship Diagram is a common technique for data structures and database systems design. In this image we have made the relationships

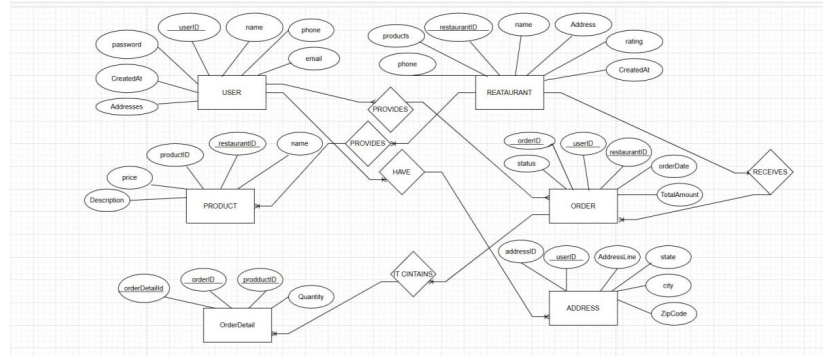


Figure 18: ER

between entities

1- Between the restaurant and the product, a one-to-many relationship (one restaurant can offer more than one product)

2- Between the user and the address, a one-to-many relationship (one user can have more than one address)

3- Between the restaurant and the order, a one-to-many relationship (one restaurant can receive more than one order)

4- Between the user and the order, a one-to-many relationship (one user can make several orders)

3.3 System architecture

A system architecture is a conceptual model that specifies the structure, behavior, and other perspectives of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structure and behavior of the system.[7]

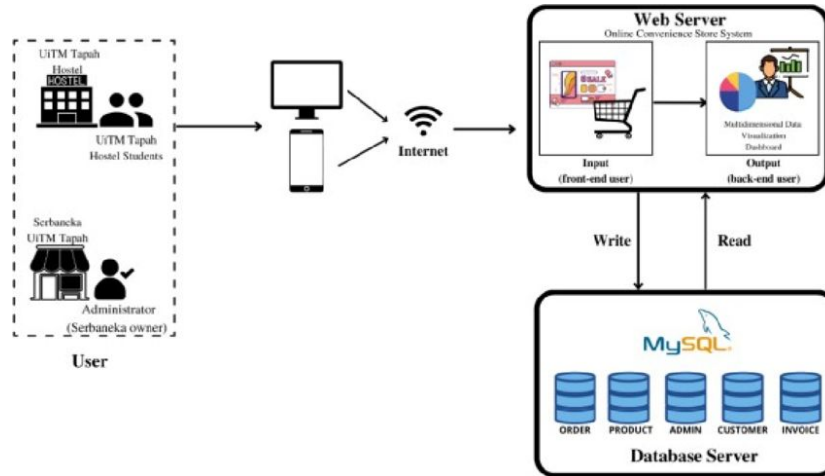


Figure 19: System architecture
[6]

3.4 summary

At the end of the design phase, we find that it represents a crucial step in developing any successful system. By transforming the requirements into visual and detailed models, we were able to create a clear vision of the user interface and the overall user experience. This phase helped in defining the required technical architecture, ensuring that all components of the system are integrated effectively.

4 Conclusion

Ninja App is an innovative solution that meets the needs of users in a fast-paced and changing world. By providing fast and reliable delivery services, the app makes people's lives easier and enhances their dining experience. Ninja combines convenience, variety, and quality, making it an ideal choice for foodies looking to explore new options or simply want to enjoy their favorite meals in the comfort of their homes.

Moreover, the app supports local restaurants and helps boost the local economy by providing an effective platform to increase sales and reach a wider audience. With a focus on safety, performance, and user experience, Ninja is always striving to improve its services and provide the best possible experience for all its customers.

In a world that is witnessing an increasing growth in the use of technology, Ninja App remains at the forefront of innovation in the delivery services sector, ensuring that it meets the changing needs of users and contributes to the development of society as a whole.

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