

ACKNOWLEDGEMENT

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ABSTRACT

Many times, user wants to know more about specific disease or medicines or take a note for future use, but due to laziness or lots of sites showing different or inaccurate results, user stops exploring. Knowledge about basic medicines, its usage, diseases and their overview, symptoms, causes is like a basic knowledge every individual should have for personal safety. Our project, therefore, has the main aim to provide information of over 12000 diseases with their Overview, Symptoms and Causes and over 5000 medical drugs and the conditions in which it can be used. So, If at any point, user comes across any new disease or medicine, he/she can quickly search and can get detailed information through application without having to go through lots of websites having different results.

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Chapter 1 Introduction

Background

Medic is chosen for mini project because as we all had faced the Covid19 situation, and we all agree that it is how much important to have basic knowledge of diseases , their symptoms , causes and the what medicines should be used for what condition.

We had included all in a very simple and brief manner so that the user can easily understand even though he/she might not belong to medical background.

Any common person to medical practitioner can use this app for their daily purpose and learn in a fun and effective way through quizzes and facts.

Problem Definition

The definition of our project is to provide detailed information on diseases like the symptoms, causes and overview and what medicines are used in what conditions and the current news to keep the user up to date.

Motivation

As the quote goes, “Necessity is the mother of invention”.

The factors which motivated us to make this project are-

- The main motivation behind the creation of this app is the Covid19 situation which turned the whole world upside down.
- It made us realized the importance of knowledge about basic diseases as well as medicines is how much useful during that kind of situation for personal as well as other people's safety.

Objective

Main Objective of this Application is to increase the awareness and basic knowledge of diseases and medicines to normal people. If at any point, user comes across any new disease or medicine, he/she can quickly search.

User can get detailed information through application without having to go through lots of websites having different results. For medicines, user can search the contents which are used for making medicines and get the condition in which it can be used.

Scope

Any disease can be searched using the disease name or the symptoms of the disease and user can get the matching scenarios of the diseases which includes the overview, symptoms and its causes.

Similarly, any medicine contents or the medical condition can be searched and the best matching scenarios are returned to the user.

From normal peoples to healthcare, pharmaceuticals, physicians, hospital nurses, medical students, nursing professionals, pharmacy, physician assistants and for students who work in clinical practice and dispensary can use this app for their daily use.

Applications

With detailed information on 12000s diseases and probable prescription drug information, this app is a free medical encyclopedia guide. Also there are additional features like Note Functionality, BMI calculator, Word of the day, Latest news, Quiz on medical fields and facts.

Any user can use it for following purposes:

- User can search about any diseases and get a detailed information on overview, symptoms and causes.
- User can search about the components used in a particular medicine to get to know about the conditions in which it is used.
- User can Create/Modify/ Delete a Note according to his convenience to store any data for future reference.
- User can calculate the Body Mass Index (BMI) of himself/herself and of his/her friends and family members to maintain their body weight and keep control on their health.
- User can attempt Quiz on different topics based on medical fields to test their knowledge and get new information.
- User can also read medical related facts and tips to improve their health.
- User can get top news of the current moment on medical related to stay up to date.
- User can get daily dose of new word to learn new English words.

Chapter 2 System Planning

Project Development Approach

There are many approaches to create an application. But, we had selected Flutter because.

- Same UI and Logic in All Platforms.
- Reduced Code Development Time.
- Similar to Native App Performance.
- Custom, Animated UI of Any Complexity Available.
- Simple Platform-Specific Logic Implementation. • Potential Ability to Go Beyond Mobile.

System Modules

The modules which are used in our project are -

Authentication

- Authentication module is used in Register page, Login Page, Reset Password Page and Profile Page. Only authenticated user can register/login/modify their details inside the app. And, only after successful verification a user is logged into the application.

Search

- Search module is used in Disease page and Medicine page. It is situated on the top right corner in the app bar. It gets the results including the matching keyword and get detailed information on overview, symptoms in the Disease page and gets the medicine and the condition it can be used in medicine page and if no matching cases are found then “No Results Found” is displayed.

Dashboard

- Dashboard module includes the animations and gridview.builder to create a list of buttons on dashboard which is used to create Home Page.

Notes

- Notes module include a Alert Dialog prompting the user to enter the details of note which is Note title and Note description. This module is used in Add Note as well as in view Note with minimal changes in submit action.

Functional Requirements

ID	Title & Description
FR1	<p>Title: Login</p> <p>Description: The system provides security features through username-password matching where only authorized user can access the application.</p> <p>Input: - Username, Password</p> <p>Output:- Logged in to the app</p>
FR2	<p>Title: User Profile Registration</p> <p>Description: This allows healthy public to register as User.</p> <p>Input: - Email Id, Name and Password, Profile Image, Age and City. Output: - Successfully Saved in Database.</p>
FR3	<p>Title: Search Management</p> <p>Description: The user can view any diseases and medicines based on the search parameter and note it for future reference and also delete it if not needed. Input: - Search Parameter.</p> <p>Output: - Result Obtained.</p>
FR4	<p>Title: Notes Management</p> <p>Description: The notes and the history of individual users are kept in secure Google Firebase database and separating each users data.</p> <p>Input: - Note title, Description</p> <p>Output:- Saved Successfully</p>
FR5	<p>Title: User Management</p> <p>Description: The records of all users are kept in one centralized Google Firebase database and thus reducing duplicate data in the database.</p>
FR 6	<p>Title: Logout</p> <p>Description: The system provides security features through which user can logout from his current account safely.</p>

Non Functional Requirements

1. **Security:** The security can be achieved in this application by validating that only registered users are able to login in the application.
2. **Logging:** The authenticated user must be able to login and able to perform actions in the application.
3. **Storage:** The user information must be stored and maintained in database so that can be record can be easily retrieve whenever necessary. The database must be updated with each old and new record.
4. **Configuration:** The application must be arranged with all elements required and must contain various diagrams such as data flow, use case diagram, class diagrams etc.
5. **Performance:** The application must be optimized in the performance and also the application is flexible as per the user needs.
6. **Cost:** Reasonable amount of time is invested in this. But, the application is free of cost and also no additional costs is involved later.
7. **Portability:** The application is very portable as we can install the application on any android device and able to login to user account by user credentials.
8. **Reusability:** User can use newer Version by updating the application for better experience and for new features.
9. **Reliability:** Application is very reliable as all the user data are securely stored on firebase and user can access only his own account details.

Hardware and Software Requirements

For this application, the estimated functional requirements include the software requirements as below:

- Hardware Requirements

1. Memory : 1 GB Ram
2. Connectivity : Stable Internet Connection

- Software Requirements

1. Operating System: Android, iOS.
2. Front End : Flutter
3. Back End : Google Firebase

Timeline Chart

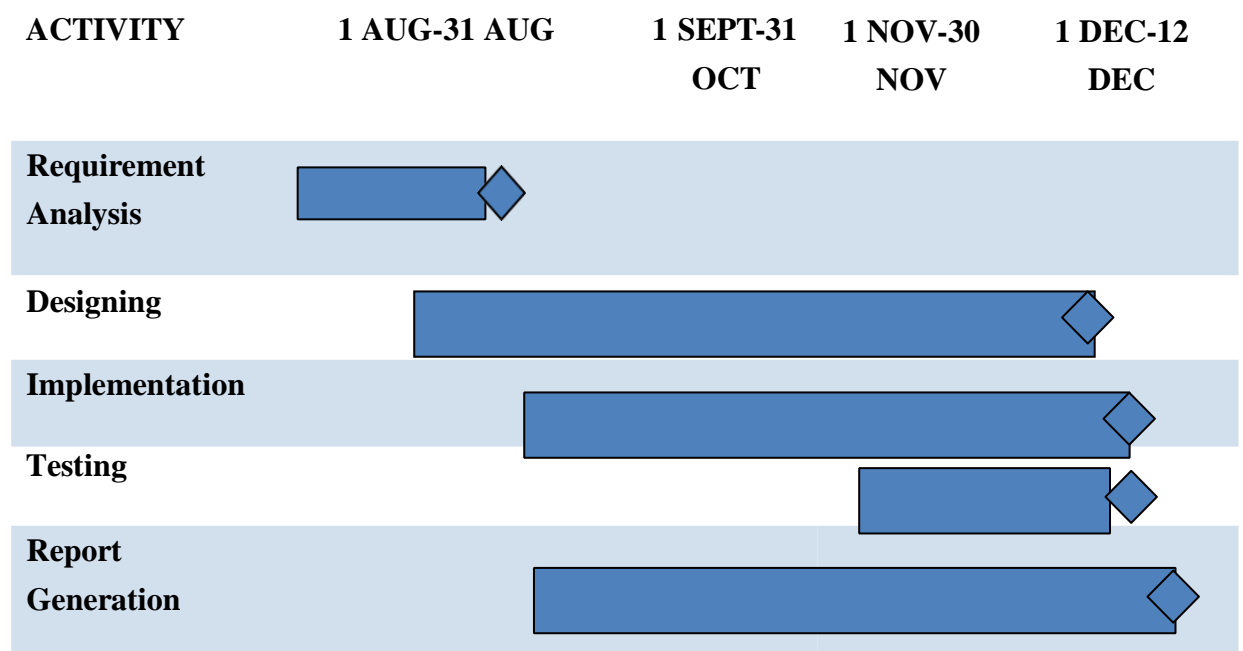


Figure 2.1: Timeline Chart

Chapter 3 System Design

Database Schema

The different tables which we had used for making of this application are-

Table 3.1: Login Table

Column Name	Data Type	Size	Constraint	Description
Id	VARCHAR	50	Primary Key	Email Id.
User	STRING	50	---	Username
Password	VARCHAR	50	---	Password

Table 3.2: Notes Table

Column Name	Data Type	Size	Constraint	Description
Id	VARCHAR	20	Primary Key	Unique Id.
Title	VARCHAR	500	---	Note Title
Description	VARCHAR	500	---	Note Description

Table 3.3: Profile Table

Column Name	Data Type	Size	Constraint	Description
Id	VARCHAR	20	Primary Key	User Id.
Username	STRING	50	---	Username
Password	VARCHAR	50	---	Password
Email	VARCHAR	50	---	Email ID

Age	NUMBER	3	---	Age
City	STRING	50	---	City
Photo	IMAGE	1Mb	---	Profile Photo

Table 3.4: Feedback Table

Column Name	Data Type	Size	Constraint	Description
Id	VARCHAR	50	Primary Key	User Id.
Rating	NUMBER	1	---	Rating

ER Diagram

- An E-R model is usually the result of systematic analysis to define and describe what is important to processes in an application. It does not define the processes; it only presents an application data schema in graphical form.

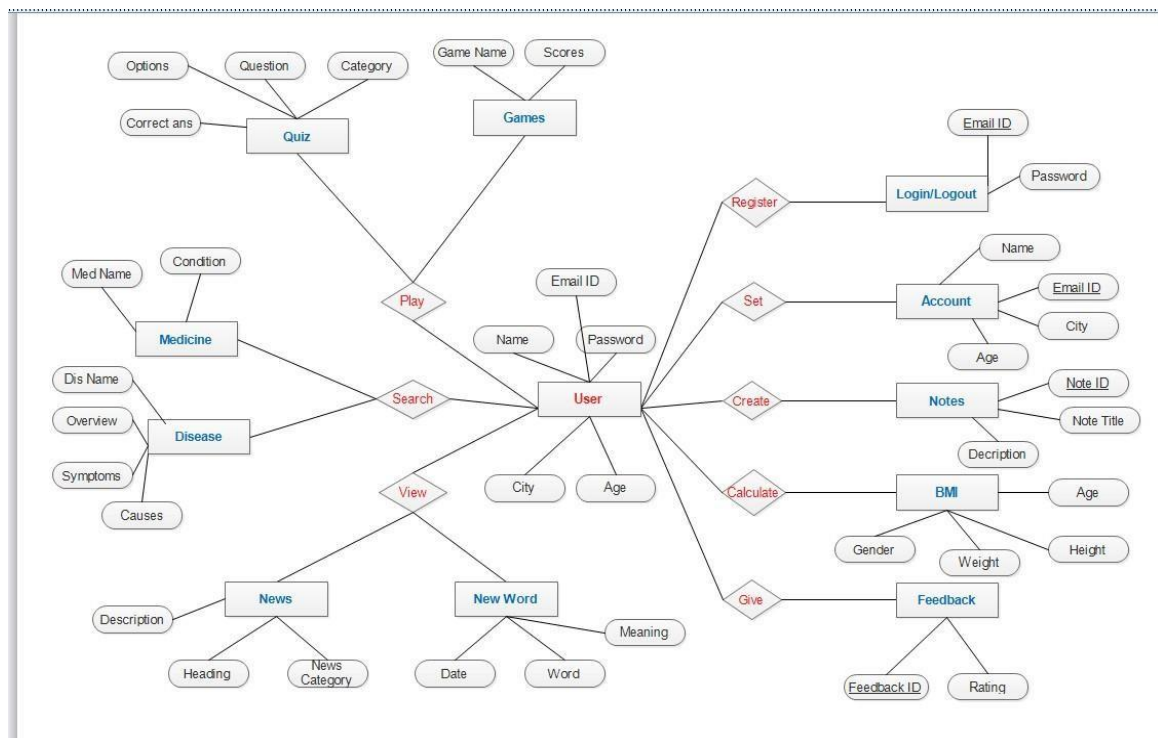


Fig: ER Diagram

Use Case Diagram

Use case diagram represents the user's interaction with the application that shows the relationship between the user and the different use cases in which the user is involved.

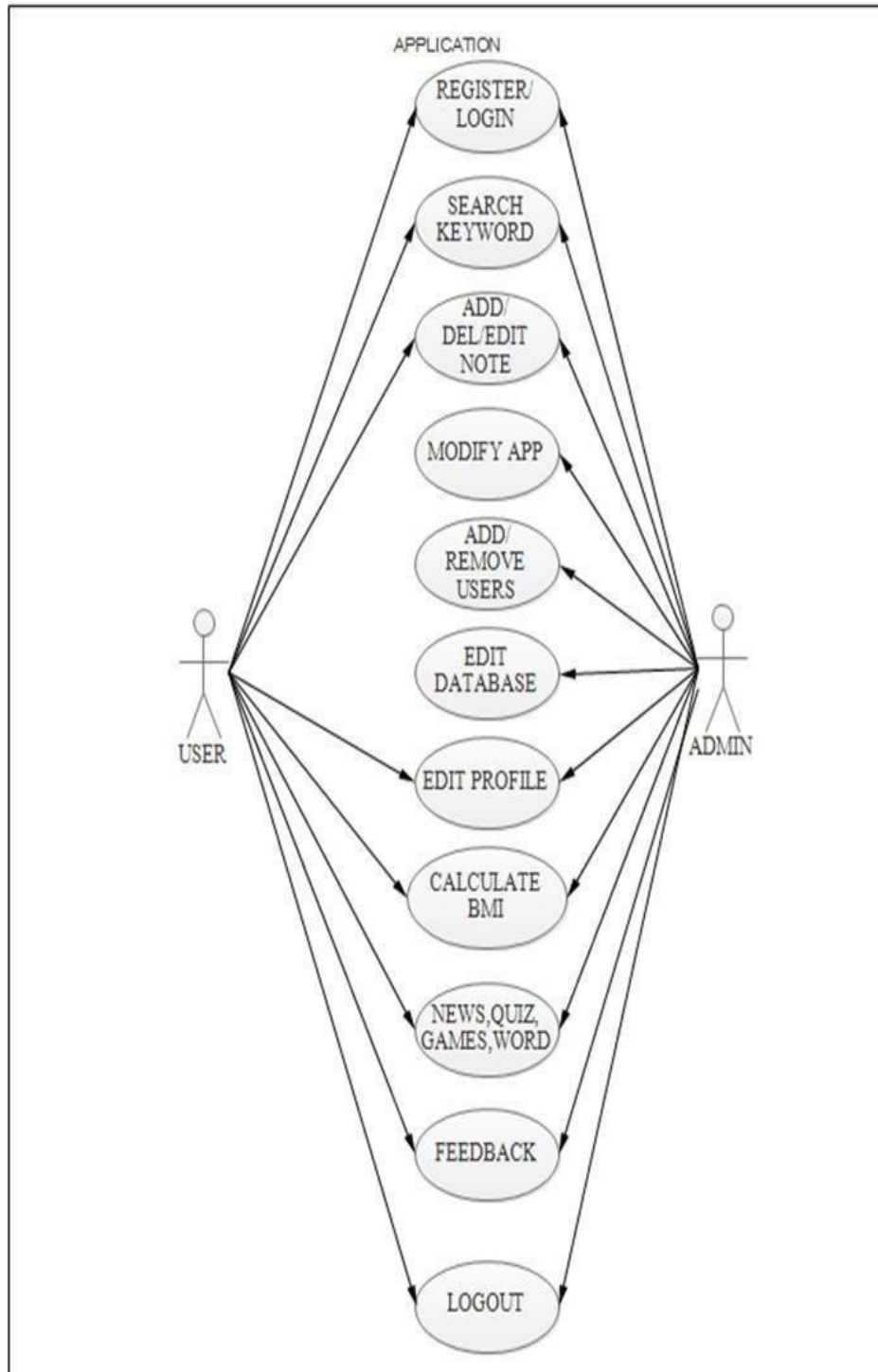


Fig: Use case Diagram

Sequence Diagram

Sequence diagram shows object interactions arranged in time sequence. It depicts the objects involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.

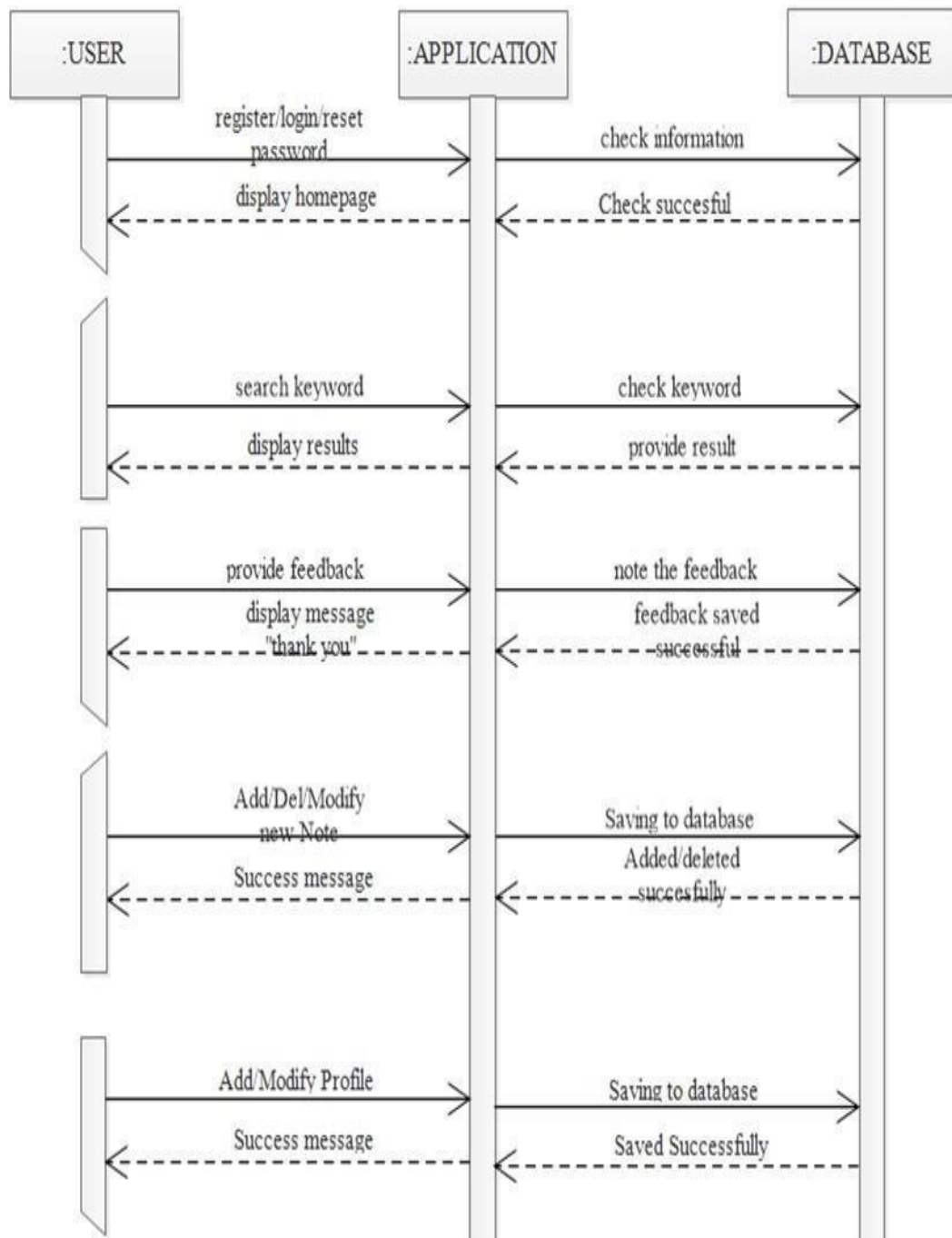


Fig: Sequence Diagram

Activity Diagram

Activity diagram shows graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency.

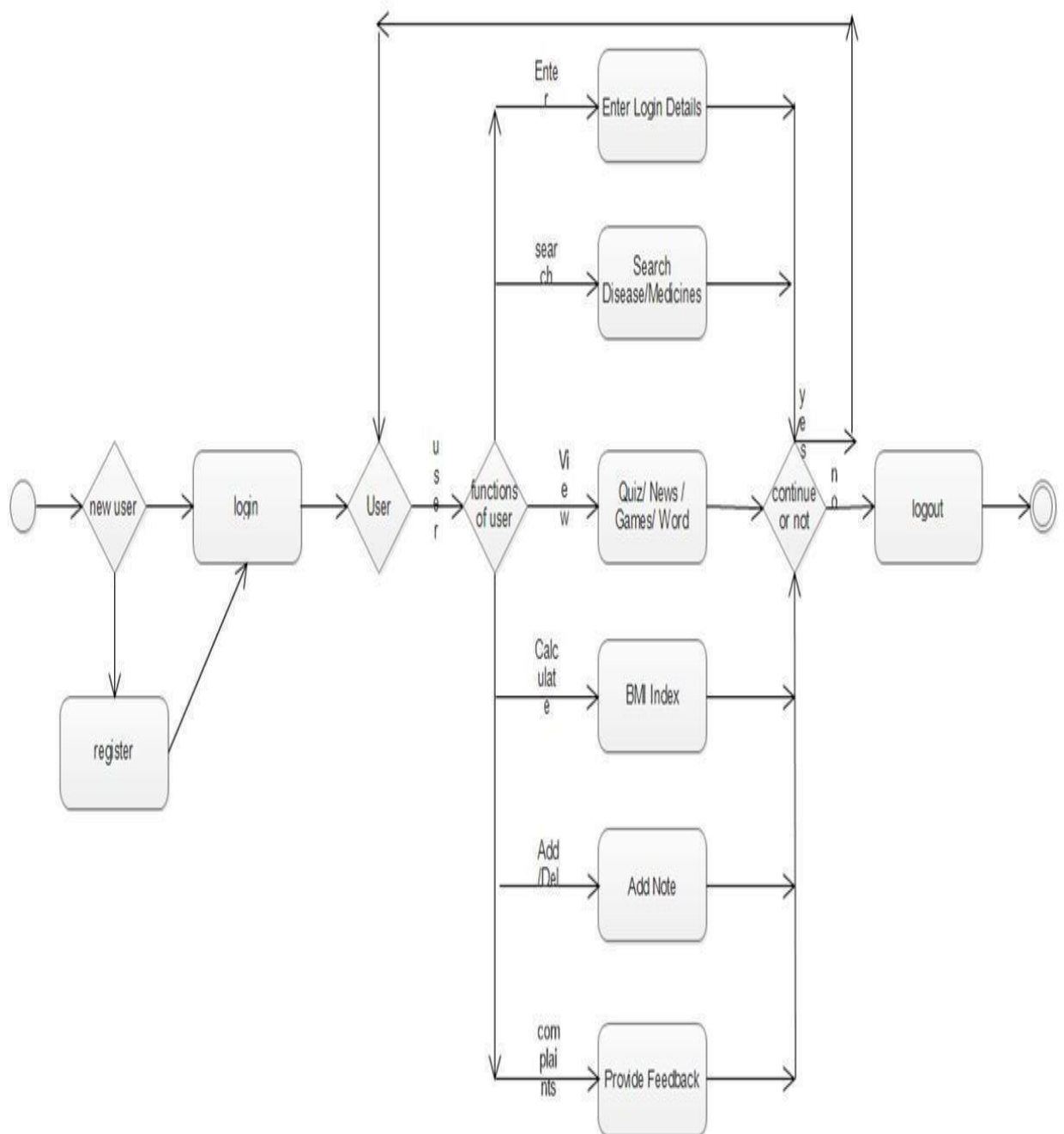


Fig: Activity Diagram

Class Diagram

Class diagram describes the structure of the application by showing the system's classes, their attributes, operations, and the relationships among objects.

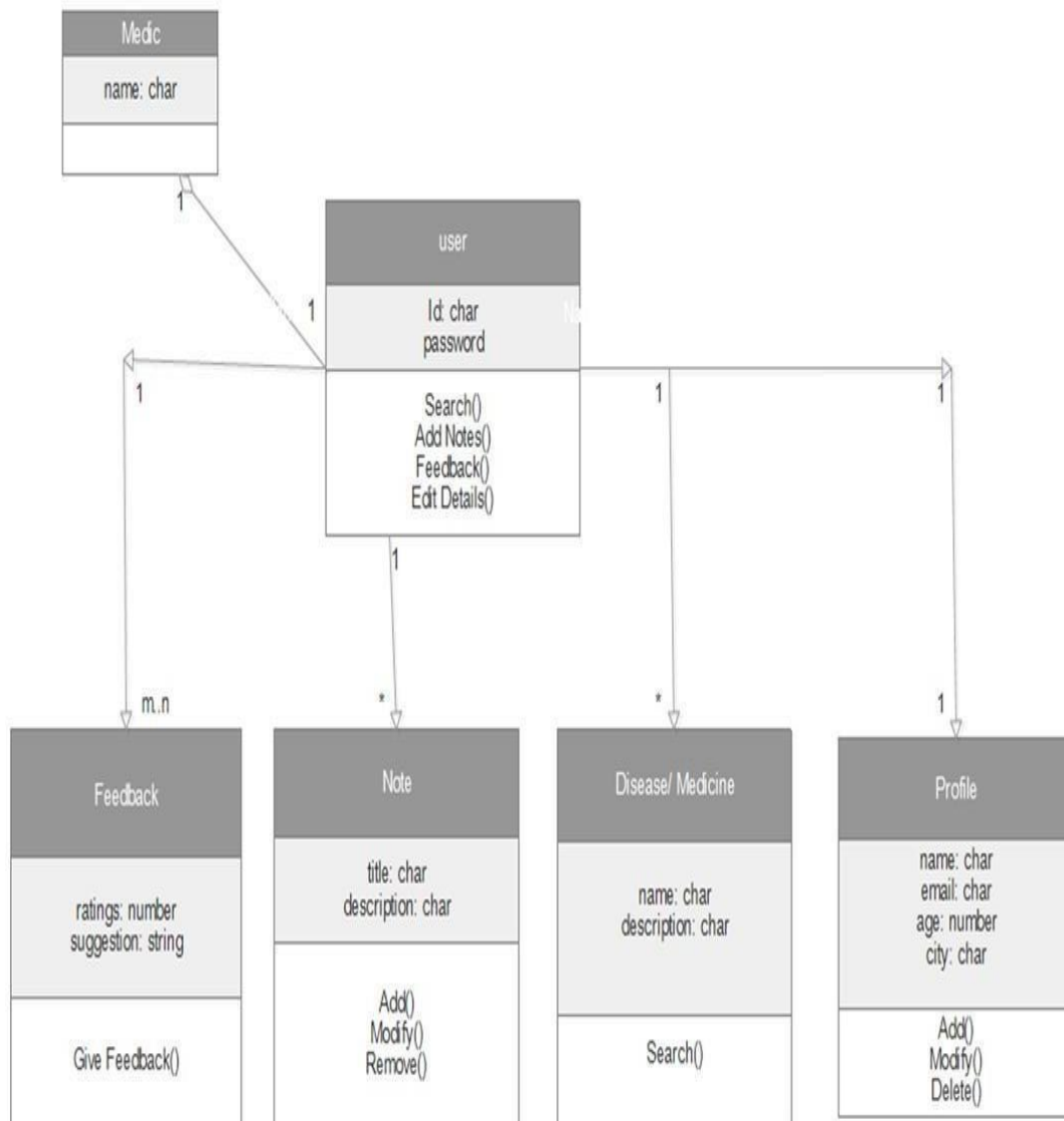


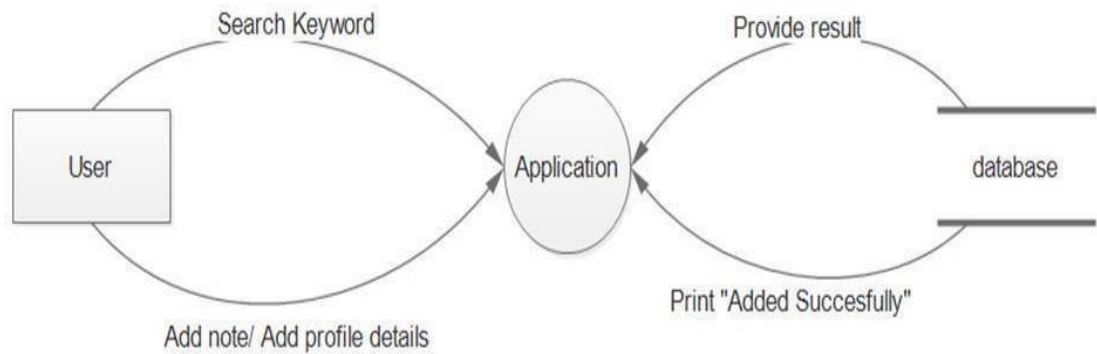
Fig: Class Diagram

Data Flow Diagram

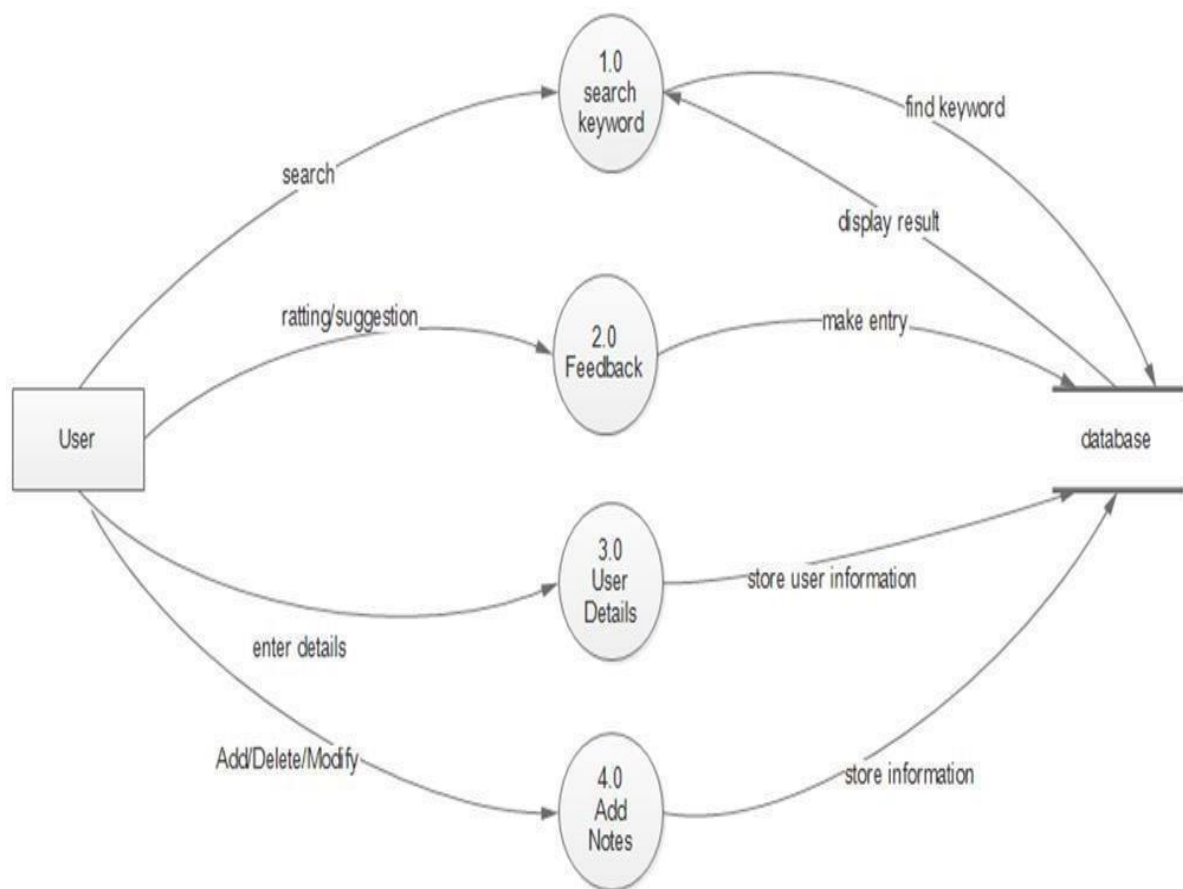
A data-flow diagram is a way of representing the flow of data through a process or a system.

There are two levels of DFD included in our project.

- Level 0



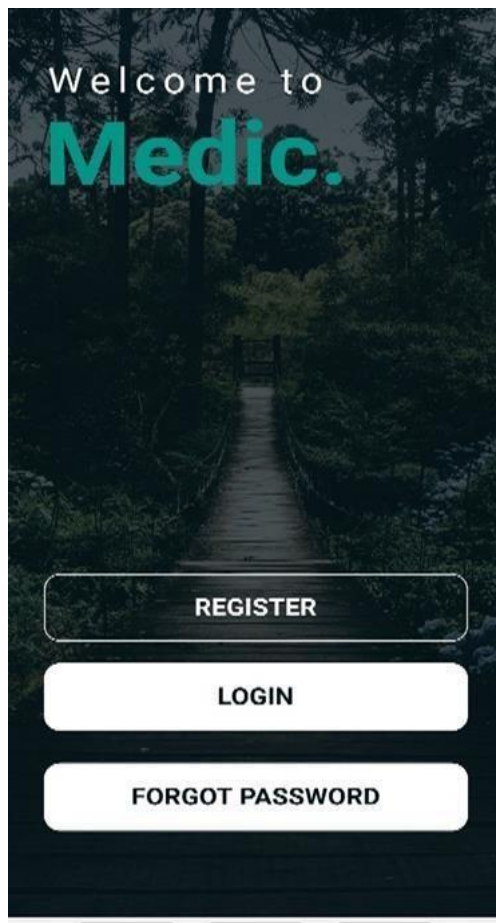
- Level 1



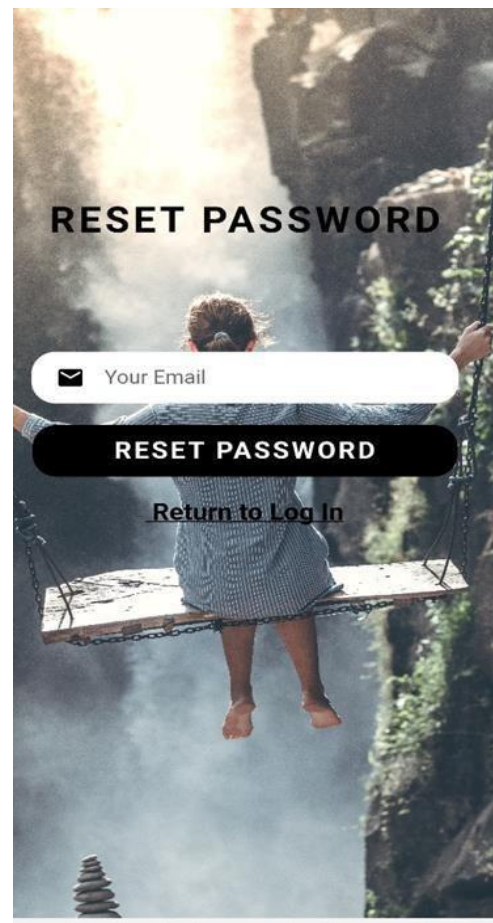
Chapter 4 Implementation and Testing

Snapshots

- **Login Page**
- Login Page includes the welcome screen, Register page, Login Page and Reset Password page.
- First a verification mail is sent to the user. If the user verifies the mail, then only user can access to the application.



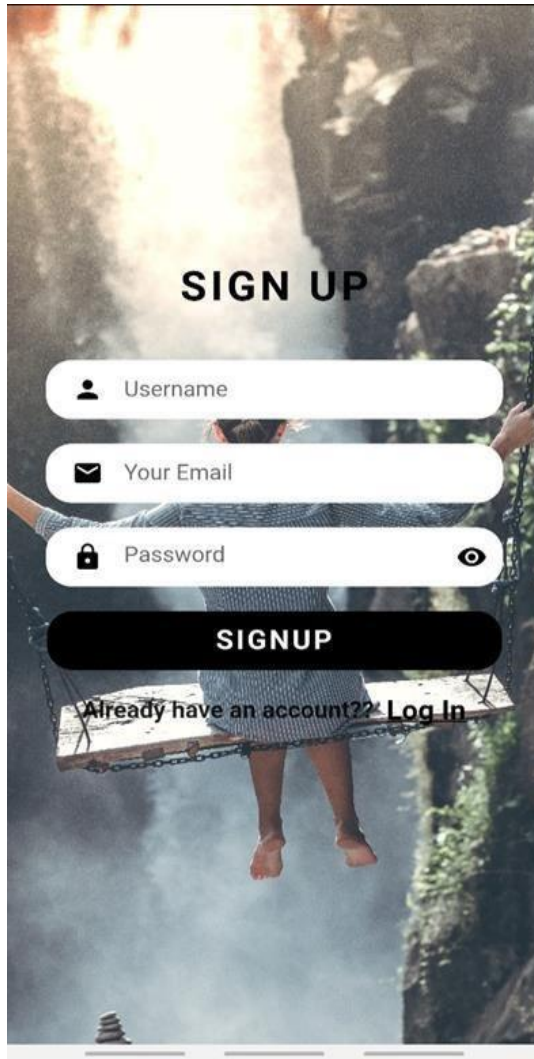
(a)



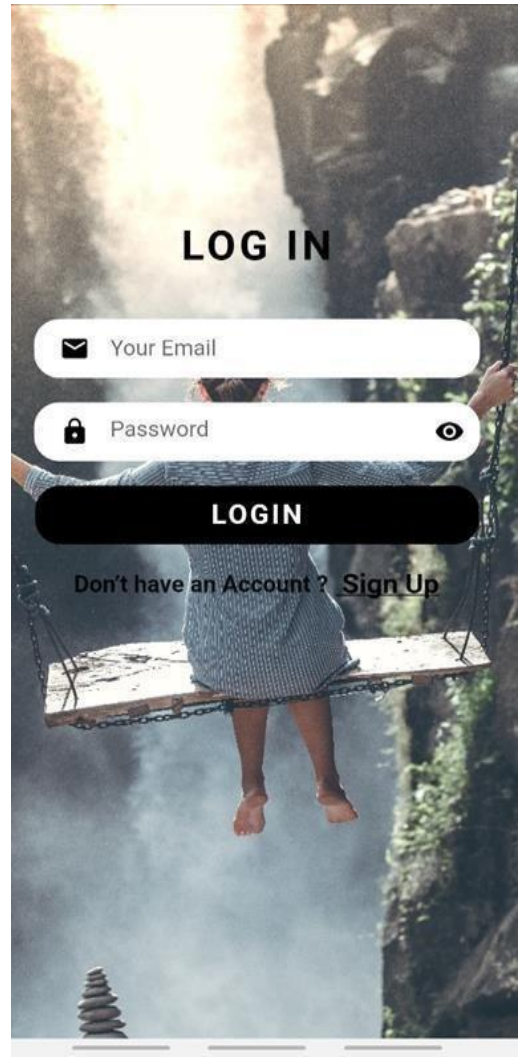
(b)

Figure(a): Welcome Screen

Figure(b): Forgot Password Screen



(a)



(b)

Figure(a): Register Screen

Figure(b): Login Screen

- **Home Page**
- Homepage includes four tabs namely, New Word, News, Quiz, Facts.
- New Word shows a new word with its meaning everyday as well as also shows the previous week words.
- News shows top headlines of the day as well as shows the news according to different categories like medical, business, entertainment, technology.
- Quiz contains quizzes on medical fields along with their correct answer.
- Facts contains medical related facts to make the user aware of the benefits of daily things.



(a)

(b)

Figure(a): Home Screen

Figure(b): Drawer



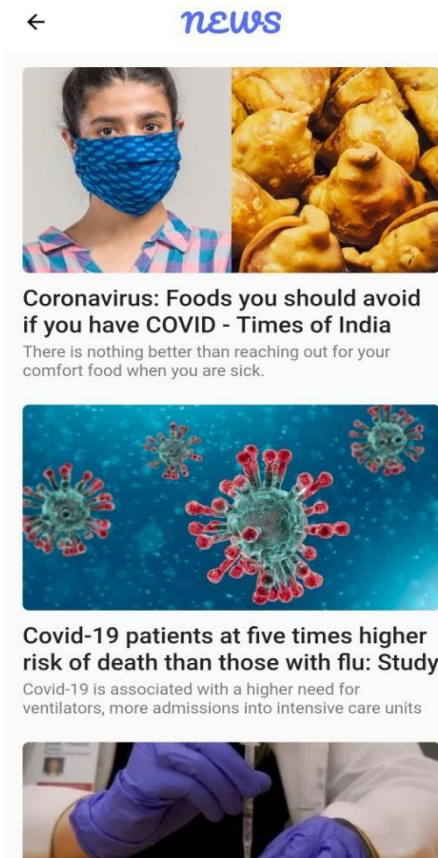
(a)



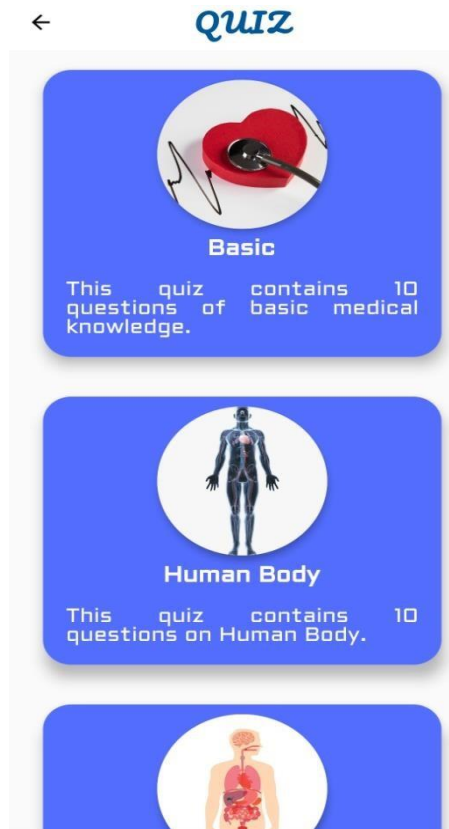
(b)

Figure(a): Word of the day

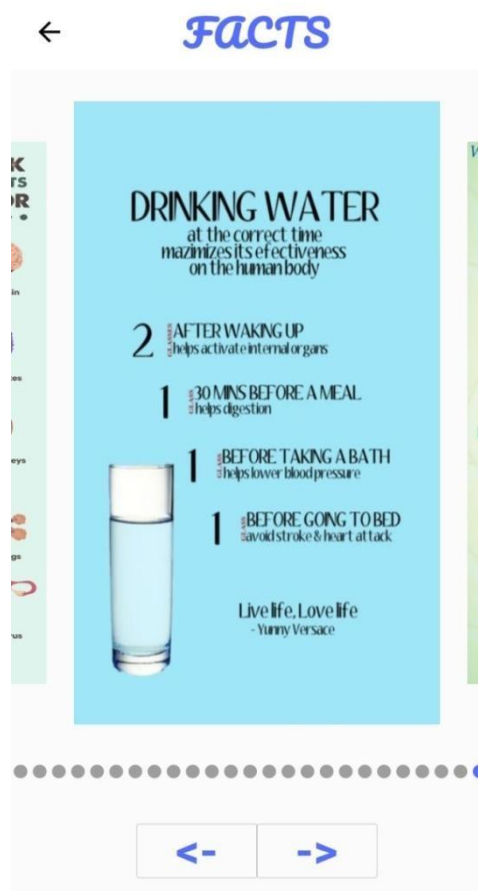
Figure(b): Last Week Words



Figure(a): News Screen



Figure(b): Quiz Screen

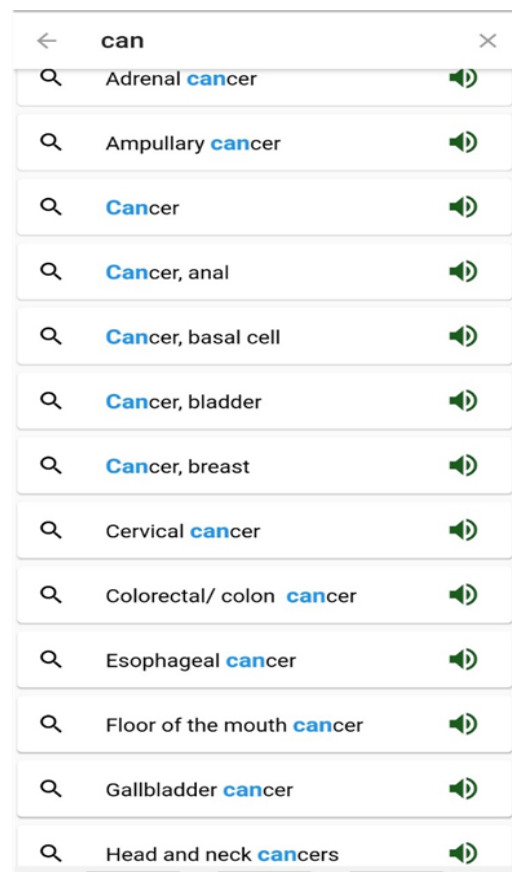


Figure(c): Facts Screen

- **Disease Screen**
- Disease Screen includes a list of diseases and each disease include overview, symptoms and their causes.
- User can search any disease through the search bar on the top right corner, and gets the results including the matching keyword and get detailed information on overview, symptoms and causes or else “No Results Found” is displayed.



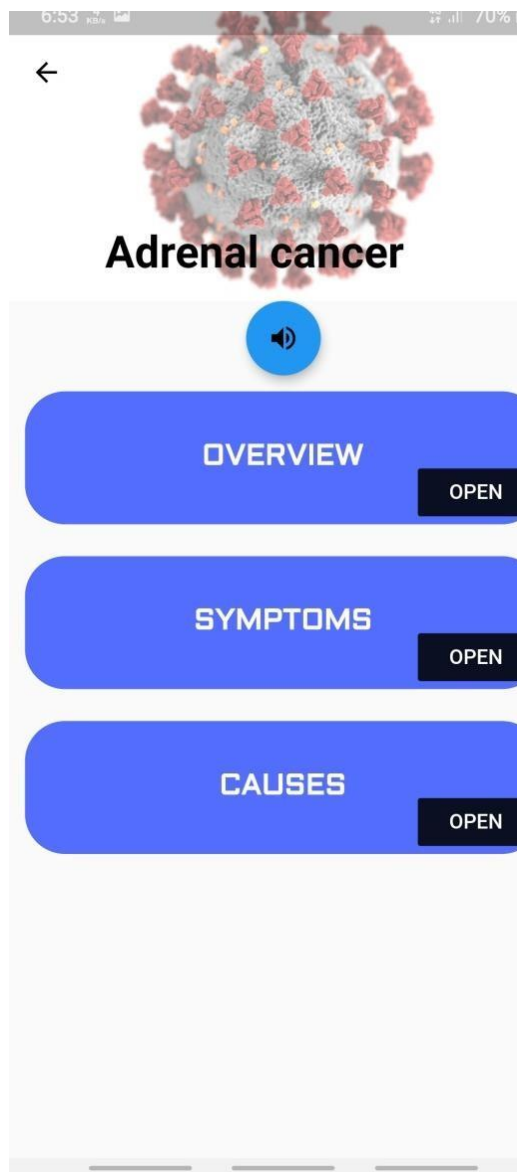
(a)



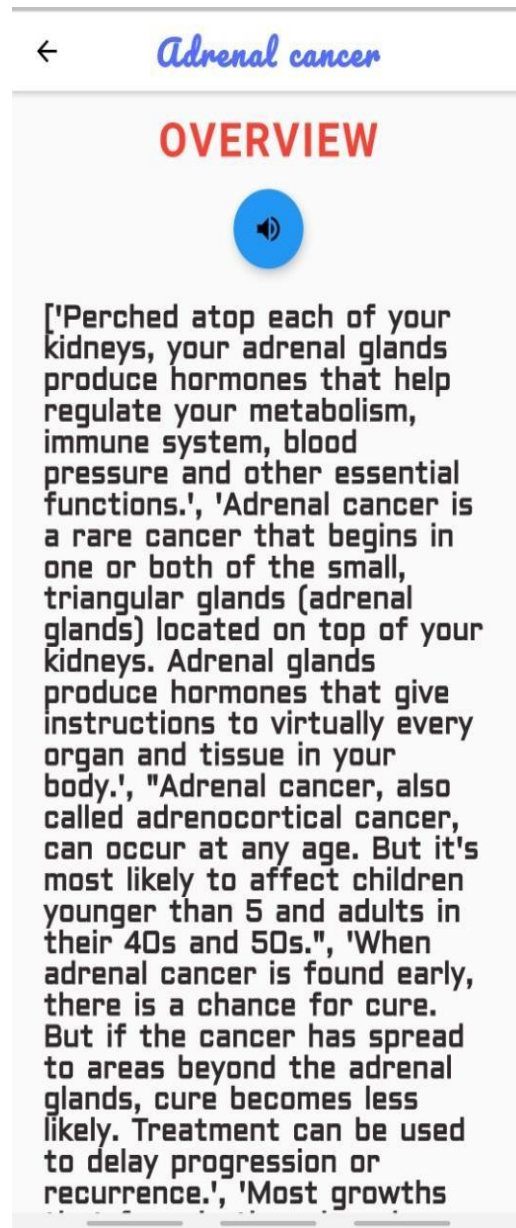
(b)

Figure(a): Disease Screen

Figure(b): Search Screen



(a)



(b)

Figure(a): Details Screen

Figure(b): Overview Screen

- **Medicine Screen**

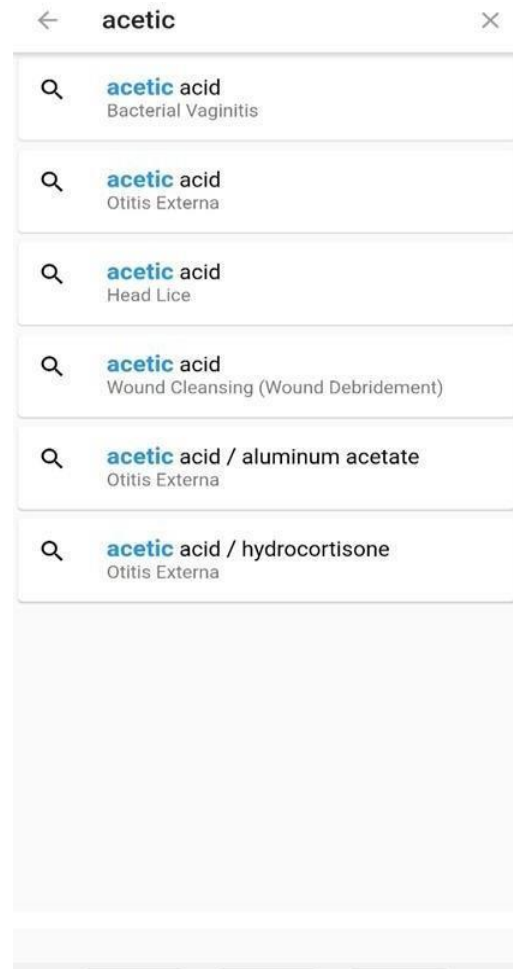
- Medicine Screen includes a list of medicines and the condition in which it can be widely used.

- User can search any medicine through the search bar on the top right corner, and gets the results including the matching keyword and get the condition it can be used or else “No Results Found” is displayed.



(a)

Figure(a): Medicine Screen



(b)

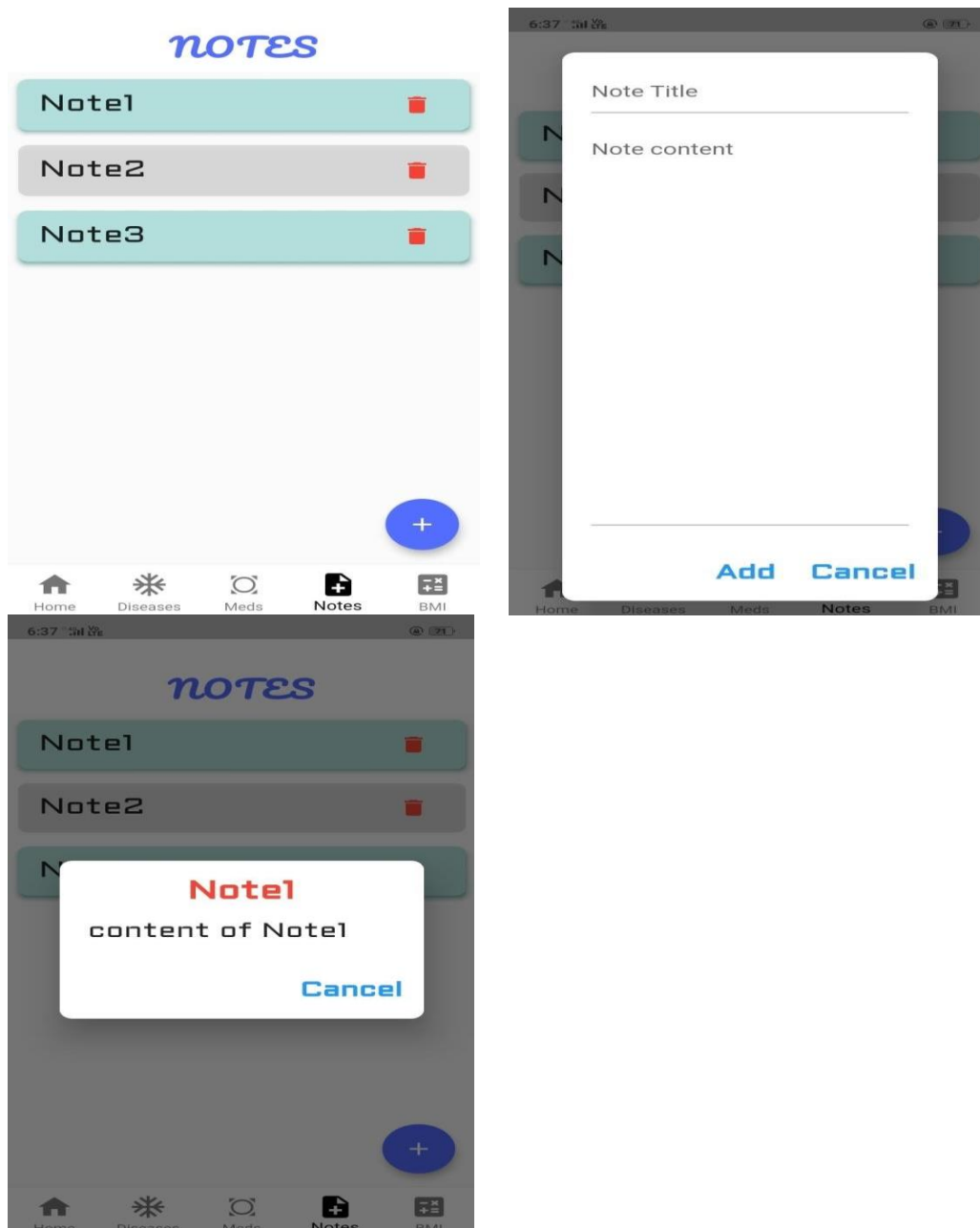
Figure(b): Search Screen

- **Notes Screen**

- Notes can be used to save any notes for future reference or current use and can be easily added or removed.

- A new note can be added by clicking on the floating action button showing add symbol on the bottom right corner.

- By clicking on it, it will popup an alert dialog box prompting you to add note title and note content. After writing desired note, user can either save it or delete it.
- By clicking on the notes from the list of notes, user can see the detailed note and can also modify it.
- User can delete the note by clicking on the delete icon on the right side of the note or by right/left swiping the note card.



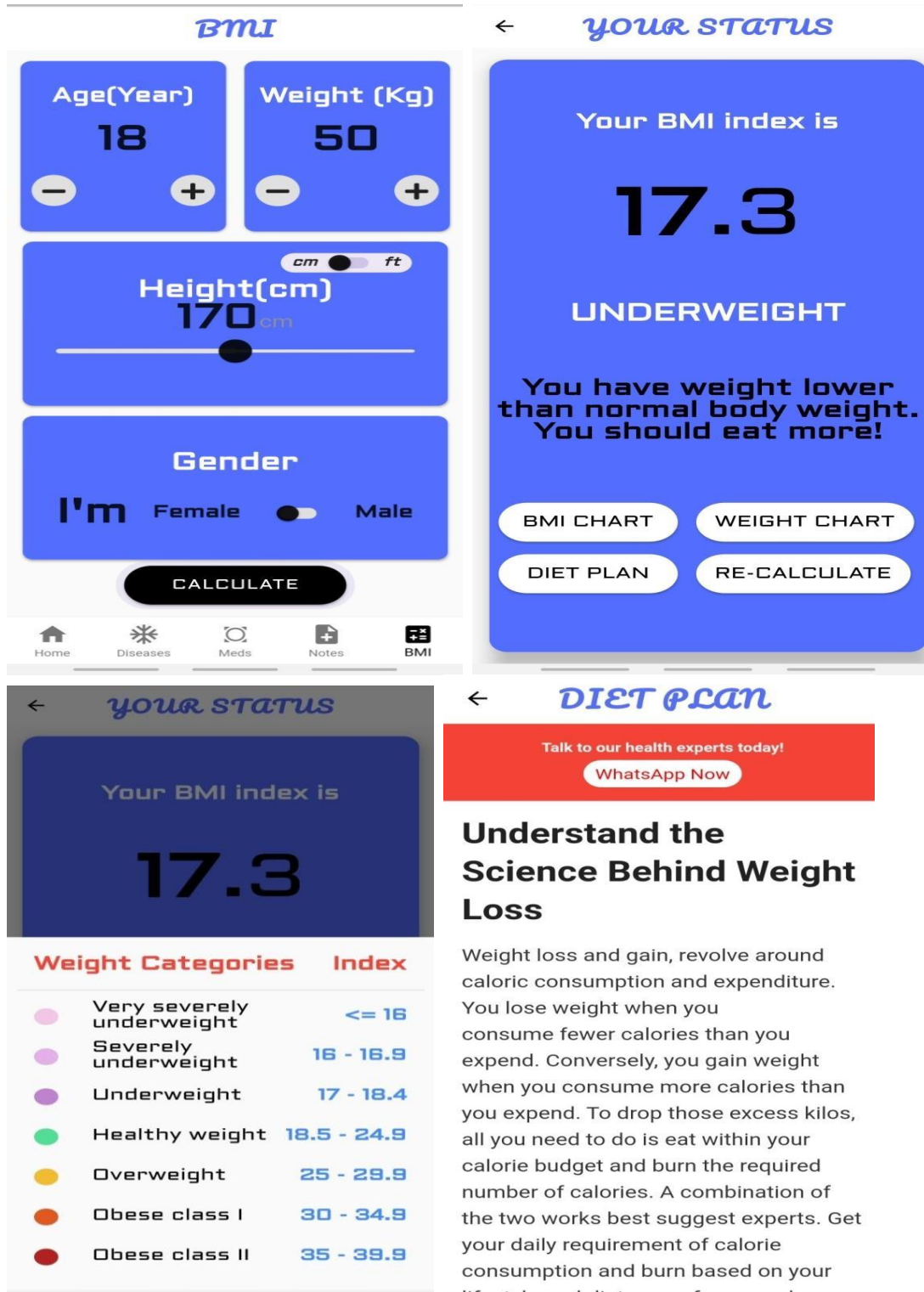
Figure(a): Note Screen

Figure(b): Add Note Screen

Figure(c): Modify Note Screen

○ BMI Calculator Screen

- User can calculate the Body Mass Index of anyone by selecting the relevant details like Age, Weight, Height and Gender.
- Based on that, the result is shown and also BMI chart is available to get information of the different ranges available.



Figure(a): BMI Screen

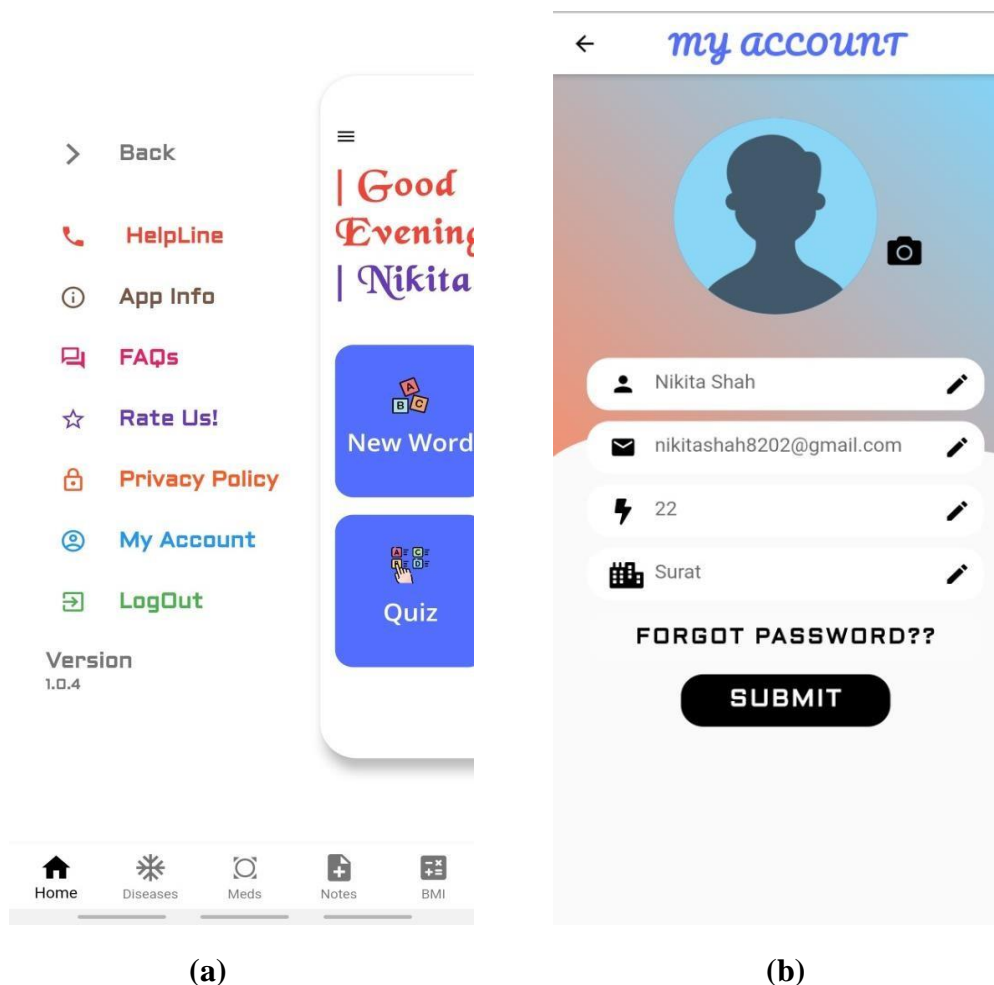
Figure(b): Result Screen

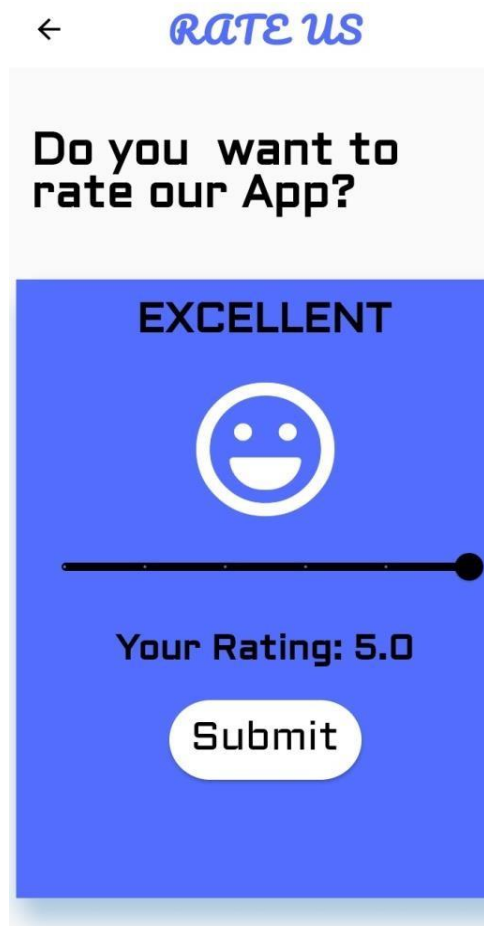
Figure(c): BMI Chart Screen

Figure(d): Diet Plan Screen

Settings Screen

- Setting screen is situated in the drawer of Home Screen on the top left corner.
- Settings include Helpline, App Info, FAQs, Rate us, Privacy policy and My Account Page.
- User can reset the password from his/her account and can also edit/access his/her personal details.
- User can give feedback from Rate us Page or can contact us directly through mail address provided in privacy policy page.





(c)

Figure(a): Drawer Screen

Figure(b): My Account Screen

Figure(c): Rate Us Screen

HELPLINE	
NATIONAL EMERGENCY NUMBER	112
POLICE	100
FIRE	101
AMBULANCE	102
Disaster Management Services	108
Women Helpline	1091
Air Ambulance	9540161344
Aids Helpline	1097
DCP – Missing Child And Women	1094
Railway Enquiry	139
Senior Citizen Helpline	1091 , 1291
Railway Accident	1072

(a)

APP INFO

ABOUT APP

A free Medical App on medical diseases, medicines, news, quiz and discover detailed definitions, signs and symptoms, diagnosis, causes. With detailed information on over 14000 diseases and probable prescription drug info, this app is free medical encyclopedia guide. An disease dictionary with medical conditions ranging from ebola to acne.

App Features:

- * A FREE to download Medic on illness conditions and diseases.
- * A handy free pocket guide for physicians desk reference.
- * Find detailed information on illness, definitions, references and medical guideline for reading and research.
- * Also there are additional features like Note Functionality, BMI calculator, Word of the day, Latest news, Quiz on medical fields and medical facts.

(b)

FAQs

Who is this app for?

ANSWER

How is this app useful?

ANSWER

From which devices can I use?

ANSWER

How it is different from other Medical app?

ANSWER

Why can't I hear the audio pronunciations?

ANSWER

(c)

Figure(a): Helpline Screen

Figure(b): App Info Screen

Figure(c): FAQs Screen

Test Cases

Sample test cases are given as below:

Test ID	Case	Test Data	Expected Result	Actual Result	Pass/Fail
1	Login	- Internet Connectivity - Login ID - Password	If Login ID & password is empty or invalid and No Internet connectivity then display Error message otherwise Login successfully	If Login ID & password is empty or invalid and No Internet connectivity then display Error message.	Pass
2	Home (Network)	Swipe down For Synchronization	First time Synchronization When swipe down, Network report will refresh.	First time Synchronized. When swipe down, Network report refreshed.	Pass
3	Forgot password	Email Id	If Email Id is valid & Authorized then reset password option is set by received email.	Password is reset if the Email id is authorized and valid.	Pass
4	Logout	Select Logout	User should Logout of the application and redirected to Login page.	User get Logout of the application and redirected to Login page.	Pass
5	Exit	Select Exit	Application should be closed.	Application is closed.	Pass

Conclusion and Future Scope

To conclude, it had been understood now that how much the knowledge about basic diseases and medicines is important for personal safety as well as for the people around us. So, we created this application which provides detailed information of about 12000 diseases and over 5000 medicines and the condition in which it can be used. Further, it also provides daily news to keep the user up to date about what's going around. It also provides Quiz, facts and word of the day to keep user constantly involved using fun and interactive way.

This same application can also be transformed into a website for better reach to wide range of users and also we can make the Search experience more user friendly to provide better results.

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