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MEDICO - iOS Based Medical Application

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Abstract: *The use of technology to enhance patient care and streamline operations has significantly changed the health care sector. People may now more easily maintain their health and get medical help on the road thanks to the growth of mobile devices. A complete iOS app that meets people's medical needs is required to address this rising demand. The software should be simple to use and have an intuitive UI. It ought to offer a unified platform that makes it simple for consumers to maintain their health and get access to medical care. The app ought to include access to user health details, appointment scheduling, and reminders to take medications. The app's appointment booking feature is essential because it enables users to make appointments with their health care providers. The app must offer a current list of open appointments along with the choice of provider and location. The procedure for making an appointment should be simple and take no more than a few clicks. Reminders for taking your medications are another crucial aspect of the app. People who are prescribed medication frequently fail to take their pills on time, which can have harmful implications for their health. A medication reminder function that sends push alerts to users at the appointed time to take their prescription should be included in the app. Users should be able to record whether they have taken their prescription or not using the reminder. Users must have access to their own health records in order to view their medical history and monitor their health improvement. Users' health records, including previous appointments,prescriptions, lab results, and other crucial data, should be safely stored on the app. Users should be able to share their medical records with health care professionals using the app. Individuals' experiences with health care would be greatly enhanced by this application, which would make it simpler for people to take charge of their health and get the treatment they require.*

Key Word: *Swift; iOS; Application; Appointment; Reminder; Medication.*

I.INTRODUCTION

Technology improvements have recently caused a huge upheaval in the healthcare sector. The development of mobile applications has completely changed how patients keep track of their health and interact with their medical professionals. Because they enable patients to obtain medical services remotely, mobile medical application development has grown in significance for the healthcare sector. This essay's goal is to explain the inspiration for and justification behind the creation of an iOS software for remote patient monitoring in the medical field. Since the COVID-19 epidemic, remote patient monitoring has become a crucial component of healthcare. Patients can check their health remotely through remote patient monitoring, which eliminates the need for in-person appointments.

Patients with mobility challenges or who live in distant places should pay particular attention to this. Moreover, remote patient monitoring can lower healthcare expenses while enhancing patient outcomes. Because it enables patients to remotely monitor their health data, contact with their healthcare professionals, and receive individualised care, the creation of a medically-related iOS application is crucial. With the help of the application, patients can conveniently keep tabs on their health information from the comfort of their own homes, and healthcare professionals can do the same for their patients. The goal of developing the medical-related iOS app was to overcome the difficulties that healthcare providers have when delivering individualised care to their patients remotely. The lack of communication between patients and healthcare professionals is one of the difficulties with remote patient monitoring. As a result, patients may not get the proper care they require, which could have a negative impact on their health. This problem is addressed through the creation of an iOS application that lets patients communicate with their healthcare practitioners from a distance.

The absence of reliable health data presents another difficulty for remote patient monitoring. People might not fully record their health information, which could lead to healthcare professionals making inaccurate diagnoses or giving them insufficient care. This problem is solved by the medically-related iOS application created in this study, which gives users the ability to precisely track their health data. Furthermore, because it can enhance patient outcomes and lower healthcare costs, the creation of the medically-related iOS application is crucial. Patients who routinely monitor their health data are more likely to spot any anomalies early, improving their chances of staying healthy. In order to save in person visits and hospital stays, healthcare providers can remotely check the health of their patients.

Patients and healthcare professionals may save a lot of money as a result of this. The creation of the medical related iOS app is also consistent with the movement towards patient-centered care. Patient centered care is giving patients individualized care based on their unique needs and preferences. Healthcare professionals can deliver individualized care to their patients remotely thanks to the medically-related iOS application created for this study. Finally,because it responds to the rising need for healthcare services, the creation of the medically-related iOS application is crucial. The demand for healthcare

services is anticipated to rise in the upcoming years, and the healthcare sector is currently experiencing a lack of healthcare personnel. The creation of the medically-related iOS app has increased patient access to healthcare services by allowing healthcare professionals to deliver services remotely. In conclusion, the creation of an iOS app for remote patient monitoring that is related to medicine is critical because it tackles the difficulties that healthcare providers experience while delivering individualised care to their patients from a distance. Patients may precisely monitor their health data and contact with their healthcare providers remotely thanks to the programme. The programme may possibly lower healthcare expenses while simultaneously enhancing patient outcomes. In keeping with the movement towards patient-centred care, the creation of the medically-related iOS application answers the rising demand for healthcare services.

II.PROBLEM DESCRIPTION

Many issues, such as growing expenses, restricted access to care, and a lack of healthcare providers, threaten the healthcare sector. Lack of good communication between patients and healthcare professionals, which results in subpar treatment and poor health outcomes, is one of the biggest problems. In order to enable patients, monitor their health data, contact with their healthcare professionals, and receive individualized care remotely, a medically-related iOS application can be created. The difficulty patients have accessing care, especially in isolated or rural regions, is one of the primary issues in healthcare. Due to physical restrictions, transportation difficulties, or financial limitations, patients might not be able to visit healthcare facilities. This problem can be addressed by allowing patients to monitor their health data from the comfort of their homes and decreasing the necessity for in-person visits through the use of medically related iOS applications.

People may not fully record their health information, which could result in inaccurate diagnoses and subpar care. The patient's entire medical history might also not be available to medical professionals, which could result in incomplete or incorrect diagnoses. This problem can be solved by allowing users of an iOS medical application to precisely track and communicate their health data with their healthcare professionals. Better diagnoses and treatment strategies may arise from this. Moreover, healthcare personnel frequently encounter difficulties when delivering individualised care to their patients, particularly in remote or rural areas. By allowing healthcare professionals to deliver individualised care remotely based on the patient's unique needs and preferences, an iOS medical application can assist solve this problem.

Better health results and increased patient satisfaction may result from this. The ineffective communication between patients and healthcare professionals is another issue in healthcare. Individuals who have trouble communicating their health problems to their medical professionals may miss diagnoses and receive insufficient care. Also, healthcare professionals could not have enough time to adequately connect with their patients, which would undermine their trust and happiness. By allowing patients to contact with their healthcare practitioners remotely, via encrypted texting or video conferencing, an iOS medical application can solve this problem. Better communication and better health outcomes may arise from this. Lastly, managing their workload and giving patients timely care are two major obstacles that healthcare providers encounter. Long wait times, inaccurate diagnoses, and poor care can result from a lack of healthcare professionals and the rising demand for healthcare services. By allowing healthcare professionals to monitor their patients remotely, an iOS medical app can assist solve this problem by minimising the need for in-person visits and hospitalisation.

III.ARCHITECTURE FOLLOWED CLEAN ARCHITECTURE

A design principle known as "Clean Architecture" encourages the division of duties and the usage of clear divisions between layers. Robert C. Martin, often known as "Uncle Bob," created this architecture, which has been embraced by several software developers all around the world. A modular, adaptable software application that can quickly change to meet changing requirements is the primary objective of clean architecture. This article will examine the use of Clean Architecture by software developers to create iOS medical applications that satisfy the particular requirements of the healthcare sector. The Elements of a Clean Structure Entities, Use Cases, Interface Adapters, and Frameworks & Drivers make up the four layers of Clean Architecture. Entities The business logic of the application is defined by the Entities layer.

This layer establishes the data model and the guidelines for data processing. Cases of Usage The use cases for the application are specified by the use cases layer. This layer establishes the behaviour of the application and its communication with the Entities layer. Access Point Adapters The application's adjustment to the outside environment is the responsibility of the Interface Adapters layer. This layer establishes the communication channels between the application and the user interface, data storage, and other external systems.

Drivers & Frameworks Implementing external systems, like databases, online services, and third-party libraries, with which the application interfaces is the responsibility of the Frameworks & Drivers layer. The interfaces the programme utilises to communicate with the user interface, data storage, and other external systems are defined as part of this process. 1. Specify the Frameworks and Drivers The frameworks and drivers for the external systems like databases, online services, and third-party libraries that the application interacts with must be defined as the final phase.

IV.BENEFITS OF FOLLOWING CLEAN ARCHITECTURE

Distinguishing Concerns Clean architecture encourages the division of duties among various programme components. Developers may better control the complexity of the programme by isolating the business logic from the user interface and data storage. Due to the fact that changes made to one component will not affect the others, this separation also makes it simpler to maintain and adapt the application. 1.Flexibility Clean Architecture offers a modular and adaptable design that is simple to change to meet changing needs. This implies that feature additions and changes can be made by developers without changing the entire application. It is also simpler to reuse code and components across many projects because to this flexibility.

Unit testing, which enables developers to test specific application components in isolation, is encouraged by clean

architecture. This facilitates the early detection and correction of defects in the development process. Moreover, testing can be automated to save time and lower the possibility of human error.

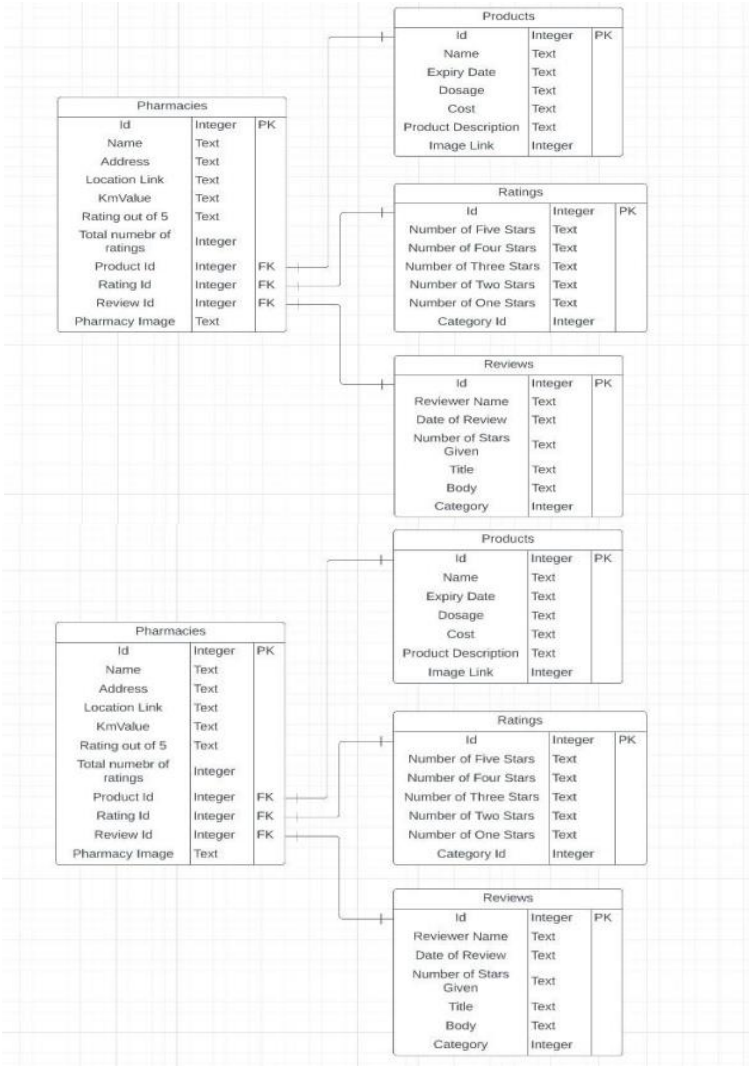
Scalability Large and sophisticated applications may be handled because to the scalable design that Clean Architecture offers. Developers can scale each module separately without affecting the other modules by breaking the programme up into independent modules. It is also simpler to distribute the programme across several platforms or devices because to its scalability.

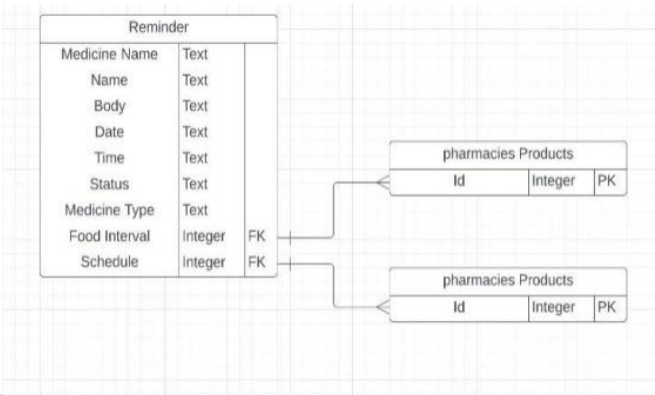
Maintainability An easy to comprehend and change design is offered by clean architecture. Developers may quickly find and edit the necessary code by breaking the programme up into discrete modules with clear responsibilities. This lowers the possibility of adding new problems or faults while also making programme maintenance simpler over time.

Compliance Strict regulatory compliance standards apply to medical applications. The clear separation of concerns and well-defined data model offered by clean architecture can help developers make sure the application satisfies these criteria.

Security Security is of utmost importance in medical apps since they handle sensitive patient data. Secure coding techniques are encouraged by clean architecture, which also makes it simpler to find and patch security flaws.

V.DATABASE SCHEMA





VI.RESULT AND DISCUSSION

Using the Clean Architecture and SOLID principles, a medical-related iOS application was developed that is reliable and versatile and is simple to maintain and modify. Healthcare professionals and patients can use the app to track their health status and manage medical issues. The application offers a user-friendly interface that makes it simple for users to explore and access all of the application's capabilities. To make sure that it satisfies the requirements of medical professionals and patients, the user interface is created utilizing user-centered design concepts. Also, a secure data storage system that conforms with legal standards is provided by the programmed. The Clean Architecture and SOLID development principles produced a sturdy and adaptable iOS application that is simple to maintain and modify when used to create a medical-related app. The software was created to aid in the tracking and management of medical issues for both patients and healthcare providers. Users may simply navigate and utilise the application's various functions thanks to the application's user-friendly design. In order to make sure that the user interface satisfies the requirements of patients and healthcare professionals, it is created utilising user-centred design concepts. Also, the application offers a secure data storage mechanism that conforms with legal criteria. SOLID principles are used in the data model's design to make sure that the data is structured and arranged in a way that makes it simple to manage and edit. It is simpler to modify and maintain because the data storage system is independent of the user interface thanks to the adoption of Clean Architecture. The app has functions including vital sign tracking, prescription reminders, and appointment scheduling. Users can enter their vital indicators, such as blood pressure, temperature, and heart rate, and these readings can be tracked over time to detect changes in their health status. Medication adherence and health outcomes can both be enhanced by using the medication reminder tool, which aids users in remembering to take their pills on schedule. Users can keep track of their healthcare needs by setting up appointments with their healthcare providers using the appointment scheduling tool. A dashboard is another feature of the application that gives users an overview of their progress and health status. Users can stay informed and encouraged to manage their health by using the dashboard, which shows data including vital signs, medication adherence, and future appointments.

VII.CONCLUSION

In conclusion, a strong and adaptable iOS application that satisfies the needs of medical professionals and patients was produced through the creation of a medically-related iOS app employing Clean Architecture and SOLID principles. A safe and user-friendly interface is offered by the application for managing medical issues and monitoring health status. The app's features, such as vital sign monitoring, medication reminders, and appointment scheduling, can help patients take their medications more consistently and get better health results. Overall, the application of SOLID and Clean Architecture principles results in a scalable and maintainable design that is simple to adjust to changing requirements and complies with legal requirements.

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