**Report for the project:**

Introduction:

Project writing steps:

**1-Feasibility Study & Project Proposal: Fitness Tracker App:**

**int this step we talk about :**

**1-Intro: Overview & Purpose of the Report**

**2-Feasibility Study & Proposal: Fitness Tracker App for COVID-19 Control**

**3-Problems: Impact of ICT & COVID-19, Need for App**

**4-Background: Comprehensive Features of the App**

**5-Contact Tracing: Tracking Potential Exposure**

**6-Permit Application: Compliance with Guidelines & Regulations**

**7-Proposed Solution: "Tawakkalna" App with Two Phases**

**8-Phase 1: Streamlining COVID Testing**

**9-Phase 2: Virtual Access & Business Continuity**

**10-Conclusion: Importance of the App**

**2-project requirement:**

**int this step we talk about :**

a) Functional Requirements, who include :

1- Functional User Requirements:

2-Functional System Requirements:

b)non-Functional Requirements , who include:

1-non-Functional User Requirements:

2-non-Functional System Requirements

**3-project requirement:**

**int this step we talk about :**

1-Start Point

2-Open the application

3-Registration or Login

4-Visitor\GCC citizen

6-Citizen/Resident

7-Enter National/Iqama Number and password

8-Enter Passport\GCC ID number, Nationality, and password

9-Login valid

10-Display wrong

11-Main Screen

12-Fill in the required information

13-Passport\GCC ID number, Nationality, Date of Birth, Phone number

14-Fill-in the required info

15-Enter the verification code sent to you via SMS

16-Enter a password and confirm it

17-Verification code valid

18-End Poin

**4-Project Use Case Modelling**

1. **Specify the context of a system**
2. **Capture the requirements of a system**
3. **Validate a systems architecture**
4. **Drive implementation and generate test cases**
5. **Developed by analysts together with domain experts**
6. **Identify the Actors (role of users) of the system.**
7. **For each category of users, identify all roles played by the**
8. **users relevant to the system.**
9. **Identify what are the users required the system to be**
10. **performed to achieve these goals.**
11. ***Create use cases for every goal.***
12. **Structure the use cases.**
13. **Prioritize, review, estimate and validate the users**

**5. Sequence Diagrams**

**1. Identify the actors participating in the project and represent them in the top line of the diagram.**

**2. Identify the message that is exchanged between the actors and represent it in the appropriate vertical line.**

**3. Determine the time required for the message to be delivered between the actors.**

**4. Identify the preconditions that precede the event to be described in the sequence diagram.**

**5. Identify the steps that are taken when the event occurs.**

**6. Finally, document the sequence diagram.**

**6.User Interface Design**

**1- Define user requirements: You should understand the needs and requirements of the user to design a suitable user interface for their needs.**

**2- Collect information and research: You should gather information and research related to potential users and know their needs, expectations, goals, and expectations from the application.**

**3- Design the prototype: You can create a preliminary prototype of the user interface using different tools such as Sketch, Photoshop, or Adobe XD based on the research conducted in the previous step.**

**4- Get user feedback: After making the initial prototype of the user interface, you need to collect feedback and comments from users on your product. You can do this by using pilot experiments or surveys or live chat with users.**

**5- Modify and improve the design: Based on the feedback you receive from users, modify and improve your user interface design and repeat the process until you achieve user satisfaction.**

**6- Document the design: Document the completed design, meaning specify the steps followed in all details and clarify the blocks, factors, obstacles, and various conditions that can affect the operation of the interface.**

**1-first part:**

**Feasibility Study & Project Proposal: Fitness Tracker App:**

**Problems:**

**The rapid advancement of Information and Communication Technology (ICT) has greatly impacted various aspects of human life, including healthcare. With the global spread of the Covid-19 virus, countries have implemented various methods to combat the epidemic, such as quarantine and self-isolation. However, these measures have negative effects on the economy and require significant effort. Therefore, we propose the development of an application that assists the Saudi government in controlling the spread of the Corona virus. The aim is to track cases, save lives, and reduce the burden on healthcare facilities in order to prevent the spread of COVID-19.**

**Background:**

**Our developed mobile application serves as a comprehensive solution aimed at preventing the outbreak of the Coronavirus. It incorporates a diverse range of features to address the various challenges posed by the pandemic.**

**One of the key functionalities of the application is contact tracing, which enables users to track their potential exposure to the virus. By leveraging advanced technology, the app can identify and notify individuals who may have come into contact with someone diagnosed with COVID-19. This feature plays a crucial role in containing the spread of the virus by facilitating timely testing and quarantine measures.**

**Additionally, the application allows users to apply for permits, ensuring compliance with official guidelines and regulations. Users can request passes for essential activities such as going to work, shopping, or attending medical appointments. The app streamlines the permit application process, making it convenient and efficient for users while ensuring adherence to the prescribed protocols.**

**Proposed solution:**

**Our COVID-19 app,” Tawakkalna”, has been specifically developed to support government activities in responding to the pandemic. The app operates in two distinct phases, each serving a unique purpose in addressing the challenges posed by the virus.**

In the first phase, “Tawakkalna” focuses on facilitating COVID tests and streamlining the testing process. Users can conveniently submit their test applications through the app, providing necessary information and preferences such as the desired time and location for the examination. By leveraging the app's features, individuals can schedule their tests efficiently, ensuring timely and accessible testing services.

Moving on to the second phase, “Tawakkalna”shifts its focus towards enabling a gradual return to normalcy and ensuring business continuity. The app emphasizes virtual access to services, recognizing the need for remote interactions and reducing physical contact. Through “Tawakkalna”, users can access various services without the need for in-person visits, promoting convenience, efficiency, and adherence to social distancing measures.

**2-Second part:**

Project requirement:

1>>Functional requirement:

a) Functional User Requirements:

1-User Login: The application should provide a login functionality where users can enter their ID number and password to access their account. This ensures secure access to user-specific information and features.

2-Check-in with QR Code: Users should be able to check in to a gathering by scanning a QR code using their mobile device. This allows for a quick and contactless check-in process, reducing the need for manual registration.

3-Preview Gathering Entry Permit: Users should have the ability to preview their Gathering Entry Permit. This permit serves as a digital confirmation of their check-in and provides them with relevant information regarding the gathering, such as date, time, and location.

4-Sign-out from a Gathering: Users should be able to sign out from a gathering when they are leaving. This action updates their attendance status and allows for accurate tracking of attendees.

b) Functional System Requirements:

1-User Authentication: The system should authenticate users based on their ID number and password. This ensures that only authorized users can access the application and its features, maintaining the security and privacy of user data.

2-QR Code Recognition and Verification: The system should be capable of recognizing and verifying QR codes scanned by users. This process ensures the validity of the code and prevents unauthorized check-ins.

3-Generation and Display of Gathering Entry Permits: The system should be able to generate and display Gathering Entry Permits for users who have successfully checked in. These permits contain essential details about the gathering and serve as proof of attendance.

4-Attendance Record Updates: The system should update the attendance records when a user signs out from a gathering. This ensures accurate tracking of attendees and provides real-time information on the number of participants present at any given time.

2>>non-Functional requirement:

Non-functional requirements refer to the qualities or characteristics of a system that are not directly related to its specific functionality but are essential for its overall performance and

user experience. Here's an explanation of the non-functional user requirements and non-functional system requirements mentioned in the provided text:

a) non-Functional User Requirements:

1-Performance: The system should be able to handle a large number of users simultaneously without experiencing performance issues such as slowing down or crashing. This ensures that the application remains responsive and efficient even during peak usage periods.

2-Security: The system should have robust security measures in place to protect user data and prevent unauthorized access. This includes implementing access controls and encryption techniques to safeguard sensitive information.

3-Availability: The system should be available 24/7, allowing users to access it whenever they need it. It should have minimal downtime for maintenance or upgrades to ensure uninterrupted service availability.

4-Usability: The system should be designed to be user-friendly and easy to navigate. It should have clear and intuitive interfaces, enabling users to interact with the application effortlessly. This reduces the need for extensive training and ensures a positive user experience.

b) non-Functional System Requirements:

1-Performance: Users expect the system to respond promptly to their actions, minimizing any delays or lags. This ensures a smooth and efficient user experience, where users can perform tasks without experiencing significant waiting times.

2-Security: Users expect their personal data to be treated with utmost security and confidentiality. The system should employ appropriate access controls and encryption methods to safeguard user information from unauthorized access or breaches.

3-Availability: Users rely on the system to be accessible whenever they need it, without any unexpected downtime or disruptions. The system should be designed to have high availability, ensuring that users can access it at any time without encountering service interruptions.

4-Usability: Users expect the system to be user-friendly and intuitive, requiring minimal training or technical expertise. The interfaces should be clear, well-designed, and easy to navigate, enabling users to accomplish tasks efficiently and without confusion.

These non-functional requirements focus on aspects such as system performance, security, availability, and usability, which are crucial for ensuring a reliable and satisfactory user experience

**3-Third part:**

Activity diagram:

The Activity diagram represents the registration or login process in the application. Here's an explanation of the diagram:

1-Start Point: The process begins at the start point.

2-Open the application: Users open the application on their device.

3-Registration or Login: Users are presented with the option to either register or login to the application.

4-visitor\GCC citizen: Users can choose whether they are a visitor or a citizen of the Gulf Cooperation Council (GCC) countries.

5-Citizen/Resident: If the user selects the citizen option, they are directed to provide their National/Iqama number and password.

6-Enter National/Iqama Number and password: The user enters their National/Iqama number and password for authentication.

7-Enter Passport\GCC ID number, Nationality, and password: If the user selects the visitor or GCC citizen option, they are prompted to enter their Passport\GCC ID number, nationality, and password.

8-Login valid: The system validates the entered login credentials.

9-Display wrong: If the login credentials are invalid, an error message is displayed.

10-Main Screen: If the login is valid, the user is directed to the main screen of the application.

11-Fill in the required information: If the user is registering for the first time, they are prompted to fill in the required information.

12-Passport\GCC ID number, Nationality, Date of Birth, Phone number: The user enters their Passport\GCC ID number, nationality, date of birth, and phone number.

13-Fill-in the required info: If the user is a citizen or resident, they are prompted to enter their National/Iqama number and date of birth.

14-Enter the verification code sent to you via SMS: After providing the necessary information, the user receives a verification code via SMS and enters it into the application.

15-Enter a password and confirm it: The user sets a password for their account and confirms it.

16-Verification code valid: The system validates the entered verification code.

17-End Point: The process reaches the end point.

**This activity diagram illustrates the flow of actions and decisions involved in the registration or login process of the application.**