Medi Care: An Android-based Health Mobile Application

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Abstract—**This paper centers on an application for mobile devices that serves as an online consultant to every person on the planet. Specifically, this mobile application gives us the freedom to consult ourselves while being seated at home. Through this application, an individual may enter their symptoms to receive a list of potential diseases as well as some basic details about these diseases. We have also given a link to more in-depth information about the illness. Additionally, this software offers a search option for local hospitals that are located nearby, as well as a calling feature during critical circumstances that allows the person to use it to contact any individual just by entering their phone number in case of an emergency. All these features play an important role to support and promote the application as an active and smart diagnosis application.**

Index Terms—**Android application, Diagnosis, Diseases, Java, Online Consultation**

I.INTRODUCTION

The title of the paper is" MEDI CARE." It serves as a healthcare app, as suggested by the name. You are a single step closer to getting the medical treatment you desire and require, which many online diagnoses do not offer. MEDI CARE is a smartphone app that aids in identifying illnesses based on symptoms entered into the application. It also assists in locating nearby hospitals, calls for assistance in a moment's notice using the SOS call feature, and offers a direct line of communication alongside the developer for any assistance or suggestions. The user-mentioned symptoms can be used to quickly and accurately identify the condition.

This application serves a very useful purpose. Since it takes a lot of time and effort to locate hospitals, visit medical professionals, and check our health condition, we understand that there isn't time to devote to this in today's hectic daily lives. So it's hazardous to handle the matter till we have a doctor's visit. The software enters the picture at that point. Individuals may enter their symptoms to receive a list of ailments they might have in common. The Gmaps program can also help them locate local hospitals. It's an absolute misery not to be able to call for assistance when you need it, consequently, MEDI CARE can assist you in doing so in any emergency.

This initiative can help patients stop their medical conditions from becoming worse. In an emergency, this could preserve the life of someone who is unable to reach the doctor. They can, very least, take steps to prevent the sickness. People will have enough opportunities to seek medical advice, rehabilitate themselves, and enjoy healthy lives. This application's major goal is to assist folks who are ill to feel better while protecting their precious time, money, and resources.

II.EASE OF USE

Nowadays health applications only have the capacity to predict a disease when users enter symptoms, meaning that users must wait a long time before they know about the illness they are possessing. Here, the users are able to communicate with developers for feedback or suggestions just by calling customer service and speaking with the appropriate team. Our proposal focuses on the system's present capabilities and also includes a call module that enables users to reach any individual they need to in an emergency. In contrast to the current approach, consumers can also call the creator directly from the contact us section to provide comments or recommendations.

Existing System

The available health applications nowadays have the func- tionality to only predict the disease when symptoms are given as input to them and the customer has to wait for long period of time in order to contact the developer for feedback /suggestion

purposes by connecting to customer care and then talking to the related team. We should wait for a long period of time for a doctor's appointment causing a threat to the patient's life.

- There is usually lots of hustle and bustle in finding hospitals near your location when required during emergency situations.
- We should comply with a longer waiting period in order to get the doctor's report and the parameters mentionedin them.

A. Proposed System

Our project focuses on the existing system functionalities and also has implemented the calling module for its users, where the user can contact any person required in case of emergency. The customer can also directly call the developer from the contact us page, for feedback/suggestions purpose instead of waiting for a long duration, unlike the existing systems.

- Self –diagnosis of your disease is possible through our easy, efficient-to- use mobile application.
- We can know about the details of the disease that we maypossess with a click and also on fingertips.
- It provides the feature of finding nearby hospitals in case of any critical moments and can be effectively used during emergency situations.
- Emergency (SOS) calling is available, through which the user can contact any person during an emergency, by justentering the number and calling them
- Altogether, it provides us a functionality of both Nearby hospitals and Emergency calling under one roof
- If the user has to contact the developer for any feedback/ suggestions, they don't have to wait for a longer duration by first connecting to customer care, instead the user can directly contact the developer as the verified personal details of the developers are mentioned on the contactus page.

III.LITERATURE SURVEY

A cell phone software called MEDI CARE utilizes symptoms that users provide to help detect ailments. Furthermore, it helps users find local hospitals, instantly summons help via the SOS call function, and provides a direct channel of communication with the developer for any questions or recommendations. The illness may be swiftlyand precisely identified using the symptoms provided by the user. To accomplish this, we assembled a small numberof works from specialists in the field and reviewed a large number of papers. Our evaluation of the literature focuseson the usage of mobile applications to diagnose users forpotential illnesses they could be suffering from.

Authors namely, Annemarie Jutel and Deborah Lupton conducted a study on" Digitizing diagnosis: a review of mobile applications in the diagnostic process". This study aims to evaluate the influence of accessible diagnosis apps on the diagnostic process as well as to explain and catalog these ap- plications. Using the information provided in the descriptions of 131 medical diagnosis applications for smartphones that were available in both the Google Play and Apple App stores, researchers conducted an analysis of the content of the app descriptions and creators' websites. Each app was examined for its technique, content, and claims of medical authority. The following four main app categories were determined:

- applications for diagnosing;
- apps for coding diagnoses;
- releasing in the form of books, journals, or other apps;and
- applications for medical education.

According to their findings, these applications provide practitioners with a quick diagnostic tool while also giving ordinary consumers the ability to access medical information that was previously largely unavailable.Many failed to clarify the supporting evidence or any other credentials for the design and use of their products. These applications changed howa diagnosis is carried out by reframing illness ideas and lay-professional relationships.

Another research review on "Development of Mobile PhoneMedical Application Software for Clinical Diagnosis" done by K. Prahlad Rao, Mohammed Ahmed Hanash and Gaa-far Ahmed AL-Aidaros published in International Journal of Innovative Science and Modern Engineering (IJISME),displays

the use of widespread technology in the medicalfield. Technology for communication has advanced quickly, and this has influenced medicine as well. The development of smartphones in particular has rendered medical provisioning via mobile devices a reality. Since mobile devices have becomemore user-friendly, computationally powerful, and accessible, innovations in software applications, may have positive effects on public health. The general population is less at risk when using cutting-edge mobile applications to complement face-to- face engagement in healthcare consultation. In order to simplify communication between a patient and a doctor when the patient seeks guidance, diagnosis, and therapy from the doctorfrom a distance, they have created and assessed a mobile app for smartphones on the Android platform. The medical data that a doctor needs to analyze and react to information is integrated into the Graphic User Interface (GUI) display of smartphones.

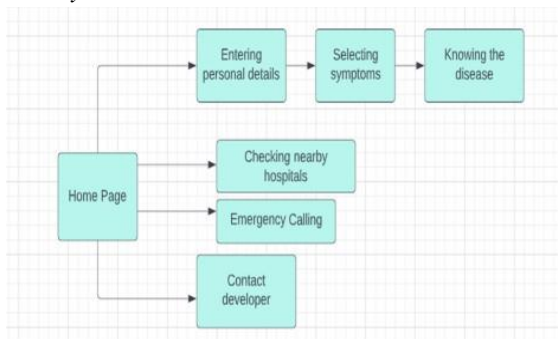IV.ARCHITECTURE AND METHODOLOGY

A. System Architecture

Fig. 1. The System Architecture

The way a system is utilized, how it communicates with other systems, and the way it interacts with the outside world areall reflected in its layout. Fig. 1. displayed above shows the architectural foundation of the system. It establishes how one component of the system communicates with the others and how data is transferred between them. A system's architecture reveals how it is conceptualized in terms of its framework, operations, and connections. The term "system" in architecture usually refers to the software's architecture rather than the actual building blocks of the machines or structures. A system architecture reflects how it is utilized, and as a result, it evolves through time. The component design of the system is depicted conceptually in the system

architecture diagram. To help understand component-component interactions and sys- tem functionality, it offers a brief overview of the component architecture of the system. It offers a mechanism to track the progress of the system and a consistent language for discussingsystem design.

B. Modules

We introduced the below-mentioned modules in our projectas shown in Fig. 2., namely:
1. Disease checker page
2. Finding nearby hospitals
3. Emergency SOS calling option
4. Contact us page

1) Disease checker page: A page will be displayed which asks the user to enter personal details. After entering the personal details like Name, Age, and Gender. The user can select the option 'Know your Disease' where the user can select the symptoms. According to the symptoms selectedby the user, the disease checker mentions the disease. The combination of symptoms results in the type of disease that might have caused the application to display the diseases.

The Disease checker also shows detailed information about the disease. The information summarizes the cause of thedisease. If more detailed information is required, a link is also provided which is directed to the online data available which provides more detailed information regarding the illness. You can only check the data for one disease at a time, as it is directed to the synopsis page of that particular disease.
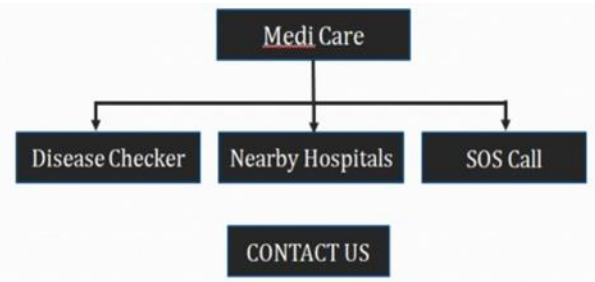

Fig. 2. Various modules present in the mobile application

2) Finding Nearby Hospitals: The user can search for nearby hospitals as well as comprehensive informationabout hospitals nearby according to the device's location. Depending on your current location, Google Maps will be opened instantaneously. The distance and proper directions for driving to the hospital will be

demonstrated.

3) Emergency SOS calling option: By clicking the Emergency Calling module, the individual gets redirected to the SOS calling page, which is where they can providethe phone number of anyone they know to contact in an emergency.

4) Contact us page: The user can get acquainted with the developer by employing the "Contact Us" function. The user gets the option to request direct assistance or suggestions.There is no way to get in touch with the developer directlyin any other mobile application. Through client service, it is accomplished. 'MEDI CARE' nevertheless offers users the chance to get in touch with the creator directly. Additionally provided are the developer's address, email address, and phonenumber.

V.IMPLEMENTATION

A. Android Studio

The recognized integrated development environment (IDE) used to develop apps for Android is called Android Studio. It incorporates code editing and tooling for developers from IntelliJ IDEA, a Java-integrated development platform for applications. Android Studio employs a Gradle-based build structure, emulator, coding templates, and GitHub integration for assisting application development for the Android OS. In Android Studio, every project consists of one or more paradigms that include the source code and material files. These modalities comprise Google App Engine components, Library modules, and modules for Android apps. To update running applications with new code and resources, Android Studio employs a feature named Instant Push. A code editor provides code completion, refraction, and analysis along with helping the developer compose the code. The application file, or APK, is subsequently generated from applications created in Android Studio and submitted for inclusion in the Google Play Store.

B. Adobe XD

For the design and prototyping of building user interfaces (UI) and user experiences (UX), Adobe XD is a powerful vector-based tool. Considering Adobe XD has so many functions and uses, it is a necessary tool for any user experience designer.
It has a wide range of functions, an intuitive interface, and optimized performance. The interactive preview, which allows designers to observe changes in real time, is one important aspect. Another is the repetition grid, which streamlines the creation of intricate layouts with numerous pieces. Designing prototypes that are interactive is made much easier by Adobe XD's integration of voice commands and gestures. It is possi- ble to utilize Adobe XD for a variety of design duties because it is a flexible tool which can perform :

- Creating wireframes, blueprints, and prototypes are a few common uses. A great tool for quickly producing wireframes and prototypes is Adobe XD. Both basic and complex designs may be easily created, and you may incorporate interactive components that will give your prototypes a more lifelike appearance. The prototype creation tool is great for making immediate modifications to your UI/UX project as well as mockups for mobile applications and webpages.

- An excellent tool for creating user interfaces is Adobe XD. It depicts a large selection of pre-built UI elements that you may utilize in your designs and is also vector- based, allowing you to construct scalable designs.

- Generate graphics and illustrations. With its huge creative library of vector-based shapes, colors, and fonts, Adobe XD additionally serves as a fantastic tool for producing drawings and graphic design components. When creating mobile apps, designing websites, and other tasks, these interactive mockups adapt in real-time to make your workflow quick and responsive.

- Simplify the UX/UI design procedure. Create reiterated content, replicate and reuse common fragments, and streamline the process with Adobe XD to save time.

C. JDK

A cross-platform programming environment called the Java Development Kit (JDK) delivers an assortment of tools and libraries required for constructing Java-based software applica-tions and applets. Along with the JVM (Java Virtual Machine) and the JRE (Java Runtime Environment), it is a fundamental Java package. Beginners frequently team up JRE with JDK, but if the only thing you want to do is run Java programs on your computer, Java Runtime Environment makes it simple to do so. However, you might additionally want certain

other essential tools, referred to as JDK, if you intend to create a Java-based software program.

Contents of JDK:

- A personal Java Virtual Machine (JVM) and a coupleof extra resources required for the creation of a Javaapplication are included with the JDK.
- JDK includes the Java Runtime Environment (JRE), the Java interpreter/loader, the Java compiler, the Java archiver, and many more components.
- Being it different from the standard JRE and containing extra information, the Java Runtime Environment in JDK is frequently referred to as Private Runtime.
- All of the class libraries that exist in the manufacturing environment are included in the JDK's Private Runtime, in addition to extra libraries which are helpful to devel- opers, such as the internationalization libraries and IDL libraries.

VI.RESULTS AND OUTPUT

The following screenshots are the results of the online con- sultancy mobile application developed by us. Fig. 3. displays the menu of the Medi Care mobileof Application.

Fig. 3. The menu of the mobile application

Fig. 4. shows the illnesses discovered based on the user- provided symptoms. The illness is outlined along with itsroot causes, potential treatments, and recommendations for prevention. The disease's

overview may be found by clicking the link that leads to additional in-depth information aboutthe condition that is shown.
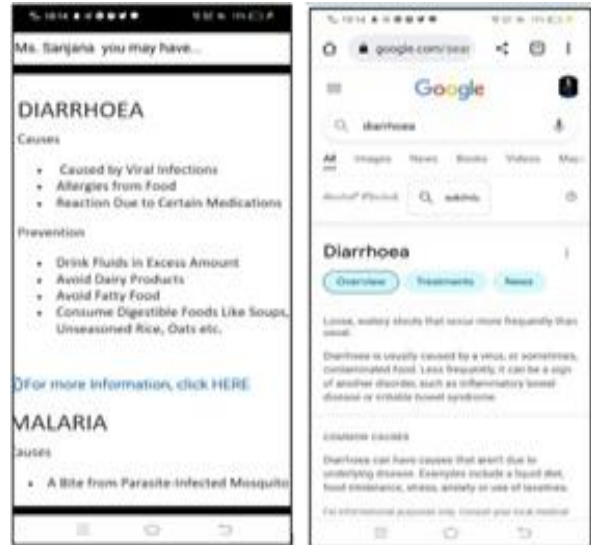

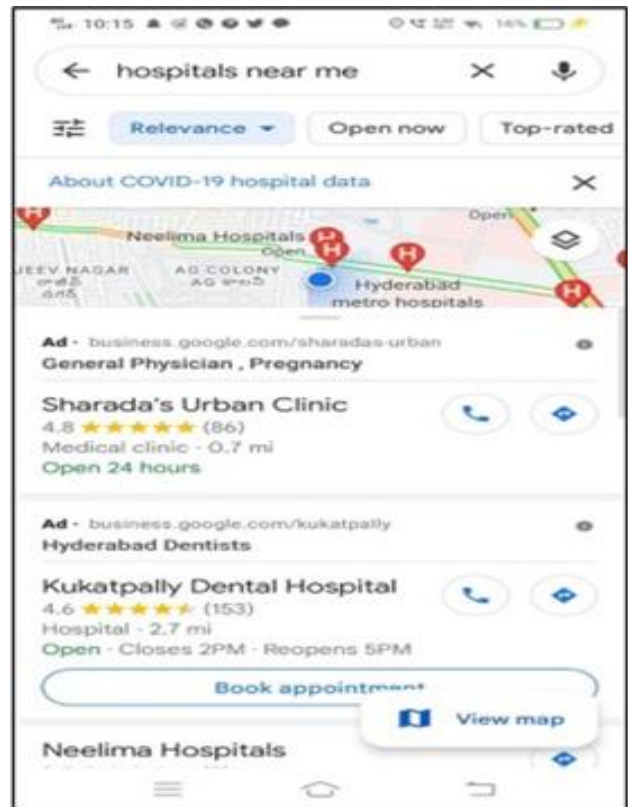Fig. 4. The diseases and the link to more detailedinformation on the web

Fig. 5. Nearby Hospitals

Fig. 5. displays the hospitals which are nearby to where you are currently, as determined by your application by examiningthe current geographical position of the device you are using. There is a list

of hospitals with their names and a description of how to get to them is also displayed. GMaps is used to identify, analyse, and show local hospitals.

Fig. 6. SOS calling option

Fig. 6. demonstrates the SOS (or emergency) calling option, which may be employed by the person in the event of any emergency. The user only has to input the cellphone numberin the field provided; after the call button clicked, the calling software on your phone will then send the call to the number'sowner.

Fig.7. provides the contact details of the developer in order thatusers may get in touch with them if they have any comments or suggestions. The user may

email the developer immediately for remarks or recommendations or they can contact directly utilizing the phone number option without spending time in line for customer service. The Contact Us section includes information concerning the developer's location as well.

Fig. 7. Developer's details

VI.CONCLUSION

This mobile application is user-friendly and simple to use, and it can be used by anyone with the support of a phone running Android. It qualifies as a user-friendly program since it is made in a way that makes it simple for the user tounderstand how it works and gives them instructions that are unambiguous. The planning of the project has had a major impact on our learning of numerous Android Studio's featuresthat were previously unknown to us, such as Code Refactoring,running each component independently, setting the theme,etc. Furthermore, creating the user interfaces in Adobe XDhas greatly increased our productivity when integrating them with Android Studio. We received a concise introduction to each of these diseases with regard to their causes, prevention, forms of treatments, and ailments during

the collection of data, i.e., the diseases and the symptoms that accompany them. In addition to the previously discussed disease identification from reported symptoms, the project also contains an assortment of additional features which are appealing to the individuals. Finally, the goal and motivation behind the development of this project is to create an online consultation where individuals may consult and examine themselves as well as a diagnosis application that offers functionality to assess your health—has been achieved.

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