Tawakkalna App

Umm Al Qura University
College of Engineering and Computers
Department of Computer Science

Prepared by:
Amasi Al-montashri 444005974
Amal Alheli 444004202
Supervised by:
Dr. Mona Alofi

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1 *Chapter*

1.1 Introduction

The Tawakkalna app is an official application accredited in Saudi Arabia, developed by the Saudi Authority for Data and Artificial Intelligence "Sdaia." It was released at the time of the spread of the coronavirus and played an important role in curbing its spread. The application contributed to the beginning of its launch by managing the granting of permits electronically during the curfew period. It also contributed to a safe return by clarifying the health status of the app user. It was later developed to achieve Vision 2030, where it has become encompassing various services from all government agencies and provides communication services between government agencies and individuals. Additionally, you can review your data, cards, and official documents with ease through the Tawakkalna app.

1.2 Tawakkalna App Requirements

1.2.1 Functional Requirements

1.2.1.1 Login and Verification: The app requires login using the ID number and password or using Nafath, then verification by sending a message containing the verification code.

1.2.1.2 Search: The app provides the ability to search for the services provided by the app.

1.2.1.3 Technical Support: Technical support can be contacted via email, phone number, account on X platform, or live chat.

1.2.1.4 Appointment Booking: The application allows for easy booking of various appointments according to the selected service.

1.2.1.5 Reminders: The app reminds the user of their most important appointments and reservations, such as reminding them of the upcoming expiration of their national ID so they can renew

1.2.1.6 Preferences: Users can add services and cards as favorites for easy access from the main page of the app.

1.2.2 Non-Functional Requirements

1.2.2.1 Ease of Use: The app provides easy interfaces, and the user can adjust them to suit their needs.

1.2.2.2 Updates: The app provides updates to fix errors.

1.2.2.3 Availability: The app is available 24/7 to meet users' needs.

1.2.2.4 Compatibility: The application supports different systems: iOS and Android.

1.3 Tawakkalna App Tasks

1.3.1 Wakeb: A service that enables you to view the latest publications, share and save them in the checklist, and activate notifications.

1.3.2 Services: A page that collects various services and allows you to review and book public, professional, health, religious, and educational services, as well as family members and events.

1.3.3 Personal: A service that gives the user easy access to their data such as national address, communication numbers, cards such as national identity, and documents such as instruments and CV.

1.3.4 Messages: Government agencies communicate with individuals. The user can view notifications and install the entities.

2 *Chapter*

2.1 Purpose of the App

The purpose of the Tawakkalna app is to provide a digital companion you can rely on to ease your daily life. The application has facilitated access to all government services and other services such as education, religious services, and health services. It addresses the issue of difficulty in accessing services and communicating with authorities by facilitating and organizing communication between users and entities. It also solves the problem of forgetting your personal identification card, as you can display it through the app without needing to carry it with you anywhere. Moreover, it addresses the difficulty in booking appointments, allowing you to book health appointments and Hajj and Umrah appointments quickly and easily.

2.2 Conducting a Survey

Q1:

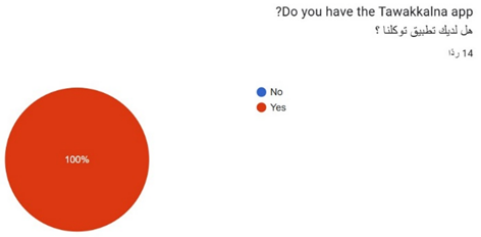

Figure 1: Answers to the first question in the survey

As we note in figure 1, we wanted to know what percentage of people have the application. All responses agreed on one answer, "Yes", which was %100, reflecting the importance of the app to users.

Q2:

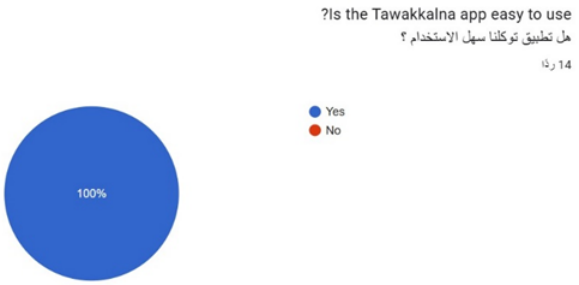

Figure 2: Collected answers to the second question in the survey

In this question we wanted to know how easy it is to use the application. As we note in figure2 all responses agreed on one answer, "Yes", which was %100, reflecting the importance of the app to users.

Q3:

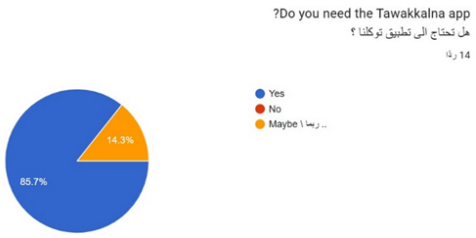

Figure 3: Collected answers to the third question in the survey

In this question, we wanted to know how much users needed the application. As shown in Figure 3, the largest percentage of those who answered "Yes" was 85.7%, which means their great need for it, while the response ratio was 14.3% of the total responses. There were no respondents who indicated that they do not need the app.

Q4:

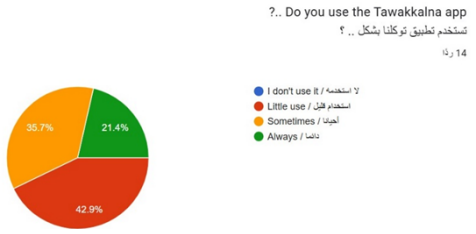

Figure 4: Collected answers to the fourth question in the survey

In this question we wanted to know the rate of use of the app. We note in Figure4 that the proportion of people who answered "don't use" 0% who responded with "little use" is 42.9%, but that doesn't mean they don't need it, and the percentage who answered sometimes was 35.7%. Those who use it permanently are 21.4

Q5:

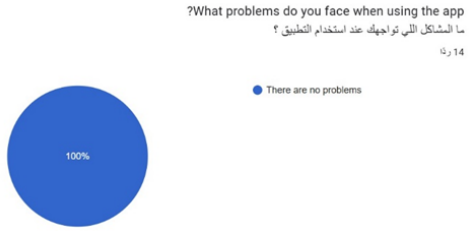

Figure 5: Collected answers to the fifth question in the survey

In this question, we wanted to know what problems users face to improve. We note in Figure5 that everyone answered "no problems." The option of writing was made available in case of problems but a percentage of respondents answered "there are problems" was 0%. This means that the application works with high efficiency.

Q6:

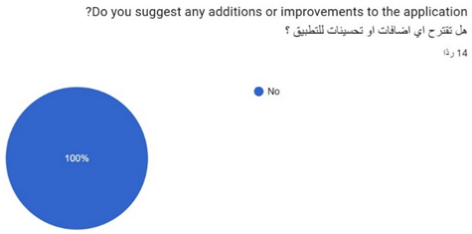

Figure 6: Collected answers to the sixth question in the survey

We wanted to see if the user would like to improve the application and suggest some improvements. The answer option "There are suggestions" has been made available, but we note in Figure6 that the number of people who chose to answer "no suggestions" has reached 100%. This means full user satisfaction with the services provided by the app

2.3 Conclusion

Based on the responses collected from the survey, the app won users' satisfaction and did not have any problems with its use. This is due to the high quality of the application. The app participated in the 2024 Digital Experience Maturity Index, which measures beneficiary satisfaction, user experience, and handling complaints. It was ranked as the highest among government platforms at 91% out of 39 digital platforms[1]. It was ranked second in the best technical project at the PMO Summit 2023 organized by the PMI Project Management Institute, applying international best practices in project management to facilitate individuals' lives and improve the quality of life in the Kingdom of Saudi Arabia[2].

2.4 Similar App

There is no similar application at the moment, but there is an old version of the app that dates back to its inception when it contributed to curbing the spread of coronavirus by offering a booking service for receiving vaccines and screening bookings and showing a person's condition (healthy, infected, immune).

3 *Chapter*

3.1 Application Design

3.1.1 System Architecture

As we see in Figure 7, our system consists of 4 main components.The first component is the user interface, which is the starting point of the user's interaction with the system through their device (such as a phone or computer). The second layer is interface management and authentication, where the user's identity is verified to ensure security.Then the application server layer, which represents the main component of our system, processes requests and communicates with the database.Finally, the database that stores, manages, and retrieves data when needed.These components ensure smooth performance, security, and high reliability for our application.

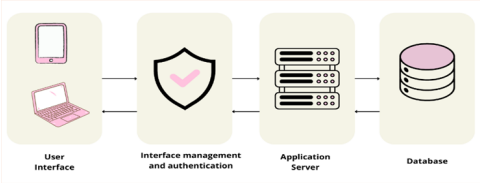

Figure 7: Explanation of system components

3.1.2 Data Model

Figure8 shows the use case diagram, which illustrates how the user interacts with the system through the functions. The user starts by logging in and verifying to access the system, then they can use functions such as search, appointment booking, and technical support. The system sends reminders and notifications to the user about important events, such as booked appointments. Additionally, the user can prefer cards and services for easy access to them.

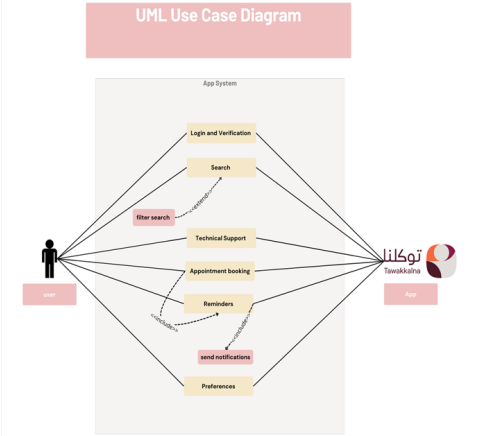

Figure 8: System interactions to illustrate functional requirements

3.1.3 Technical Specifications

The Tawakkalna app requires high efficiency and security with smooth performance. Therefore, it requires a minimum of 2 GB of RAM and up to 4 GB for it to run smoothly. As for the database, it ranges from 5 to 10 gigabytes with scalability, and MySQL is used to ensure security and reliability due to the sensitivity of the information the application handles. The Tawakkalna app is available on Android and iOS operating systems. The application uses Swift for iOS apps and Kotlin/Java for Android apps, with a backend built on Python. GraphQL is used for communication between the front end and the back end. In terms of security, the application relies on Nafath for user authentication, JWT for session management, and end-to-end encryption to protect sensitive data. It also includes a notification system and live chat for technical support using WebSocket.

3.2 Version Control

As we note in Figure9 We used the GitHub version control tool to help manage changes to the document [3].

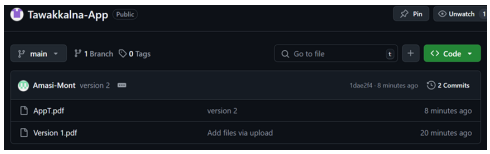

Figure 9: Use GitHub and latex on document

References

[1] https://x.com/tawakkalnaapp/status/1825873701293687244?s=46&t=9tjdoJospT0KyJGcNokJDw

[2] https://x.com/tawakkalnaapp/status/1727763690600997045?s=46&t=9tjdoJospT0KyJGcNokJDw

[3] https://github.com/Amal0099/Tawakkalna-App