



Software Documentation and Technical Writing

Tawakkalna Application

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1 Task Schedule

Name	Task
Ohoud Alzubidi	Introduction
Haila Alnashry	The tasks of the Tawakkalna application
Ohoud Alzubidi	Functional Requirements (User, System requirements)
Haila Alnashry	Non-Functional Requirements
Ohoud Alzubidi	Purpose of Tawakkalna application
Haila Alnashry	Conduct a Survey or Interview
Ohoud Alzubidi	The Existing Programs
Haila Alnashry	Interfaces of Tawakkalna application
Ohoud Alzubidi	Servers and Infrastructure
Haila Alnashry	Databases
Ohoud Alzubidi	Programming Languages
Haila Alnashry	Other Technologies

Table 1: Task Schedule

2 Abstract

This document provides an overview of the software documentation and technical writing for the "Tawakkalna" application, developed by the Saudi Data and Artificial Intelligence Authority as part of the efforts to combat the COVID-19 pandemic. The application is designed to facilitate access to a variety of health and government services, such as displaying users' health status, scheduling vaccination appointments, and managing mobility permits during lockdowns. "Tawakkalna" features a simple and user-friendly interface, making it accessible to a wide range of users. The application delivers accurate and reliable information to support public health awareness among citizens and residents, contributing to enhanced governmental procedures and an improved user experience. By integrating health services with educational and transportation services, "Tawakkalna" serves as a vital tool that reflects the Kingdom's commitment to making life easier for individuals and promoting public health, thereby becoming an essential element in adapting to current and future challenges.

3 Introduction

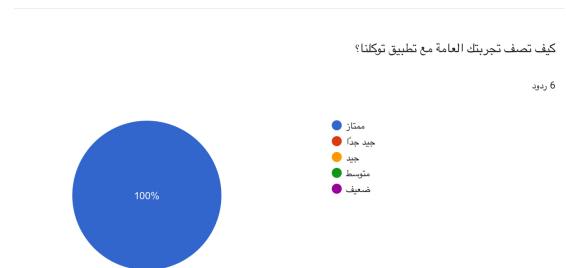
In recent years, the importance of digital solutions in managing public health crises has become increasingly evident. In this context, Tawakkalna stands out as a significant innovation. Developed by the Saudi Data and Artificial Intelligence Authority (SDAIA), this Saudi government application was initially launched to regulate the movement of individuals during quarantine and curfew periods as part of the efforts to combat the COVID-19 pandemic. Over time, Tawakkalna evolved into a comprehensive platform offering a wide range of services, including displaying health status, booking vaccination appointments, receiving notifications about health risks, and integrating with various government entities to provide services such as education, healthcare, and transportation. Today, Tawakkalna is a vital tool for citizens and residents in Saudi Arabia, enabling easy and secure access to government e-services.

3.1 Conduct a Survey

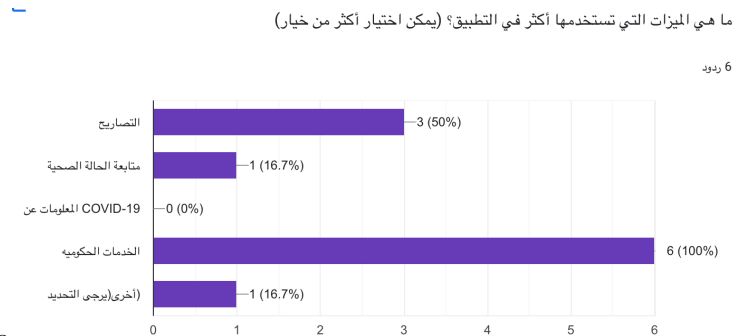
<https://forms.gle/JwWCCsGp2AvUN3r9A>

Below are the pictures included in the survey/interview analysis:

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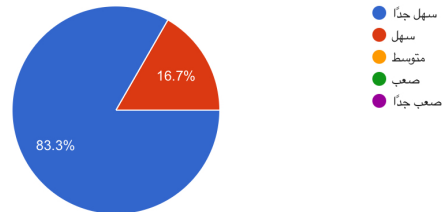
- figure.3.1.1 Tawakkalna Experience Rating
(100 percent of the app users who completed the survey describe their experience with the Tawakkalna app as excellent)



- figure.3.1.2 Most Used Features
(The most used features in the app among those who completed the survey are 100% for government services and 50% for permits. These are the two most utilized features in the app)

ما مدى سهولة استخدام التطبيق؟

6 ردود

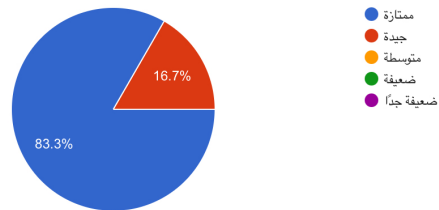


• figure.3.1.3 Ease of Use

(In this image, the graph shows that 83.3 percent of Tawakkalna app users believe that the app is very easy to use, while 16.7 percent think that the app is easy to use)

كيف تقيم سرعة استجابة التطبيق؟

6 ردود

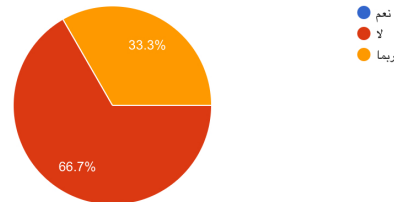


• figure.3.1.4 Response Speed

(In this image, the graph shows that 83.3 percent of Tawakkalna app users describe the response speed of the app as excellent, while 16.7 percent describe it as good)

هل واجهت أي مشاكل تقنية أثناء استخدام التطبيق؟

6 ردود



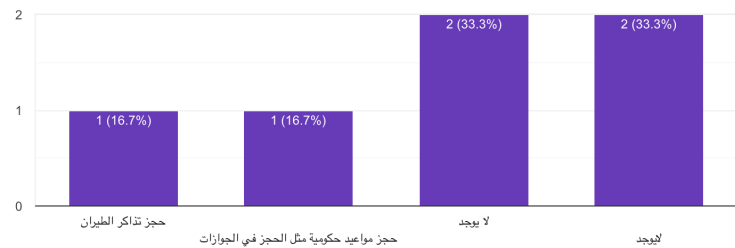
• figure.3.1.5 Technical Issues

(In this image, the graph shows that 66.7 percent of Tawakkalna app users have not encountered any technical issues with the app, while 35.3 percent may have faced some technical problems)

ب

ما هي المميزات التي ترغب في إضافتها إلى التطبيق؟

6 ردود

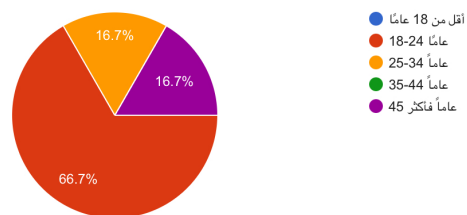


• figure.3.1.6 Feature Requests

(Four people who completed the survey believe that there are no features to add to the app, while one person wants to add a feature for booking government appointments, such as passport bookings, and another person wants to add a feature for booking flight tickets.)

ما فئة عمرك؟

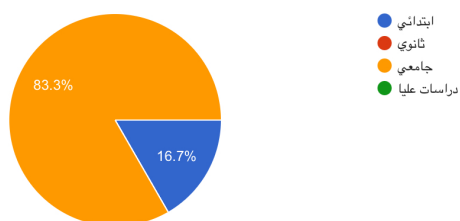
6 ردود



- figure.3.1.7 Age Distribution
(66.7 percent of those who completed the survey are aged between 18-24, while 16.7 percent are over 46 years old, and 16.7 percent are between 26-34 years old)

ما هو مستوى تعليمك؟

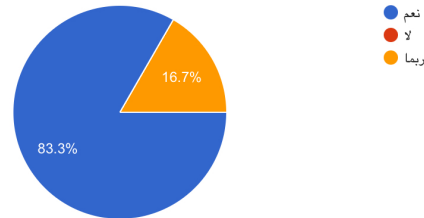
6 ردود



- figure.3.1.8 Education Level
(In this image, the graph shows that 83.3 percent of Tawakkalna app users who completed the survey have a university education, while 16.7 percent have an elementary education)

هل تعتقد أن التطبيق يوفر جميع الميزات اللازمة؟

6 ردود



- figure.3.1.9 Feature Sufficiency

(In this image, the graph shows that 83.3 percent of Tawakkalna app users believe that the app provides all the necessary features, while 16.7 percent think that the app may not provide all the required features.)

3.2 What we could improve based on the responses:

To improve the app, the technical issues occurring, such as freezing and slow response in some cases, need to be fixed. Additionally, certain governmental services that are not yet available in the app, such as booking appointments for passports and reserving transportation tickets, should be added. Also, the responsiveness and speed of the app should be improved.

4 Purpose of Tawakkalna application

Providing health services: It allows users to access health information and data related to the Covid-19 pandemic. and facilitating government procedures: It provides various services from government agencies such as movement permits and obtaining health certificates, as well as electronic cards such as: The health card that contains information about the vaccinations received by the user, which facilitates verifying the immunization status. It is also used to enter public places, which saves time and effort in procedures. also the digital card that is used as an alternative to the national identity in some cases, which facilitates identity verification. It includes movement and travel permits, making it a unified reference for all government transactions.

it solves many problems like: Ease of access to health information: It helps users understand the general health status, infections, and vaccination status. as well the facilitating movement: Providing permission to move during curfew periods or when traveling is necessary. and also reducing congestion: Providing treatment and counseling services through applications, which reduces the need to travel to medical facilities. also it addresses many of needs such as: Access to reliable information: Provides access to accurate information from the Ministry of Health. also Facilitating daily procedures: Helps complete government transactions easily and smoothly. and Promoting public health: By supporting awareness and disease prevention efforts.

5 System Requirements

5.1 Functional Requirements (User, System requirements)

5.1.1 Permit Management:

- The system must allow users to submit requests for mobility permits during lockdown or curfew periods.
- The issued permits must be clearly displayed to the user with options to modify or cancel the permit if needed.

5.1.2 Health Status Display:

- The system must display the user's health status based on data provided by health authorities.
- The user's health status must be automatically updated based on test results or received vaccination doses.

5.1.3 Vaccination Appointment Booking:

- The system must allow users to book vaccination appointments automatically based on the availability of health centers and the user's location.
- The system must send reminders to users about their scheduled vaccination doses.

5.1.4 Health Alert Notifications:

- The system must provide notifications to users when they are in high-risk areas or near confirmed infected cases.
- Health alerts should be generated based on location data and confirmed infected users.

5.1.5 Integration with Government Entities:

- The system must integrate with databases from government entities such as the Ministry of Health and Ministry of Interior to update users' health data and personal information.

5.1.6 Education and Transportation Services:

- The system must support access to educational services, such as the "Madrasti" platform, and provide booking and transportation services to educational and health institutions.

5.1.7 Personal Account Management:

- The system must allow users to modify their personal data and view the history of their activities and services accessed via the application.

5.2 Non-Functional Requirements

5.2.1 Security:

- The system must adhere to modern security standards such as data encryption and Two-Factor Authentication (2FA).
- Regular security audits must be conducted to ensure the system is protected against breaches.

5.2.2 Performance and Responsiveness:

- The system's response time must be fast, not exceeding 2 seconds per request.
- The system must support a high number of users without compromising performance.

5.2.3 Scalability:

- The system must be scalable to support an increasing number of users and additional services over time.

5.2.4 Compatibility:

- The system must work seamlessly across multiple platforms and operating systems, such as iOS and Android, and be compatible with various device types.

5.2.5 Reliability:

- The system must be reliable and capable of continuous operation with an uptime of no less than 99.9% annually.

5.2.6 Technical Support:

- The system must provide an effective technical support mechanism available 24/7 to resolve any user issues.

5.2.7 Usability:

- The system interface must be intuitive and easy to use, with clear guidelines to help users of different age groups and technical backgrounds.

5.2.8 Language Support:

- The system must be available in multiple languages to ensure ease of access for users from diverse linguistic backgrounds.

6 The Existing Programs

There are some similar programs to the Tawakkalna application, such as: Aman application, COVID-19 application, and Health Passport application and MySejahtera.

6.1 Comparison Table Between the Existing Programs

Applications	Advantages	Disadvantages
Aman	Provides public health services. - Provides information about coronavirus cases.	May be limited in some features compared to the "Tawakkalna" application.
Covid-19	Provides information and follow-up on Corona cases. - Allows booking vaccinations	May lack integration of government services
Health Passport	- Focuses on health certificates and vaccinations. - Easy to use and provides accurate information.	- May not offer a wide range of services like the "Tawakkalna" app.
MySejahtera (Malaysia)	- Provides public health services, including vaccination tracking. - Contains information about testing locations.	- May be targeted only to the Malaysian market.

Table 2: Comparison of Existing Programs

We couldn't provide the app links due to country differences, as some apps are only accessible in their specific countries and have certain restrictions.

6.2 Our Program:

The "Tawakkalna" app is considered better than apps like "Aman," "Covid-19," "MySejahtera," and "Health Passport" for several reasons. Firstly, it was specifically developed to meet the needs of the Saudi community during the COVID-19 pandemic and is integrated with government systems, making it easier to access a wide range of health and non-health services in one place. It offers multiple features such as security permits, health status verification, and instant notifications about potential exposure to COVID-19 cases. Additionally, "Tawakkalna" has a user-friendly interface suitable for all age groups and provides a broader range of services beyond health, including education, travel, and e-commerce, making it more comprehensive than other apps.

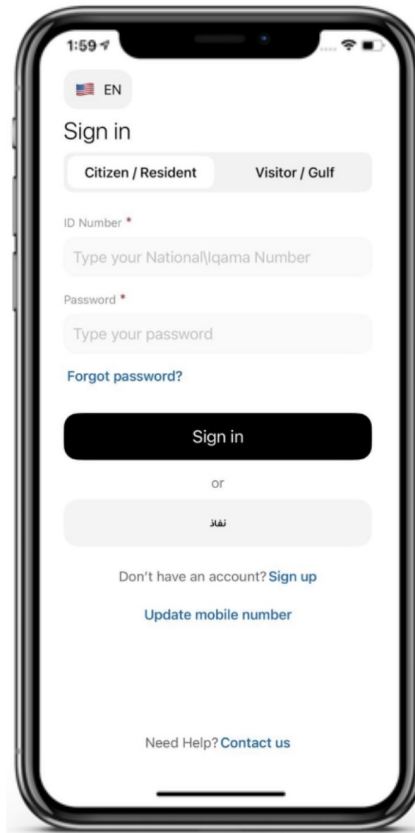
7 Interfaces of Tawakkalna application

This section describes the various interfaces of the Tawakkalna application, including login screens, dashboards, and other key user interface elements.

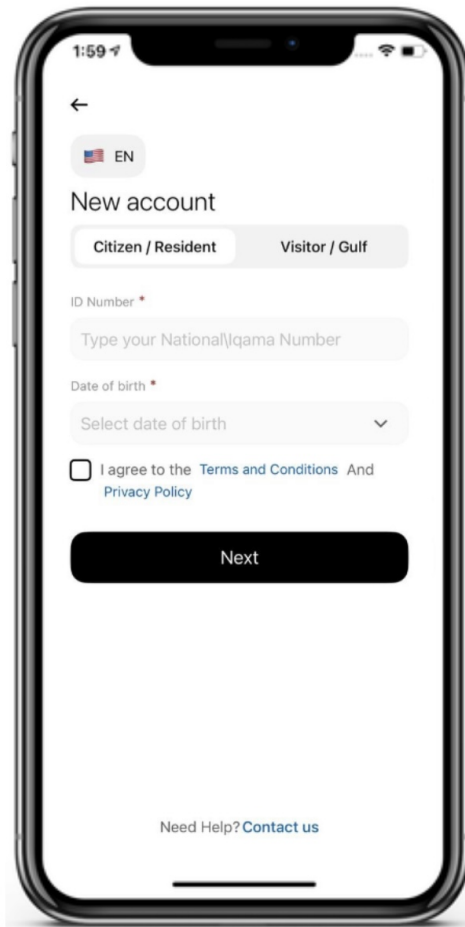


- figure.7.1 Startup Screen

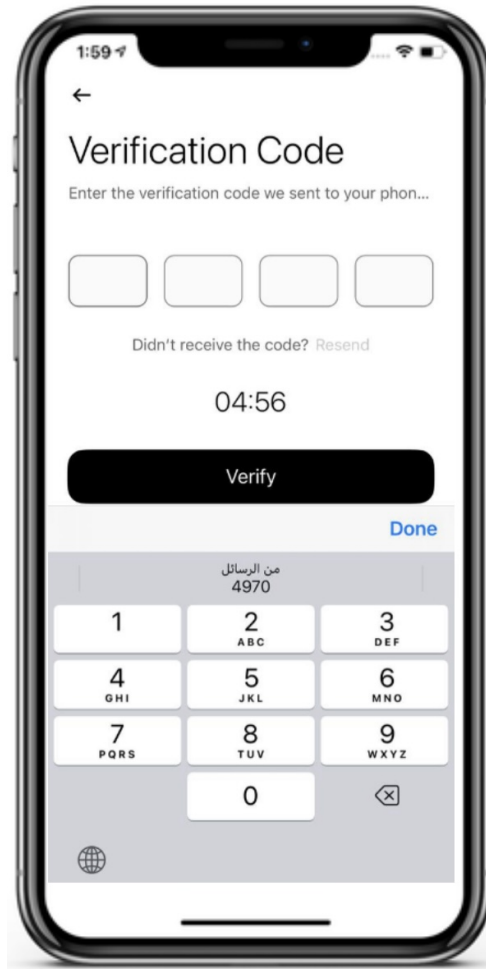
This is the startup screen of the "Tawakkalna" app. In the center, the app's logo appears along with its name. Below the logo, there's a short religious phrase in Arabic. At the bottom, you can see the logo of the Saudi Data and AI Authority (SDAIA). The background is simple and white



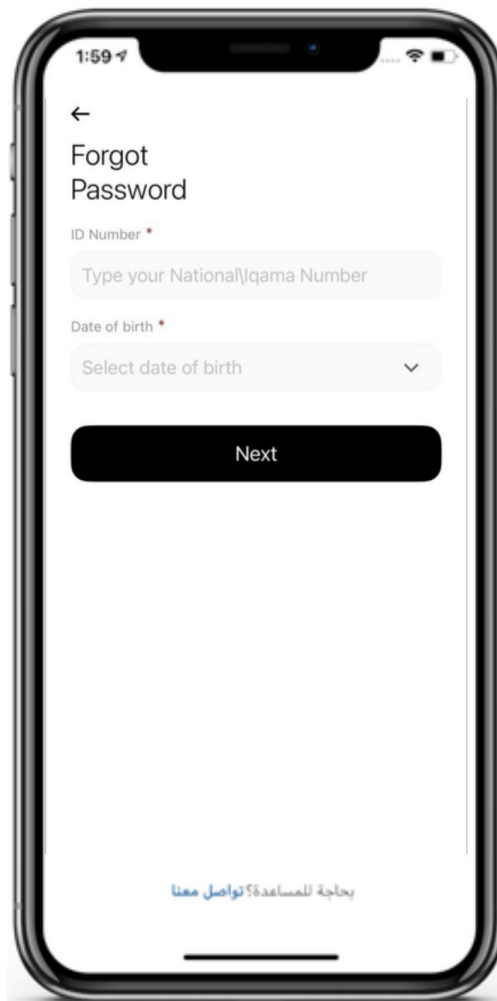
- figure.7.2 Sign in
Download the application and then select Visitor / Gulf and enter to create a new account.



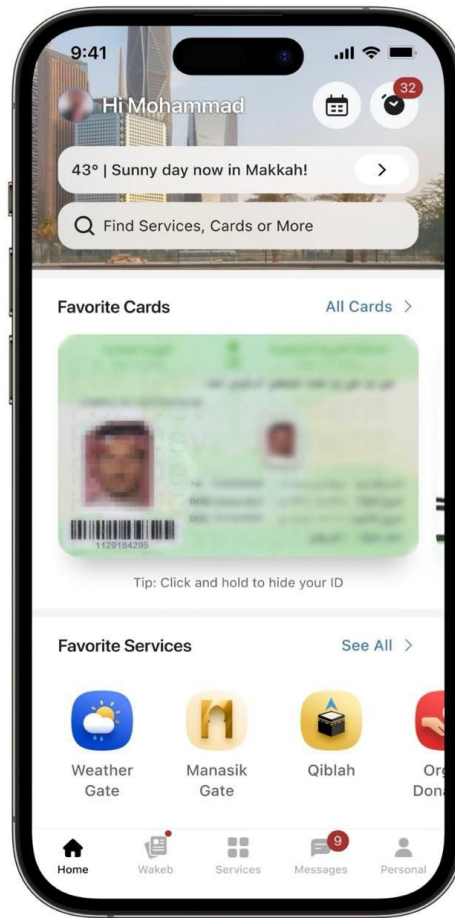
- figure.7.3 Creat Account
Enter the passport ID number Gulf, date of birth, nationality, mobile number and agreement to the terms Usage and Privacy Policy



- figure.7.4 Verification
You will receive a message with the verification code on Entered number

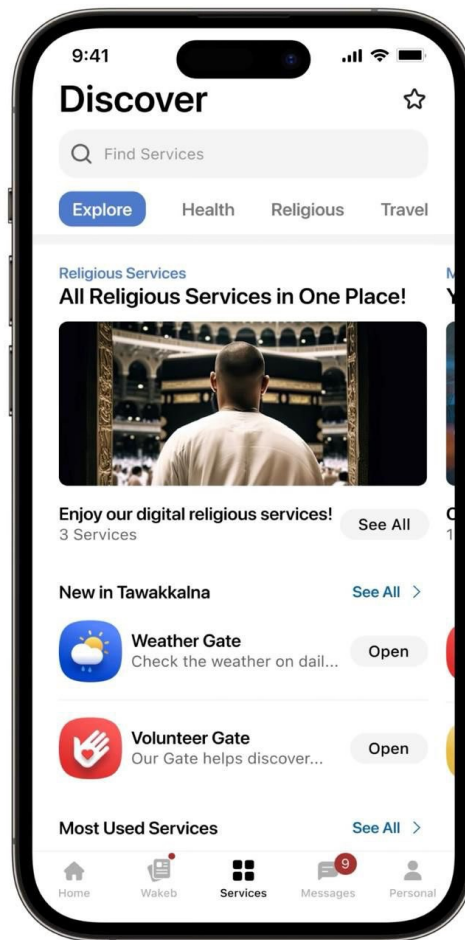


- figure.7.5 Forgot Password
Create Password And it must: Not less than 8 characters Contains at least one number. Contains at least one lowercase letter Contains at least one uppercase letter The input language is English.



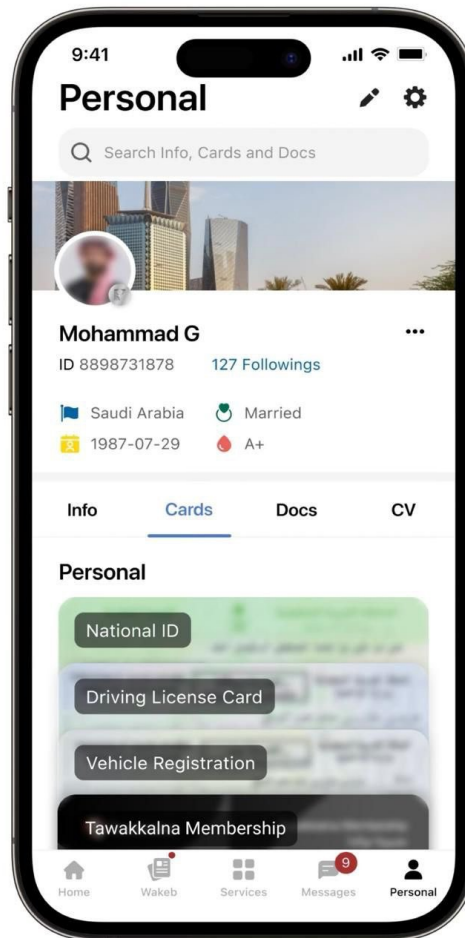
- figure.7.6 Home Page

This is the interface of an application on a smartphone. At the top, there is a welcome message with the user's name and temperature, with the indication that the weather in Mecca is sunny. Below that, there is a "Favorite Cards" section where different cards can be displayed, but personal information is not clear. At the bottom, there is a "Favorite Services" section that contains icons for different services such as weather services, rituals, and the Qibla.

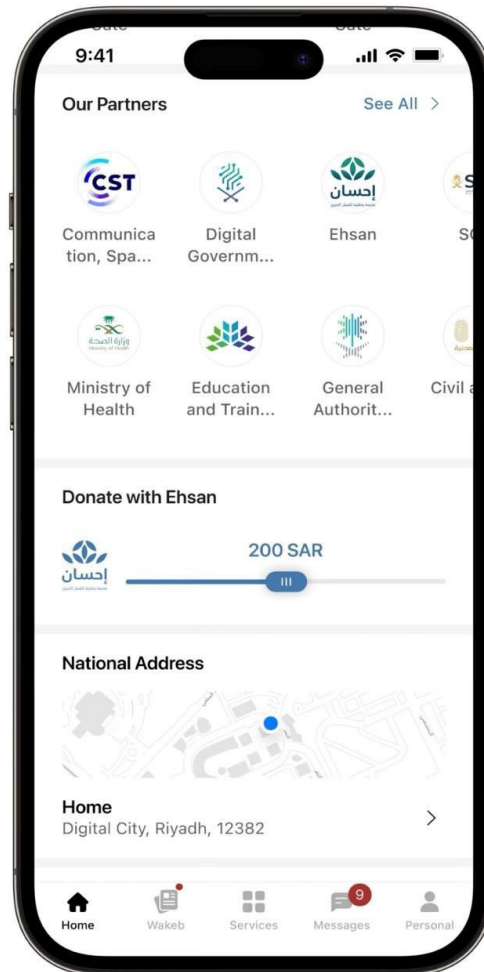


- figure.7.7 Discover Interface

This is the interface of exploring services, with a focus on religious services. It includes a heading “All religious services in one place!” with information about 3 available services and an option to “View all”. There is also a “New in Tawakkalna” section that includes services such as “Weather Gate” and “Volunteer Gate”. The interface has icons representing the services, with 9 alerts in the corner for new notifications. The design is simple and uncluttered for easy navigation.

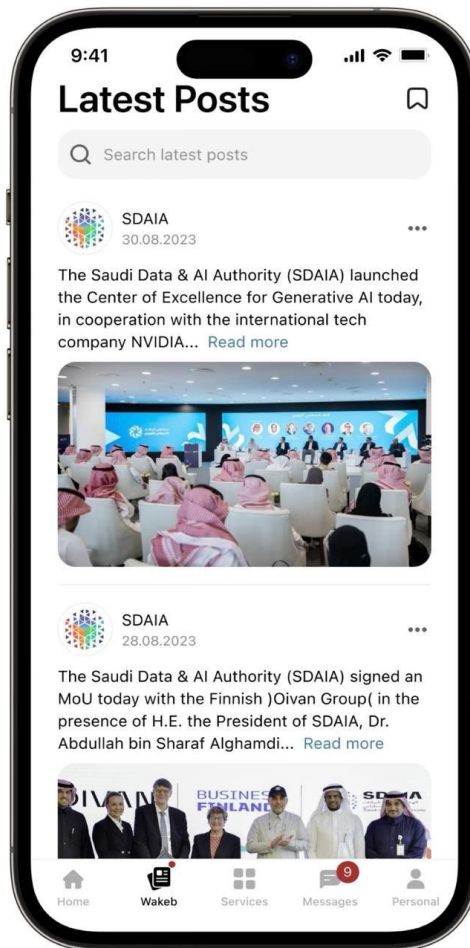


- figure.7.8 Personal Interface
This is the personal interface containing user information. It includes name, location (Saudi Arabia), marital status, personal identification number, and number of followers. The interface contains sections such as “Information,” “Cards,” “Documents,” and “CV,” displaying documents such as national ID, driver’s license, vehicle registration, and Tawakkalna membership. The design facilitates access to personal information and important documents



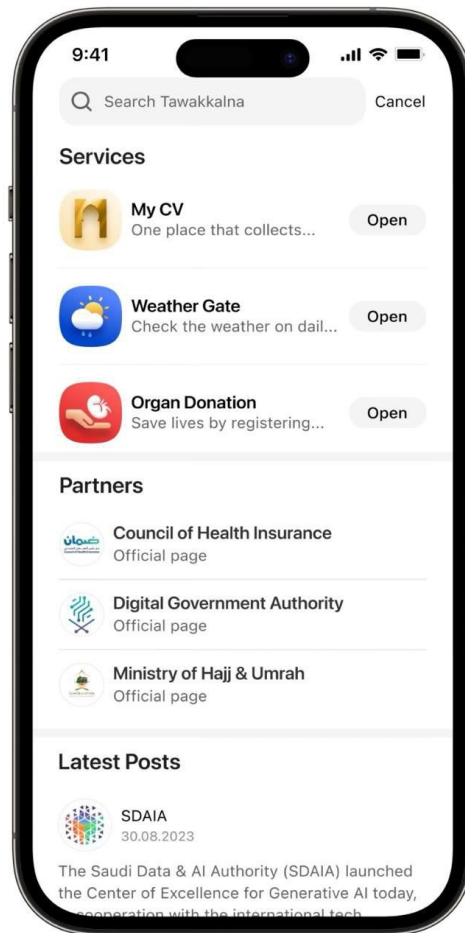
- figure.7.9 Partnerships

This is an interface displaying the “Our Partners” section. This section includes logos for more than one entity, such as the Ministry of Health, the Ministry of Education and Training, and the General Authority, indicating cooperation with multiple entities. There is also a “Donate with Ihsan” section where the user can donate 200 Saudi Riyals, with a bar showing the progress of the donation. The interface also includes information about the national address, with the location specified as.



- 7.10 Latest Posts

This is a showcase of the “Latest Publications” section related to the Saudi Data and Artificial Intelligence Authority (SDAIA). The section includes two articles: The first is about the launch of the Center of Excellence for Artificial Intelligence in cooperation with NVIDIA, reflecting the authority’s interest in innovation. The second talks about the signing of a memorandum of understanding with the Finnish Oivan Group in the presence of the Authority’s Chairman, highlighting the efforts of international cooperation in developing capabilities in this field.



- figure.7.11 Options

This interface displays the “Services”, “Partners” and “Latest Posts” sections. Services such as My CV which collects CVs, Weather Gate which provides weather forecasts and Organ Donation which allows registration for organ donation reflect the Authority’s interest in public health. It also includes a list of partners including the Health Insurance Council, the General Authority for Digital Economy and the Ministry of Hajj and Umrah providing important official information. The Latest Posts section includes details about the Saudi Data and Artificial Intelligence Authority with news about the launch of the Center of Excellence and the signing of a Memorandum of Understanding with Oivan Group.

8 Infrastructure Overview

8.1 System Architecture:

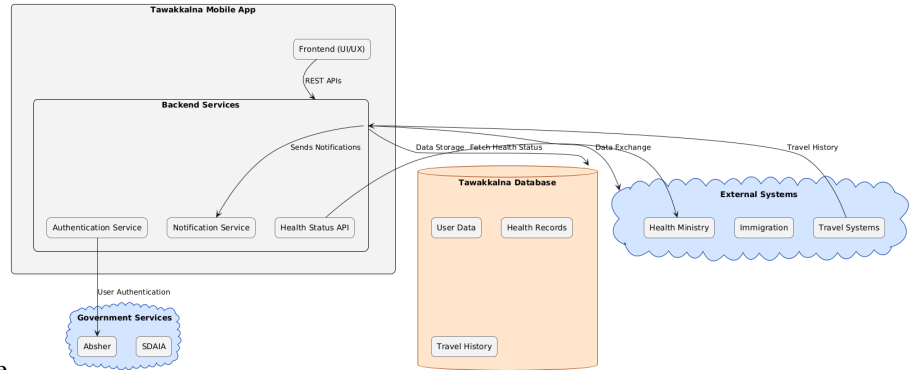


figure.8.1.1 system architecture

The diagram illustrates the architecture of the “Tawakkalna” app, showing the interaction between different components to deliver services. It consists of a mobile app that communicates with backend services via REST APIs. The backend services include the authentication service, notification service, and health status API. The database stores user data, health records, and travel history. The app integrates with external systems such as the Health Ministry and Immigration to collect health data and travel history. It also includes government services like “Absher” and “SDAIA” for user authentication. The diagram demonstrates the flow of data and the integration of processes to ensure comprehensive service delivery.

8.2 Servers and Infrastructure

- **Cloud Servers:** Utilization of cloud services like AWS or Azure for scalability and security.
- **Load Balancing:** Techniques to evenly distribute user requests across servers.

8.3 Databases

- **Database Type:** Usage of SQL (MySQL, PostgreSQL) or NoSQL (MongoDB) databases based on data characteristics.
- **Stored Data:** Personal information, health data, order logs, and health history.

userId	name	email	phonenum
1	Clark	clar34@gmail.com	575857899
2	Dave	da34@gmail.com	467879985
3	Ava	A34@gmail.com	478958627

- figure.8.3.1 database

This table displays user information for the “Tawakkalna” app and consists of four columns: `userId`, which is the unique identifier for each user; `name`, which represents the user’s name; `email`, which contains the user’s email address; and `phonenum`, which shows the user’s phone number. The table includes three users: Clark (`userId`: 1), whose email is `clar34@gmail.com` and phone number is 575857899; Dave (`userId`: 2), with the email `da34@gmail.com` and phone number 467879985; and Ava (`userId`: 3), whose email is `A34@gmail.com` and phone number is 478958627. Overall, the table provides basic details about the users.

8.4 Programming Languages

- **Backend:** Development using languages such as Python, Java, or Node.js.
- **Frontend:** JavaScript frameworks like React or Vue.js for user interface design.

8.5 Other Technologies

- **Security:** Implementation of HTTPS and data encryption for sensitive information protection.
- **API:** Use of RESTful APIs for communication between frontend and backend.

8.6 Testing and Maintenance

- **Testing:** Comprehensive testing to ensure error-free performance.
- **Updates:** Regular updates to enhance functionality and add new features.

9 References

- Reference 1: Saudi Data and Artificial Intelligence Authority. "Tawakkalna Application User Guide." SDAIA, 2023, <https://ta.sdaia.gov.sa/Tawakkalnaar.pdf>,
- Reference 2: Saudi Data and Artificial Intelligence Authority. "Saudi Data and Artificial Intelligence Authority." SDAIA, 2023, <https://ta.sdaia.gov.sa/>,
- Reference 3: Saudi Data and Artificial Intelligence Authority. "Tawakkalna." SDAIA, 2023, <https://ta.sdaia.gov.sa/index-en.html>,
- Reference 4: Alshahrani, Khaled. "The Impact of COVID-19 on E-Government Services in Saudi Arabia." *Journal of Digital Media Policy*, vol. 12, no. 1, 2021, pp. 45-56 https://journals.ekb.eg/article_284155_1a0621f0f62b1cd616345539d0335d.pdf,