Software Documentation and Technical Writing

Name ID	Task
Retaj AlZbydi 444002396	Conducting the survey , identifying the similar program, mentioning its advantages and disadvantages, ans why Nusuk App is better , design interface.
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1   Abstract

The "Nusuk" application is an innovative platform aimed at enhancing the Hajj and Umrah experience by providing a comprehensive range of services. The application assists pilgrims in every aspect of their journey, from planning to return, making it easier for them to perform their rituals effectively. "Nusuk" provides accurate information about the rituals and offers guidelines on how to perform them, along with facilities for booking hotels and transportation. It also provides insights into the optimal times for performing rituals, thereby enhancing trip organization. The application helps improve communication between visitors and relevant authorities, aiding in the resolution of any issues that may arise during the journey. With its user-friendly interface, pilgrims can quickly access support and assistance. The application also includes educational content about the historical and religious landmarks in Mecca and Medina, enriching the spiritual and cultural understanding of the journey. "Nusuk" represents a significant step toward improving Hajj and Umrah services and enhancing visitor satisfaction, contributing to a smoother and safer pilgrimage experience.

2   Introduction

Hajj and Umrah are considered one of the most vital fields in the Islamic world, attracting millions of Muslims from around the globe annually. Performing these rituals is a unique spiritual experience that requires meticulous organization and high coordination among various stakeholders, such as the Ministry of Hajj and Umrah, service providers for transportation and accommodation, as well as the provision of accurate information about the rituals and sacred places. With the increasing number of pilgrims and visitors, it has become essential to develop technological solutions that facilitate procedures and provide comprehensive and reliable information.
In light of this need, the "Nusuk" program emerges as one of the innovative solutions aimed at enhancing the Hajj and Umrah experience. The program offers a variety of digital services that include hotel and transportation bookings, in addition to providing essential information regarding the rituals. Through its user-friendly interface, pilgrims can access the information and support they need at any time, thus enhancing their spiritual and cultural experience during the Hajj and Umrah period. Nusuk is an innovative program designed to enhance the Hajj and Umrah experience through comprehensive digital services. It facilitates every aspect of the journey, from planning to return, helping pilgrims perform their rituals effectively.
The program provides extensive information about the rituals, guidelines for their performance, and conveniences for booking hotels and transportation. It also offers insights on optimal times for rituals, enabling better trip organization.
Nusuk fosters communication between visitors and authorities, helping resolve

any issues during the journey. With a user-friendly interface, pilgrims can quickly access support. Additionally, Nusuk includes educational content about historical and religious landmarks in Mecca and Medina, enriching the spiritual and cultural understanding of the journey. By combining technology with traditional services, Nusuk aims to deliver a seamless and safe experience, reflecting Saudi Arabia's commitment to serving its guests. This initiative represents a significant step towards improving Hajj and Umrah services and enhancing visitor satisfactio The Nusuk app addresses many challenges faced by pilgrims and visitors. One of the main difficulties is trip planning, as the app provides comprehensive information and clear guidelines about the rituals, making it easier for users to understand the necessary steps to perform their acts of worship. Nusuk also helps reduce the confusion associated with booking various services, such as hotels and transportation, by providing a single platform that allows users to make all necessary reservations easily. The app enhances communication between pilgrims and relevant authorities, facilitating quick and efficient resolution of any issues that may arise. Additionally, Nusuk tackles the problem of a lack of accurate information about sacred places by offering educational content that helps visitors learn about important landmarks and their cultural and religious history. The Nusuk app contributes to making the Hajj and Umrah experience smoother and safer, allowing pilgrims to focus on their worship.

3 The Purpose

The "Nusuk" application has become the first official platform that provides planning and booking options, allowing pilgrims to enjoy a special experience when visiting .Mecca and Medina for Hajj, Umrah, and visitation. It enables users to access many services remotely, such as electronic visas, booking accommodations and transportation, as well as accessing educational and enriching information.

3.1 Existence "Nusuk" Application

The "Nusuk" application exists to meet the needs of pilgrims and Umrah performers. It aims to provide all the information and services they require in one place. The application facilitates access to information and simplifies the procedures for Hajj and Umrah, helping to improve users' experiences and their ability to perform the rituals with ease

3.2 Problems Solved by "Nusuk" Application

- Difficulty of information: Problem: Pilgrims face difficulty in obtaining accurate information about Hajj rituals, such as holy sites and entry requirements. The information available is often fragmented and outdated, leading to confusion. Solution: Nusuk App provides reliable and up-to-date

information in one place, making it easy for pilgrims to access all necessary details.
- Complexity of booking: Problem: Registration and booking services such as airline tickets and hotels can be complex and difficult, especially for people performing Hajj and Umrah for the first time. This complexity can lead to missed opportunities or delays. - Solution: The app provides an easy-to-use interface that allows booking services, simplifying the booking process.
-Difficulty of navigation: Problem: Moving between holy sites such as Mecca and Medina can be difficult due to congestion and busy roads. They may find themselves needing to search for suitable means of transportation, which causes wasted time. Solution: The app provides accurate information about available means of transportation, making it easier to plan their trips and get around.
- Loss of Documents: Problem: Losing important documents such as permits and passports can cause problems such as not being able to perform the rituals or return home. Solution: The application allows storing important information and documents digitally, reducing the risk of losing them and ensuring easy access to them at any time.

3.3   Needs Addressed by "Nusuk" Application

- Ease of booking: Need: It needs a simple and easy-to-use booking system to avoid complications. Solution: The application provides a smooth interface that allows them to book services quickly and without complications.
- Saving time: Need: It seeks to reduce the time spent waiting and booking procedures. Solution: The application provides direct and real-time information, helping pilgrims avoid queues and unnecessary waiting.
- Easy communication: Need: Pilgrims need an effective way to communicate with others, whether they are with a group or service providers. Solution: The application provides direct communication channels, which facilitates coordination and reduces any confusion.
- Teaching the rituals: Need: Pilgrims need clear information on how to perform the rituals correctly. Solution: The application provides comprehensive educational content on the Hajj rituals, helping pilgrims understand the rituals and perform them correctly.
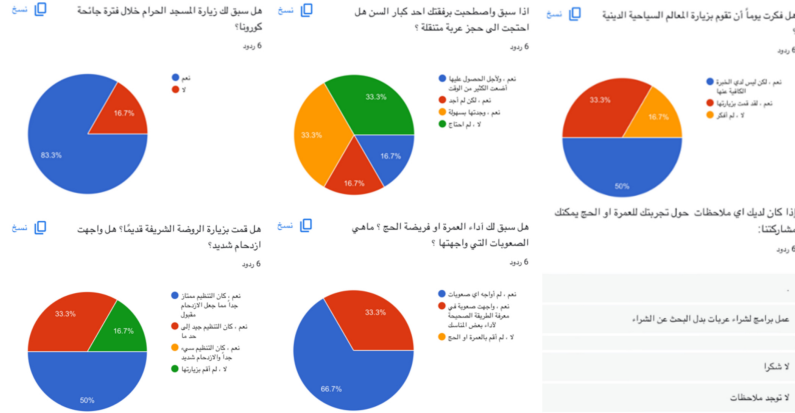
4 Survey Result

Figure 1: Survey Result

4.1 "Nusuk" Application is Considered Essential for Several Reasons

- Providing accurate information.
- Facilitating booking procedures.
- Improving mobility.
- Storing documents.
- Teaching rituals.
- Effective communication.

4.2 Method of Use "Nusuk" Application

- Download the app
- Create an account
- Browse services
- Book services
- View information
- Mobility and transportation

- Storing documents

- Communication

- Support and assistance

Nusuk application is an essential tool for improving the Hajj experience, and it is easy and simple to use to obtain the necessary information and services.

5 Existing System

Application	Itamarna	Mu'tamirun
Advantages	1. Ease of Obtaining Permits: Quick permit extraction. 2. Integration with Government Entities: Reliable information. 3. scheduleorganization: Helps in scheduling appointments.	1. Comprehensive Information: Accurate information about Umrah rituals. 2. Service Booking: Easy to book services. 3. Community Interaction: Features for communication. 4. Educational Content: Videos and educational resources.
Disadvantages	1. Technical Issues: Some users experience freezing. 2. User Congestion: Difficulty accessing services during peak times. 3. User Experience: Some processes may not be smooth.	1. Lack of Integration with Government Entities: Gaps in official information. 2. Emergency Support: Technical support may not beavailable 3. Technical Issues: Poor performance when using multiple features. 4. Outdated Content: Some information may be outdated.

5.1 "Nusuk" is the best choice

The "Nusuk" application is considered better than "Mu'tamirun" and "I'tamarna" because it provides a smoother user experience through a modern and easy-to-use interface. "Nusuk" combines a comprehensive range of services in one place, making it easy for users to book flights, accommodation, and transportation without needing to switch between multiple applications. Additionally, "Nusuk" offers accurate and updated information about Umrah rituals, helping users better understand the practices. An added advantage is that the application allows users to customize their trips according to their needs, enhancing the personal experience of Umrah.
The direct and prompt technical support provided by "Nusuk" is also a strong point, as users can easily get assistance when needed. Furthermore, the instant notifications offered by the application keep users informed about appointments and updates
Overall, "Nusuk" provides a comprehensive and supportive experience, making it the best choice for pilgrims compared to other applications.

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6 Requirements

6.1 Functional Requirements:

• User Registration and Authentication:
- Users should be able to register and authenticate via the app using email, phone numbers, or social media accounts.
• Personal Hajj/Umrah Trip Planning: - The app should allow users to create a personal Hajj or Umrah schedule.
• Location-Based Services:
- Track the geographic location of important landmarks (Kaaba, Mina, Arafah, etc.).
- Notifications based on the user's location (e.g., when approaching crowded areas).
• Prayer Times and Alerts:
- Provide local prayer times based on the user's location.
- Send notifications or alerts for prayers.
• Virtual Hajj/Umrah Guide:
- Step-by-step guide.
- Video, text, and audio instructions on how to perform Hajj or Umrah.
• Emergency Contacts and Help:
- Quick access to emergency services, hospitals, or help centers.
- Emergency SOS button to alert local authorities or family members.
• Health and Safety Instructions:
- Provide health and safety instructions, during crowded conditions.
- Integrate with medical records or vaccination information.
• Accommodation and Transportation Management:
- Help users book and manage accommodation, provide transportation schedules and allow booking of transportation services.
• Document and Visa Management:
- Allow users to upload important documents such as visas, ID cards, and health certificates.
- Notifications about expiration of required documents or papers.
• Tawaf and Sa'i Counter:
- A counter feature to help users track their Tawaf and Sa'i cycles.

6.2 Non-Functional Requirements:

• Performance and Scalability:
- The application should be scalable to handle a number of users, and support a large number, without downtime especially during high demand seasons.
• Security:
- Data encryption for sensitive information (such as personal details, payment information).
- Use multi-factor authentication to log in.
- Secure storage of documents (visas, ID cards, etc.).

- Ease of use:
- The application should be clear and easy to navigate for users (clear fonts, voice navigation options).
- Availability:
- Provide backup servers to ensure that the application does not crash during critical times.
- Compatibility:
- It should be compatible with iOS and Android devices.
- Data privacy:
- Compliance with global privacy regulations such as GDPR.
- Obtaining clear consent from the user to collect and process data.
- Providing control to users over their personal data (download, delete, etc.).
- Reliability:
- The application should work continuously without errors or crashes.
- Providing backup mechanisms to prevent data loss in the event of a crash.
- Support and maintenance:
- Regular updates to fix bugs, improve security, and add new features.
- 24/7 customer support to resolve technical issues during Hajj/Umrah seasons.
- Legal compliance:
- Local laws and regulations in Saudi Arabia and other countries where the application is used must be complied with.
- Response time:
- APIs and data requests should be processed within a few seconds to ensure rapid response.

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7 Nusuk Application Interfaces:

7.1 Main Interface:

- This interface displays a comprehensive control panel for users, and is the primary user portal to view available services and features includes:
. Ritual Guides: Step-by-step instructions for performing various rituals such as Tawaf and Sa'i.
. Nusuk Digital Wallet: An electronic wallet integrated into the Nusuk app, allowing users to easily perform financial transactions (wallet replenishment, payment, donation and service booking) related to their religious journey.
. Supplications and Remembrances: A list of suggested supplications and prayers for each stage of Hajj or Umrah.
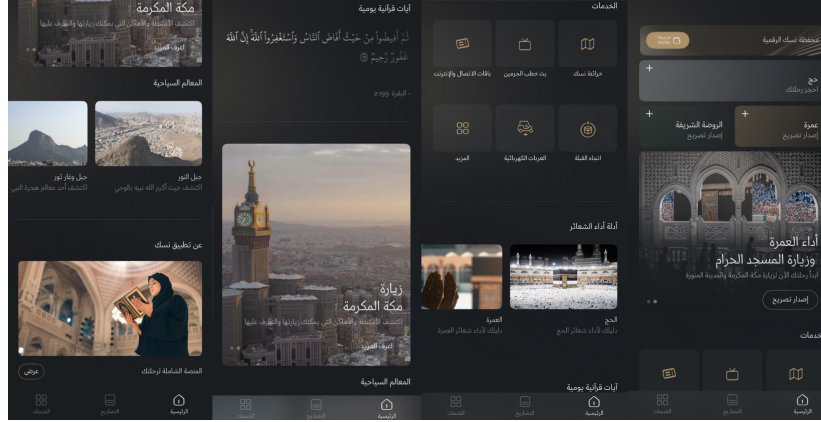. Quick Access to Services: Quick shortcuts to access other services such as booking transportation or accommodation.

Figure 2: Main Interface

7.2　Services Interface:

- This interface provides a list of all services available in the application to help pilgrims and Umrah performers facilitate their journey, such as reservations and assistance includes:
. Travel and Tourism: This icon provides a display of booking and accommodation services, including flight or hotel reservations.
. Transportation: This icon provides a display of transportation reservation and management services, including bus or train reservations.
. Qibla Direction: This icon provides the direction of Qibla in addition to prayer times.
. Help and Support: It contains frequently asked questions in addition to contact numbers for the Nusuk application support team for inquiries and suggestions.
. Nusuk Maps: A service that enables you to know the most important sites in Makkah and Madinah (public services, emergency centers, mosques, landmarks, holy sites, care centers, airports and transportation, health services, parking lots, police stations, libraries).
. Prayer halls of the Prophet's Mosque: An icon to know the status of crowded prayer halls.
. Schedule of Imams and Muezzins: A service that enables you to view the weekly schedule of Imams and Muezzins in the Grand Mosque and the Prophet's Mosque and learn about their biographies.
. Broadcast of the sermons of the Two Holy Mosques: An icon that enables you to watch the live broadcast of the Friday sermon.
. Purchase of communication and internet packages: A service available to individuals arriving through air ports that enables them to purchase communication and internet packages from approved service providers in the Kingdom of Saudi Arabia. . Electric vehicles: A service that enable people to book vehicles and pay electronically and easily, in addition to specifying the nearest point of receipt.

Figure 3: Services Interface

7.3   Permits interface:

- This interface enables users to manage their various permits, such as Hajj or Umrah permits includes:
. Display of current permits: Display a summary of active permits, such as the permit to enter Mecca or visit the holy places.
. Issuing permits: A special section for submitting requests to issue new permits or renew old permits.
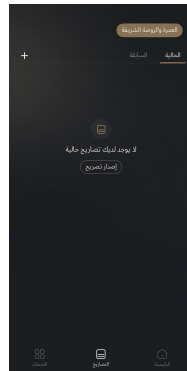. Display of previous permits: Display a summary of expired permits.

Figure 4: Permits interface

8   System Architectures

Operating Systems Supported by the Nusuk App:
The Nusuk app, developed by the Ministry of Hajj and Umrah in Saudi Arabia, relies on operating systems to provide its services to users. The main systems that support the Nusuk app are:
1. Android: It is one of the most widely used operating systems, known for its flexibility and broad app support. Users of Android devices can download the Nusuk app from the Google Play Store, making it easy to access its services.
2. iOS: This is the operating system for Apple devices such as iPhones and iPads, characterized by high security and efficiency. Users of Apple devices can download the Nusuk app from the App Store, providing a seamless experience for these devices.
3. Web Operating Systems: Services of the Nusuk app can be accessed through web browsers on various operating systems such as Windows, macOS, and Linux. This allows users to reach Nusuk services via the internet, facilitating usage on computers and smartphones.

8.1   Database:

A simplified explanation of the database structure suitable for an app similar to "Nusuk" that manages bookings, payments, and notifications for users:
• When a user registers and logs into the app, their information is stored in the User table.
• If the user books a service or package, this booking is recorded in the Bookings table and linked to the user's ID (userID).
• After that, if the user pays for this booking, the payment transaction is recorded in the Payments table and linked to the booking ID (bookingID).
• Throughout these processes, notifications can be sent to the user (such as booking confirmation or payment reminders), which are recorded in the Notifications table and linked to the user ID.
With this design, an app like "Nusuk" can track users, manage bookings and payments in an organized way, and ensure communication with users through notifications.
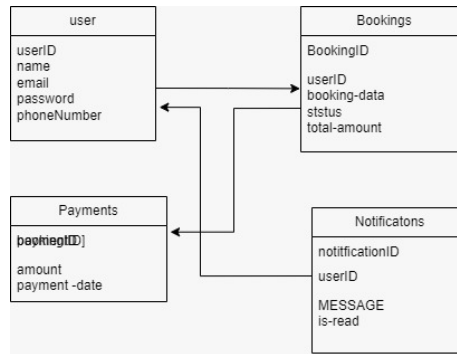
Figure 5: Class Diagram

8.2 Data model:

Model	Attributes
Service	Service ID, Name, Description, Price, Provider ID, Created At, Updated At
Booking	Booking ID, User ID, Service ID, Booking Date, Status, Created At, Updated At
Payment	Payment ID, Booking ID, Amount, Payment Method, Status, Created At
Notification	Notification ID, User ID, Message, Is Read, Created At

8.3 Server:

Cloud Servers: Used to securely and efficiently store and manage data, such as Microsoft Azure services.

Database Servers: For managing and storing user information and bookings, such as MySQL.

API Servers: Allow data exchange between the application and other components, like payment and permit systems.

Technical Support Servers: Provide support services through multiple channels, such as live chat or email.

9   Conclusion

The "Nusuk" application represents an important step towards improving the experience of pilgrims and Umrah performers by integrating modern technology with traditional services. The app provides a comprehensive set of features that help facilitate the planning and organization of trips, including accurate information, the ability to book services, and effective communication with relevant authorities.
Thanks to its user-friendly interfaces, pilgrims can access all the information and services they need in one place, reducing stress and confusion. The application demonstrates how technology can play a vital role in enhancing spiritual journeys, reflecting Saudi Arabia's commitment to providing a comfortable and safe experience for its guests.
"Nusuk" not only contributes to streamlining the procedures for Hajj and Umrah, but with its ongoing development and improvement, it can achieve further excellence in delivering services to pilgrims and Umrah performers.

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