Advocate E-Diary

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled "**Advocate E-Diary**", submitted by "**Md Arif Arman**" ID No: 171-15-8629 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on *9th September 2021*.

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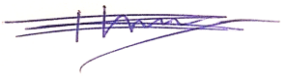

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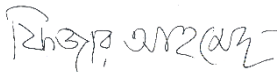

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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Md Tarek Habib, Assistant Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

Advocate E-Diary is a mobile-based software for Lawyers' daily case board management. With this kind of application Advocate Can keep their evidence. In this application, we can add information and make updates set alerts like client, cases, case history, court appointment management for law firms. All of them are mobile-based applications. Many of these types of applications are not mobile base they are software base and they are not used for any network area. So, this application reminds the Advocate of their cases and case history.

Keep all of the information and members' data on a single and organized platform. No more physical diary is required now. You will never have to worry about losing your data and your date of case time. When there is a single platform for multiple users and data in real-time synchronized, you will always update case details. The main goal of our project is to provide the smart and easiest service to the Advocate through an android application. Access to All your important data of your client, case or appointment, and data information. With this mobile app, Advocates can be productive no matter where you are.

You can't have a PC all the time so a mobile app can easily be your favorite choice. This application will prove to be more helpful for the Advocate users and will make life easier and smartly use your work in any situation.

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CHAPTER 1

Introduction

1.1 Introduction

Advocate Diary is a mobile-based application for Lawyers' daily case board management. With this application, Advocates can keep records of their evidence. Advocate E diary application can add information and update set alerts like client, cases, case history, court and appointment management for Law firms. It is the digital diary that keeps client, case, team, and appointments details in an organized and easily accessible way for lawyers. This is the diary that keeps everything in an organized and easily accessible way. When going into court hearings or client meetings, it is always better to have all the relevant information on you so you can have proper visibility into the case. Using this mobile application this work to be easy for you. Using this app removes your work stress to a low level. The tool is developed using the latest technology over the cloud. It can be accessed over multiple mobile devices. Advocate E diary manages the day-to-day activity and builds a comprehensive client, case, matter database, and history that can help improve every aspect of your practice. You will have immediate access to tools for case status and information, documents management and assembly, calendaring and docketing, and contact management.

1.2 Motivation

The advancement in technology had brought automation in various fields including legal The electronic diary offers many advantages over the traditional paper one. It allows you to save unlimited cases, yet find them much more easily. It reminds you automatically and can be accessed anywhere be it over mobile. At the same time, it keeps all your data safe and secure and ensures you never lose it. The software is very easy to use. The main goal is reducing paperwork. It helps us to recollect the information about the previous and future case information.

1.3 Objectives

The main purpose of this diary is to reduce paperwork. It helps us to recollect the information about the previous and future case information.

1. Electronic Diary: It enables you to manage all your case records in electronic format.

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2. Manage Unlimited Cases: There is no restriction on several cases, you can store them. Making it, one source of information for you.

3. Smart ways to search cases: Enables you to mark important cases (star), store tags information, you can store any keyword with case detail, and thus making search easy, fast, and accurate.

4. Minimum Investment: No need to buy any expensive software, advocate-diary is available over the cloud on per use model.

5. Customizable Masters: You can customize your list of courts, case types, and stages. This makes data entry easy and fast. Making software learn, your terminology.

6. Client Contact Details: Manage client details, along with the case, making it easier to manage, search and communicate.

7. Easy Maintenance: The system is built with more emphasis on easy and accurate maintenance of data. Allowing you to update the next date and proceedings with quite an ease.

8. Access on smartphones: Your data is available over your smartphone (Android), making it even easier to access.

9. Get Complete Data back: Your Data is yours only, so if you decide to stop using Advocate-Diary, you can request the complete data dump of yours. After due validation, we would be providing you the complete data, without any additional cost.

10. All case details in one place: All your case details are available at your fingertips, no more looking into different diaries for different years.

1.4 Expected Outcomes

We have come with the idea of developing this android app for lessening the misery of people during this period. We expect to get the following outcomes from this app-

- An advocate can easily add their case information and case date anywhere.

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- An advocate will be added their new case date and time also added their case code number and case information.
- You can see cases of a specific date or between any dates and much more information.
- Facility to know progress stage of a case, this entry made while entering the hearing date in Diary.
- You can see details of individual cases and details of the individual case provided.
- You can log in individually so that your information will be just yours.
- Diary will show you the list of cases for a specific option.
- Also, we added the Bangla language for ease to use.

1.4 Project Management and Finance

We plan to develop our project further by making it a web version so everybody can see their work in progress. Also, we plan to other languages so worldwide every advocate can use this application. Also, we uploaded this app to many more app stores and many more users to be free to use. We added more security examples: the OTP system for security to log in. And we can use the client reminder message to remind the client next date of the case to attend. We can use this app to premium to customers get premium service for them. Also, we added the feedback option to added feedback to our client.

1.5 Report Layout

The project report is divided into chapters. Each chapter contains various information and description regarding different topics related to the project. In the very first chapter, we have written an introduction of the project and given an overview of the project. The first chapter talks about the motivation, outcome, and objectives of our project. After that, in the second chapter, the background of our project is illustrated. The second chapter consists of some terminologies, preliminaries, and a comparative analysis of the project. And the challenges faced during and after the project development are also a part of the second chapter. The third chapter is all about the process models and diagrams to explain the app through these models and diagrams, like Business Process Model, Use case Diagram, UML Class Diagram. And the requirement specifications for building the app are also discussed in

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the third chapter. In the fourth chapter, the discussion is about the design specification of the app. Here we discuss things like the front-end, back-end designs, UX/UI design, the expected user experience, and how to implement these designs. The fifth chapter focuses on implementing the app and then testing it to see if everything works perfectly. We have discussed how we have implemented the app and later tested and compared it with other similar apps to showcase the efficiency of the app. Again, in the sixth chapter, we have laid out the impacts of this app on the environment and society during pandemic situations. The final and seventh chapter is about the future scope of the app and how we can improve and update the app that can be relevant.

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CHAPTER 2

BACKGROUND

In this chapter, the project's history is detailed. We will go through the project's terminology, connected works, comparative analysis, problem scope, and so on. We'll also talk about the difficulties we encountered while developing this app.

2.1 Preliminaries/Terminologies

Our project was developed mainly because the advocate loses their data situation. The app contains features like private data, case information, new case number, and date update, language change system, personal account, account verification system, calendar system to update the date, client (name, number, and address option), and the upcoming date or serial by serial date option that easily help the Advocate. We used those features which help users to get smartly their work done process. We also put a reminder in the app so advocates can put reminders for the nearest case date and case preparation there. There were some ways in which it could have implemented the feature.

Our app, like any other app, has some commonly used terms in the app or the description of the app which may not be common at other times. Some of those terminologies are: -

E diary – In our application, Advocates use the normal diary to document their information sometimes it can destroy or be lost and in this type of case we cannot figure out that information. So, this E diary helped to secure your data into the cloud, not internal storage. And gather your data in your Id.

Calendar System – We are added a calendar system to include the case date and update the new case date also. It helps us close case data serial-wise. It helps advocates informing their clients also.

Firebase- Firebase is another commonly used term in the project report, which is just a real-time database to store the data of the app and generate real-time profile update information when the app is being used.

So, these are the preliminaries and some terminologies of our project which are used in the app and the project report both and also in the general description of the app.

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2.2 Related Works

There are many similar applications in the play store. They provide kind of similar services that our app provides. But there is a thing that none of these apps has exactly all the features available in it which are available in our app like there is an app in the store named “Lawyer Diary”. It has three similar Features that our app also has which are – Calendar system, Case information gather system, Client information system but the rest of the features of our app is not available in it. We have built such an application that is different from the other apps and we have combined many features in it so that people can get necessary advocate work services from the same source easily. Some more related apps to our project are -Lawyers clerk less office, Advocate Document, Advocate diary case tool, Advocate daily case diary.

2.3 Comparative Analysis

There are tons of apps for users to use and there are a lot of similarities between many apps. Our app has features like Personal id, personal database edit system, Client information, Case date serialization, Every client Information, Language change. And other apps have similar features. So here is a comparison between our app and similar apps to get a broader idea about our app and its efficiency.

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Table 2.1 shows a comparison between similar apps.

Table 2.1: Comparison between similar apps.

Applications name	Personal id	personal database edit system	Case date serialization	Every client Information	Free app	Language change
Lawyers clerk less office	✓	✓	✓	✓	✓	
Advocate Document			✓	✓	✓	✓
Advocate diary case tool	✓	✓	✓	✓	✓	✓
Advocate daily case diary		✓	✓	✓	✓	✓
Lawyer Diary		✓		✓	✓	

The comparison above basically shows other apps with almost the same features as ours and all most all of the apps are Advocate Diary related.

2.4 Scope of The Problem

In this application to solve the advocate problem. This came out our relative uncle was an advocate also he suffering this kind of problem to collect information and sometimes he not remembers his case and sometimes he lost the case information and client information. So, the thought of the problem came from there. There are other similar apps but the apps are not that active or useful.

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2.5 Challenges

The challenges of this project are quite a few

1. One of the challenges is to secure the data.
2. To manage the multipole user's date.
3. Track all the details like client name, case numbers, evidence.
4. Back up and restore data from the cloud.
5. Sometimes developing this project correctly cannot show.

So, these are some challenges that we faced while building up this application.

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CHAPTER 3

Requirement Specification

The project's requirement definition will be presented in this chapter. Which will essentially cover all of the project's needs using various types of diagrams, graphs, and other structures.

3.1 Business Process Modeling

Any project's Business Process Model displays all of the processes and subprocesses that have been mapped to lay out the authors' intended notion for the project. The model comprises a diagram of user interactions, data flow, and other internal exchanges and linkages.

The following figure 3.1 shows the business process model.

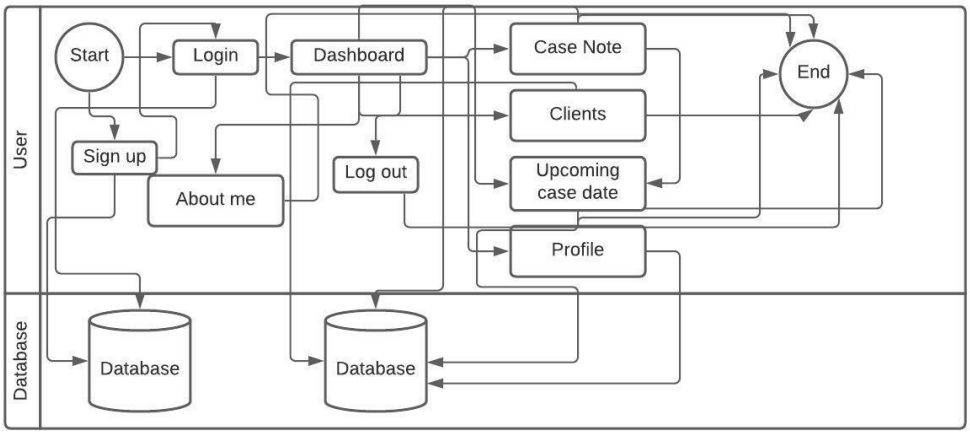

Figure 3.1: Business Process Model

The user gets help from the database. And the database shows the contact data about clients and case numbers and information also. The database shows all the client data, case date case information and that will easy to contact the client and gather the information of the case.

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3.2 Requirement Collection and Analysis

Both hardware and software specifications are taken into account while gathering and completing the project's requirements and evaluating them. Because our software is android and mobile phone-based, you'll need a phone that runs on the Android operating system. There's also specific software that's required to both develop and run the app smoothly. As a result, both the hardware and software elements of requirement gathering and analysis are considered: -

- Software

Every Android application needs a collection of applications to develop and then execute. Some variables come into play while picking the proper software for an android application or any form of application. Elegant design, user-friendliness, simple navigation, and use, and so forth. So, for our project, the software requirements would be: -

  - Operating System: Windows 7/8/10.
  - Tool Kit: Android 2.3, Android studio.
  - Coding Language: Java
  - IDE: Android Studio

- Hardware

For any program to run, it requires hardware. If the hardware requirements for the application to execute are not met, the software is rendered useless. Anyways, the hardware requirements for our project are: -

  - System: Pentium IV processor or higher.
  - Hard Disk: At least 512MB
  - Ram: Minimum 512MB.

Also, the tools that would be needed to run the application would be:

  - An android smartphone with at least an Android KitKat version.
  - At least 15 MB free space on the phone.

So, these were the software and hardware requirements for developing and operating the app. Also, because most of the needs aren't very recent, collecting them isn't difficult, and once the hardware is gathered, the software may

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be downloaded as needed. That's how the project requirements were gathered and applied to the project's development.

3.3 Use Case Modeling and Description

Use case diagrams are undeniably one of the most effective ways for various types of users to engage with the entire system. The structure is made up of actors (users), use cases (features and situations), and relationships, all of which are shown by numerous pointer arrows. As a result, one of the greatest alternatives for showcasing a straightforward viewpoint or notion of a project is to employ case modeling. And the use case model for our project is bellowed:

The following figure 3.2 shows the Use Case Model.

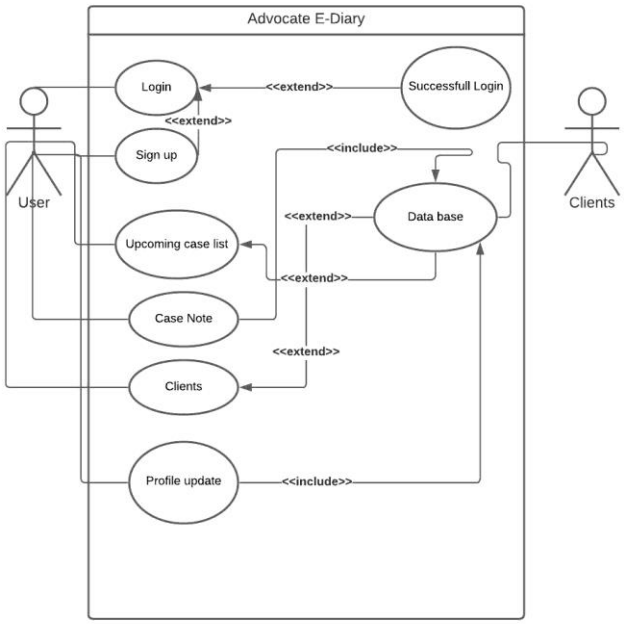

Figure 3.2: Use Case Model

In our project, there are essentially advocate who will interact with the system. And he will be the ‘user’ is the primary actor and will have the most amount of interaction with the system. And the database will be helping the user gather the data and inform the user and intricate to the user.

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3.4 Logical Data Modeling

Logical data modeling is a technique for displaying the architecture of data components and their relationships. For analytical data modeling, entities, characteristics of those entities, and the kinds of connection between them are mostly employed. A logical data modeling technique is the UML Entity Relationship Diagram.

The following figure 3.3 shows the logical data model.

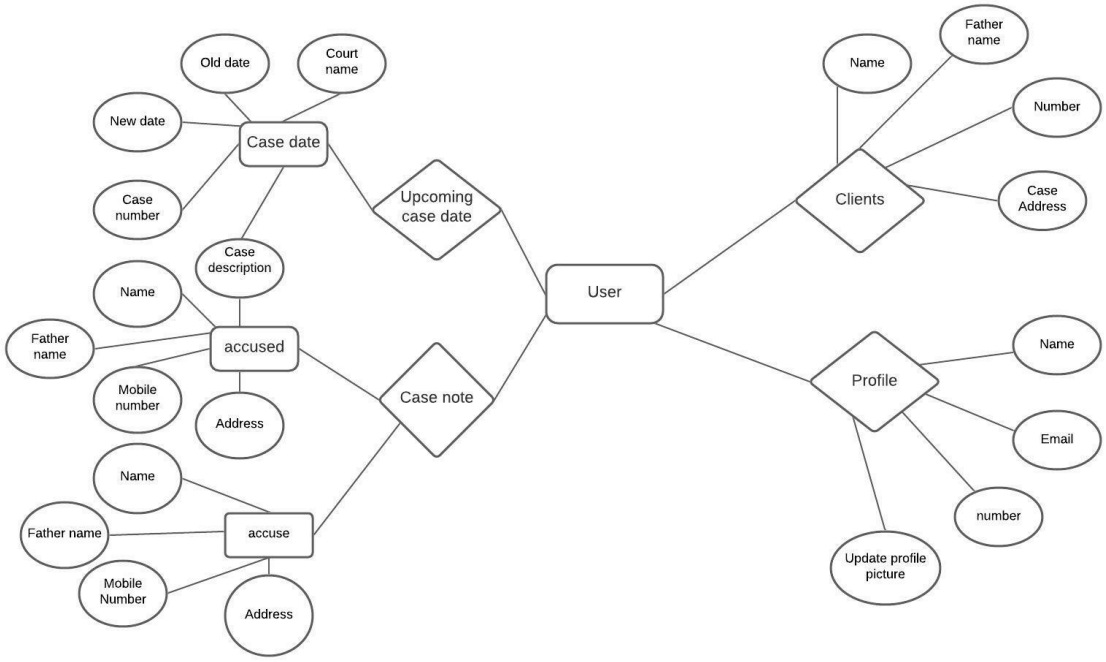

Figure 3.3: UML ERD/ Logical Data Model

In our project, we have used 'Firebase' real-time database to store information about the "client "and "case ". Therefore, logical data modeling of our project will consist of only these features as entities and the entire model can be structured by the use of UML Entity Relationship Diagram.

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3.5 Design Requirement

Many aspects must be addressed while designing an app. The design must be user-friendly, comprehensible, and simple to operate. Our app is a smartly working advocate diary with a gathered client and case information system. So, our app has features like log in personal id, case list system, case information, case date update system, client information, client list, two languages available. All of the features are helpful and thus needed to be easily understood by the user in emergencies. So, we had to keep all of this in mind while designing the app. For the app, we utilized Android Studio, and each feature's XML layout was built as simply as possible. Every button has to be highlighted with pictures and animations in our design. Back-end design, database design, user interfaces, and alarm/reminder functionality were all included. Overall the attributes of the project we had to consider before designing it, are: -

- User Friendly.
- Easy to Understand.
- Fast Response.
- Providing contacts for clients.
- The list of the case is serial-wise.
- Using a calendar to update the case date.
- Overall a good perspective of the app.

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CHAPTER 4

Design Specification

This chapter is all about the application's design specifications, including front-end and back-end design, user experience, interface, and application execution needs. Any type of project design necessitates the creation of a framework that is both user-friendly and developer-friendly, as back-end design is a crucial component. Setting out the overall layout and structure of a project before beginning to create it is always a good idea, and then the structure and design must be carried out during the construction process.

4.1 Front–end Design

The front-end design of any system shows case the external outlook of the system. It displays the colors, features, buttons, layout of the system. In our project, the front-end design is very simple and user interactive.

The following figure 4.1 shows the Log in menu bar.

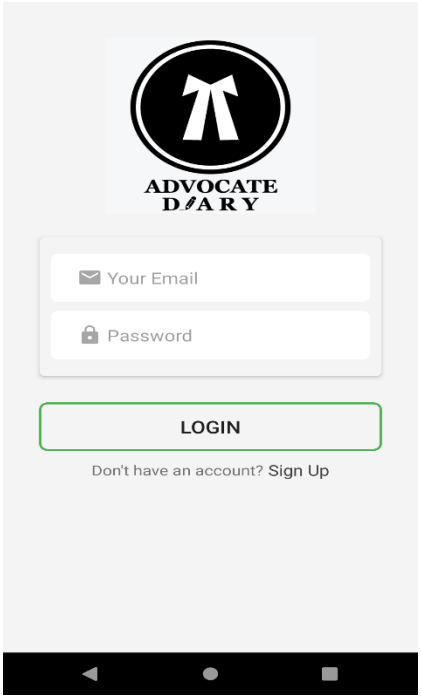

Figure 4.1: Log in menu

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This is the Login menu of my project. In this menu, you can log in your unique id to the next step or you don't have any id you register for a new id to click the Sign-Up option.

The following figure 4.2 shows the Sign-Up menu.

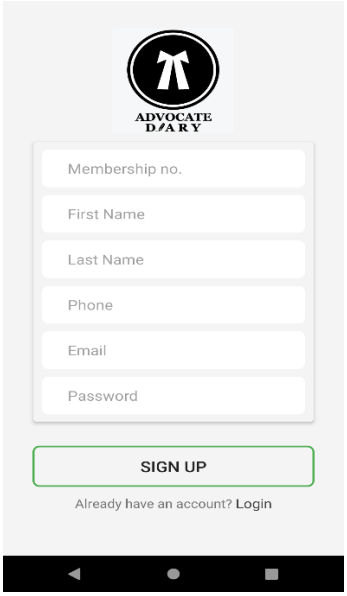

Figure 4.2: Sign Up menu

This is the Sign-up menu of the application. This menu will help to create a new id. This id will be unique.

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The following figure 4.3 shows the Homepage and Menu Bar.

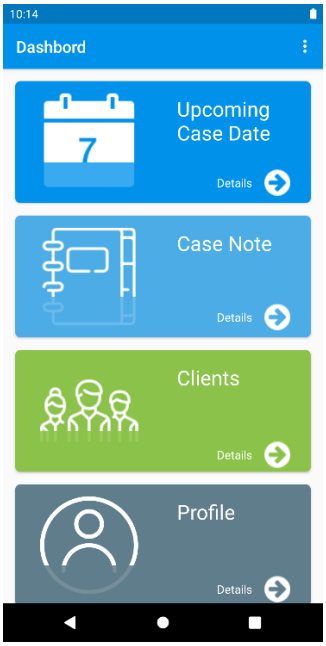

Figure 4.3: Homepage and Menu Bar

This is the homepage of the project where tree features are shown. And each feature is helpful to advocate to smartly work and easy to recognize their case and client name. The feature includes Upcoming Case Data, Case notes, Client, etc.

The following figure 4.4 shows the upcoming case date menu.

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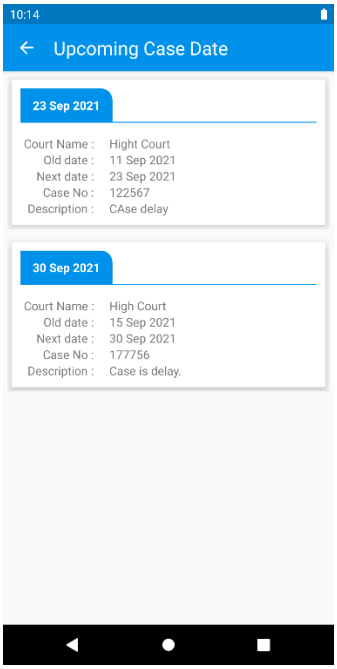

Figure 4.4: Upcoming Case date menu

This feature shows upcoming case date and case information. Also, it was a systematic and serialize date show and it helps the advocate knowledge of the upcoming date.

The following figure 4.5 shows the Case details menu.

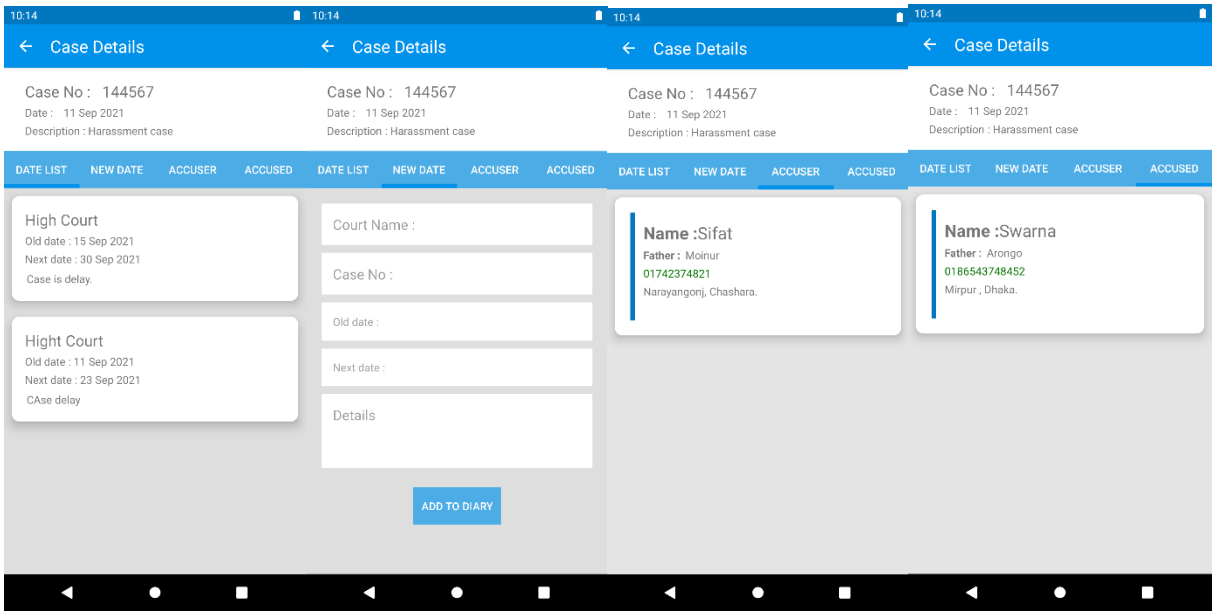

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Figure 4.5: Case details menu

This feature is very important to the advocate in case details. Case details have a case number, case name, and case details. The date list has a new date and an old date also. And every detail of the case is adding you to this system. A new date-adding system was included also. Who is the accuser in this case and are the accuser details also included? And there contact number and everting details also you can add.

The following figure 4.6 shows the Case list.

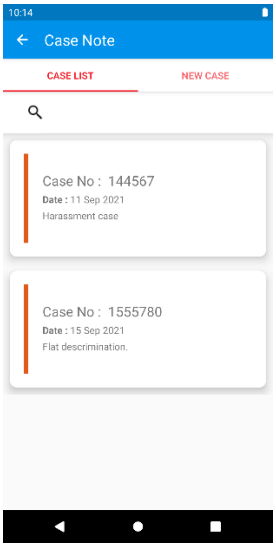

Figure 4.6: Case note

Case note has 2 different options 1. Case list, 2. New case. The case list has case details and another case list.

The following figure 4.7 shows New Case.

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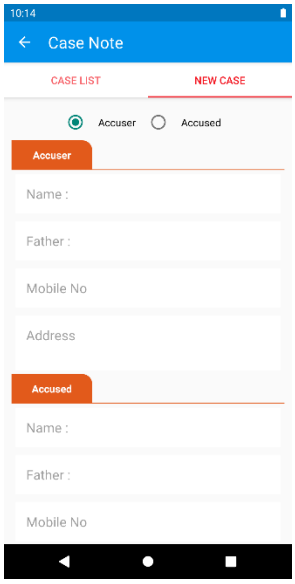

Figure 4.7: New Case

The new case has two options. Accuser and accused to create a case detail and their information also. There is a name, Father Name, Mobile number option also.

The following figure 4.8 shows the client's menu.

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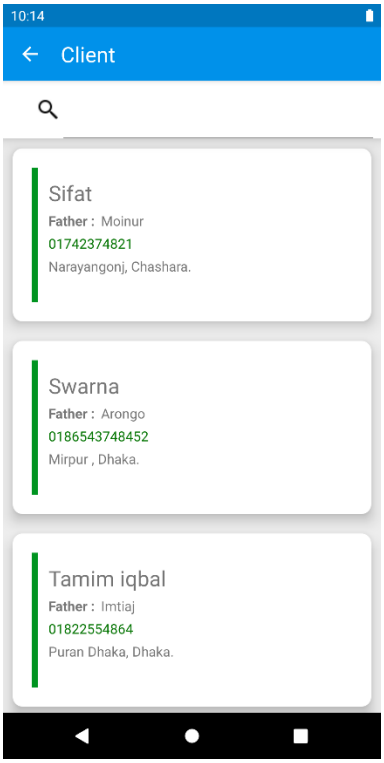

Figure 4.8: Client List

This menu has a client list. Every client number, address, and name were included. Also, the search option was included also there will be easy to search for the client you need most. And the search option will be serial and character-wise so you can easily search your important client into exact time.

The following figure 4.9 shows Language and logout menu.

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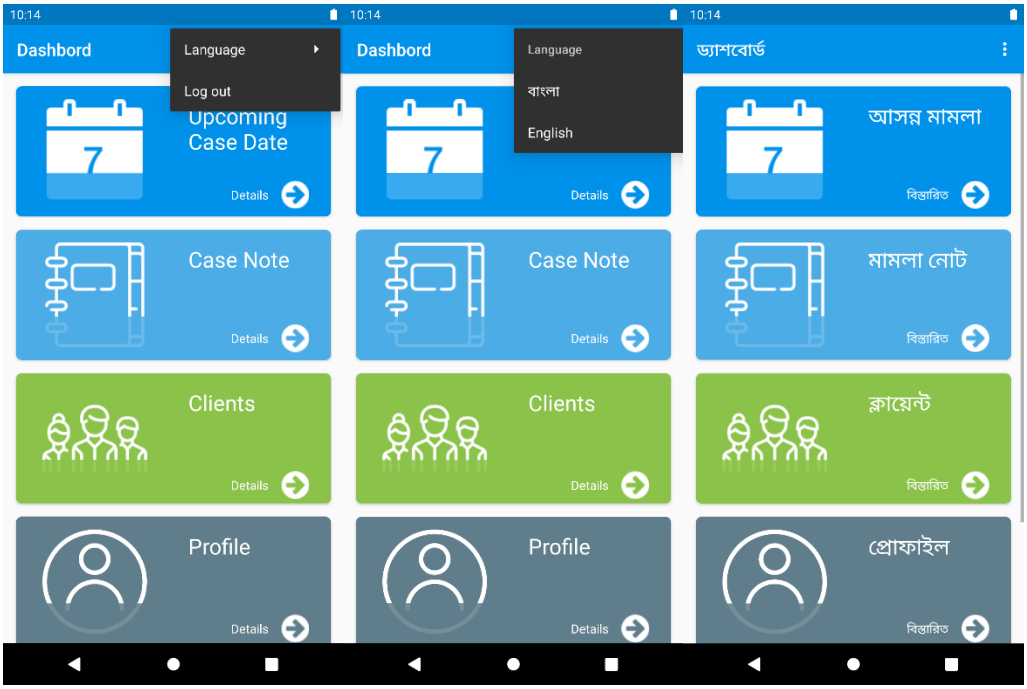

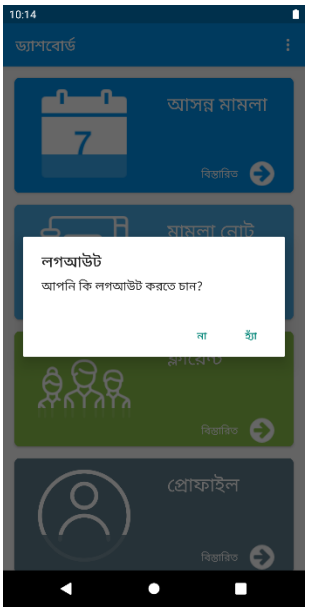

Figure 4.9: Language change and Log Out Option

In this menu, we can change our language to Bengali and English also. So, that every advocate can easily store their data also and easily understand how to work the app also.

The following figure 4.10 Profile and Update your profile menu.

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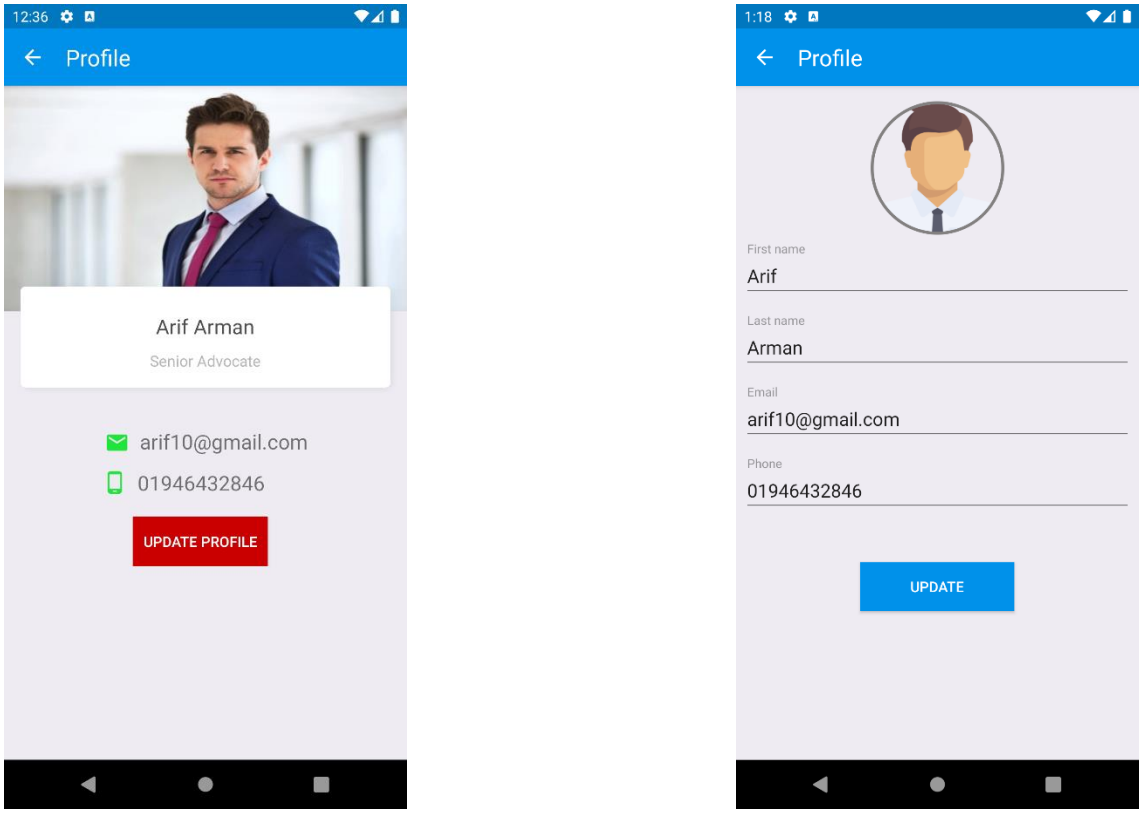

Figure 4.10: Profile and Update your profile menu.

In this menu, we can see our profile data and we can edit our profile data also. In this menu, we can see the profile information. And we can edit our profile data also. You can also edit your profile photo in this app.

The following figure is the 4.11 About Me menu.

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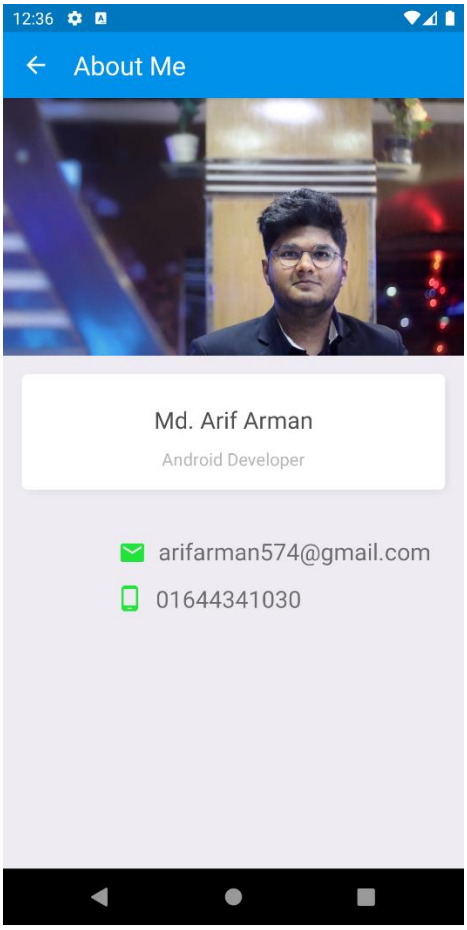

Figure 4.11: About me menu

In this menu, we can see the ours about me option. In this menu, we can my details also. My all information.

Now you can see the all function of this app. In this application, an advocate can easily access their data and update their data also. And everyone using the app has to go through some symptoms-related questions everybody and based on their answers the application showcases the affected people in the contact tracing section. And the questions the to be attempted in “My Report “in the menu bar

4.2 Back-end Design

The back-end design of a project is the backbone of the project on which the entire project depends. We developed our app with ‘Android studio’ and use ‘Firebase’ as a database to store and receive data. Which is a real-time database. The basic structure is the coding and designing of the app in Android Studio and connecting it to the Firebase database.

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The following figure 4.12 shows a simple structure of the firebase to app connection.

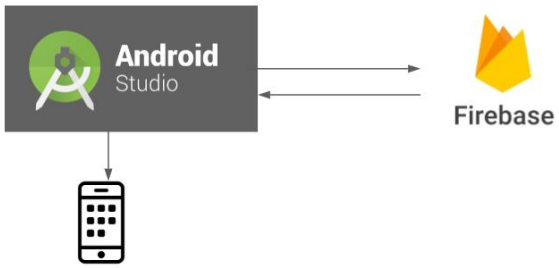

Figure 4.12: Simple structure

However, the back-end designing also consisted of designing the features of the app, like adding the buttons, scrolls, images, animations, etc., and coding for the functions to work. And finally adding it to Firebase.

The following figure 4.13 shows a back-end design overview.

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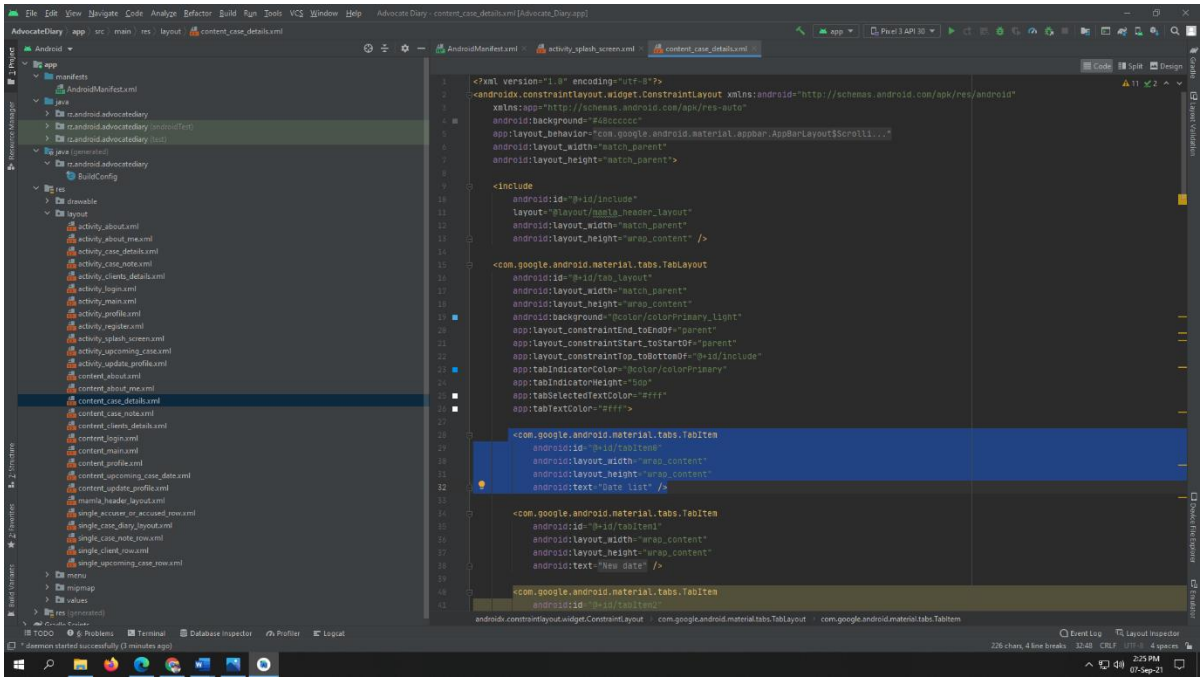

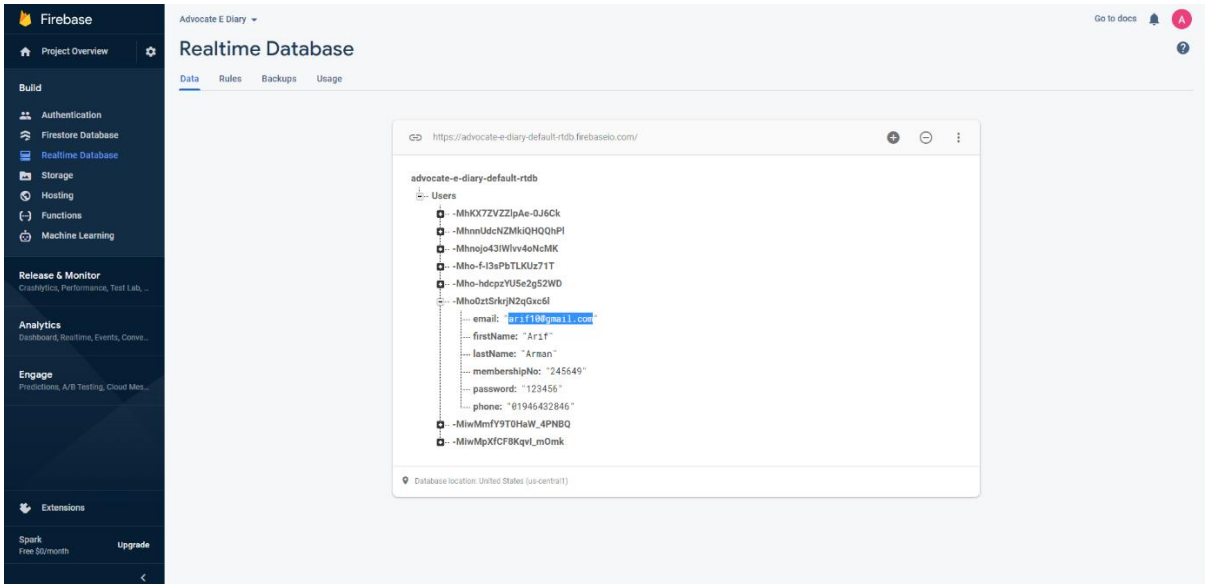

Figure 4.13: Back-End Design

Here are the firebase information and one of the backend designs of a feature of the app.

Here is a visual overview of how the back end is designed and how every component and feature is connected.

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The following figure 4.14 shows the back connections among the features.

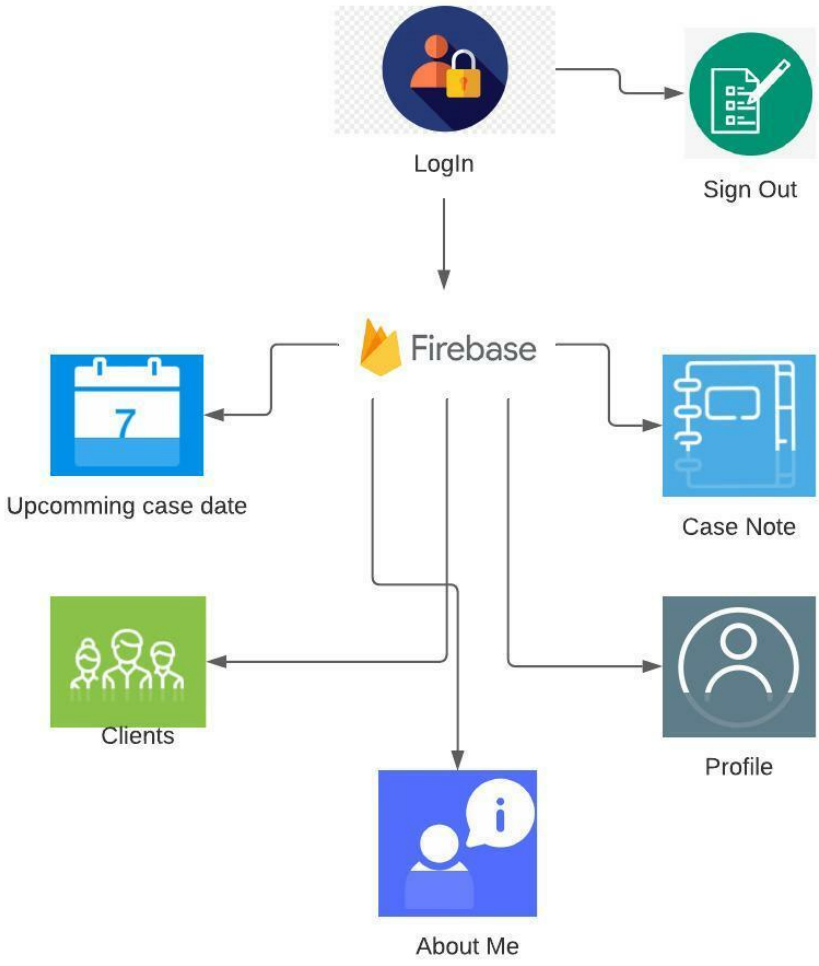

Figure 4.14: Back-End Connections

After logging in, the user sees the 5 menus in this application. Upcoming case date, case note, client's information. Upcoming case advocate can easily recognize their case information and case date. Case note has a new case add system and gathers the case date for all of them in this system. Clients are every client's information system. And profile information is your profile update system. About me is the information who will be created this software and that's the information will be provided.

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4.3 Interaction Design and User Experience

To create a good system or an application, a solid interaction design, good content and good visual design/ User Interface are a must. An interaction design is simply the components that are interacted with, in the system, and user experience is the overall experience of the user after or during the usage of the system or application.

- **Interaction design**

Our application is a full user interactive system, where the users can interact with a lot of components like:

- ❖ The upcoming case list is the feature is where the users get their case information and case date. In this feature, there will be case data and this case date will be serial wise so that easily advocate know that their case.
- ❖ Case Note is the feature that can help to create a case and case list also and the new date of the case. A new case to create has to button one is Accuser information and another one is accused information and also the case no and case description.
- ❖ Clients' information is the feature is helping the advocate to know all the clients he was connected to. This feature will be helped all client's number and their address also.
- ❖ The profile feature is all about your personal information. You can edit them also edit your number, name, email. You can update your profile picture in this application.
- ❖ The language change feature will help all of the users. Users can easily understand their work and their data also in this language system. We have added two languages to this system.

1. Bangla
2. English

- **User Experience (UX) Design**

The user experience of our app is promising as it is effective, fast, and enjoyable to use. And in times of emergency, it is capable of performing its tasks efficiently. A good UX design contains both good interaction design and a good user interface. Our application has a great deal of user interaction in every feature and the user interface is also good to look at. The update date of the case and case information is the best feature of this application. Also, the case list will be serial wise into the case date it is easy to recognize the advocate. And the language feature will

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be helping all kinds of advocates to knowledge their case and client's information also. So, overall the user experience design of the app is easy to understand, looks good visually, and is interactive with a good user interface.

4.4 Implementation Requirements

Each system or application has some requirements to execute properly and give a better, quick, and effective performance. Our application also requires some components to execute.
To implement the application these are the following requirements:

- Coding Knowledge in Java.
- Android Studio efficiency
- Database Knowledge
- CSS for color, padding, letter, widths, and other decorative purposes.
- A laptop or desktop capable enough to run Android studio.

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CHAPTER 5

Implementation and Testing

Implementing features into the app properly and then testing it afterward is one of the two most important tasks after building the app. Because implementing a database, front-end, back-end designs, etc. are very essential for building the app perfectly, and later testing whether the app runs smoothly or not, is also very crucial.

5.1 Implementation of Database

For our android mobile app called “Android Health Assistant”, we have used the real-time database from “Firebase”. Which is used to store our app data like, “Ambulance Information”, “Medicine Shop Information”, “Blood Donor Information”, “Contact Tracing” and also all the information about every user. And the “Firebase” also sends OTP codes to ensure safe and secure login to any user. Therefore our app is largely dependent on the database. And using the real-time database from “Firebase” helped us a lot to improve, update and grow our app. Also, this database management helped to focus more on the developing area of the app. Now, in terms of implementing the real-time database to our mobile app wasn’t that hard as firebase is a very easy-to-use tool that connects almost instantly to the app and manages every data-related aspect of the app. We have used the “Android Studio” IDE for building our app and a direct connection can be made easily between “Android Studio” and “Firebase”.

The following figure 5.1 shows the android studio and the firebase connection.

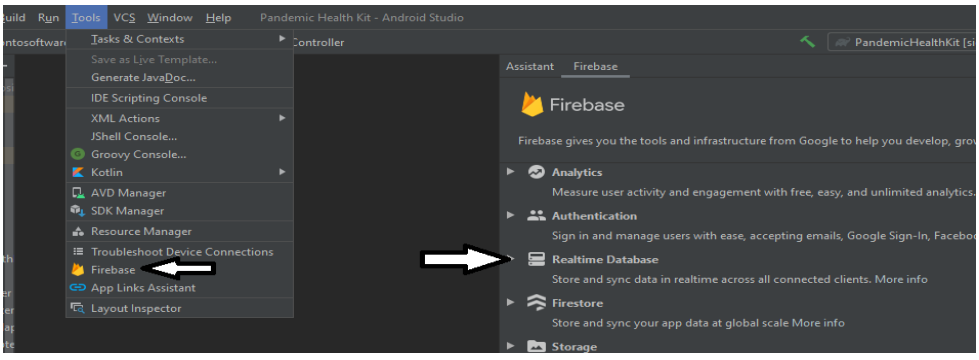

Figure 5.1: Android Studio and Firebase Connection

The following figure 5.2 shows the firebase control area.

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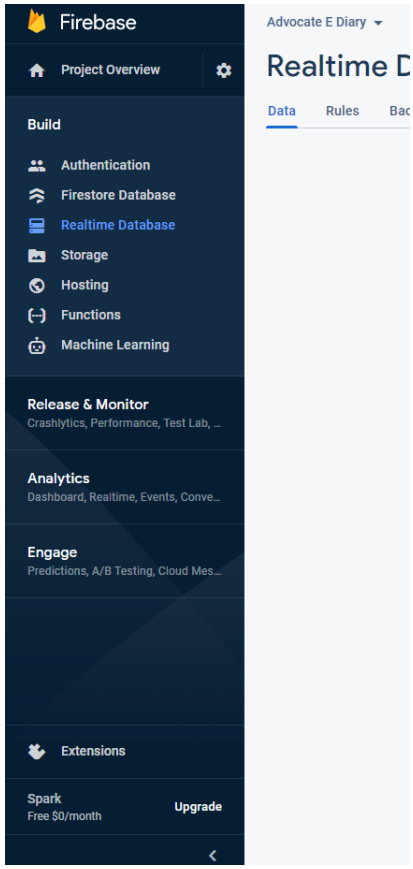

Figure 5.2: Firebase Control Area

The “Tools” bar in the android studio has the Firebase option and then all we have to do is click “Realtime Database” and then establish a connection between the real-time database and the app. And after that, the data should be inserted into the database and it will automatically be saved and showcased in the app. And managing the data in Firebase's real-time database is very easy because any kind of data entry and data removal is instantly shown in the app.

5.2 Implementation of Front-end Design

For building the application we first had to design a front-end of our application and after designing the app it was time to design the GUI of the app using Android Studio. And we have used a lot of android studio tools to design different areas of different features of the app. The app contains: -

- Splash Screen
- Slider

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- Menu Bar
- Main Content Area

The menu bar contains – “Upcoming Case Date”, “Case Note”,” clients”,” profile”, “About Me”.

Now in terms of implementing these designs, we coded in the “.XML” file for each feature of the app.

And there were also other tools like buttons, radio buttons scroll view, list view, search view, edit texts, etc. used to design and implement the entire front end of our application.

5.3 Testing implementation

Advocate E diary has many more options. They are listed below –

- Case list serial wise
- New case adds
- Case date updated
- Case information
- Clients’ information
- Profile update
- Language change

We have tested all the options thoroughly. First, if the app opens smoothly then we will be on our log-in page then we need to register for the new id to go the further of the app to sign up. Then we need to log in to email and password this was registration email and password. And we can see where all the options are. In the dashboard section there 5 buttons. First Upcoming case date in this option there are case list in the date wise. We can click the case and go throw the case details also. The next one is the case Note is the new case added system. We can add the case to the accuser and accuse information also and the case number and case information. The third one is the client’s information. This one helps the advocate to the clients name their case and their phone number also. Also, we have the profile details system we can update our profile name, number, pictures, etc. The last of the list

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is the about section this section has the creator's name, number, email, and picture also. Also, there is a language change option and we can log out easily for the navigation bar.

5.4 Test Result and Report

To start a specific program testing all the options is a must. We had to test every option after the program was done. So that the user finds the application smooth and user-friendly. Testing was done with the testing algorithm with every possible use case.

Serial. no	Test input	Expected outcome	Actual outcome	Result
1.1	Show the application	Show the login page	Get the application started	Alright
1.2	To log in give Name, number, email, and password	Log in or sign up completed	Successfully logged in	pass
2.0	Click the Case Note	Add the new case information	Result depending on the report	pass
3.0	Click Contact List	Depending on the case of date	All the case information	pass
4.0	Click Upcoming case list	Find out all cases serial wise in date	Shows the case information	pass
5.0	Click the update case date	Depending on the new case of date give the judge	Successfully showed	pass
6.0	Click clients	Find all the client's information	Successfully showed	pass

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7.0	Click Profile	Profile information and the update system	Update profile data is successful	pass
8.1	Click on the sidebar menu	Show the list of menus	List shows	pass
8.2	Click on Language	Show the 2 languages	List shows	pass
8.3	Click log out	Log out the user	Successfully logged out	pass

Table 5.1: Test results and Outcome Comparison Table.

The above table shows various tests and their expected outcome as opposed to the expected outcome. There are ten test cases with their expected outcome and the actual outcome.

The test cases consist of – a login test to see if the registration process is working. Then there is the dashboard section with some of the options in this app. Then we can add information about the case and also, we can also update our case date. Then we can also see the case date into the serial wise. Also, the client's information is in the client's section. After there is the profile update system. And the language change system. And finally, there is a logout button in the navigation bar to is if the user can log out successfully.

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CHAPTER 6

Impact on Society, Environment & Sustainability

6.1 Impact on Society

Applications have accelerated communication in today's society by transforming it from ancient methods. That is also true of our Advocate E-Diary application. Everyone, including advocates, attorneys, lawyers, victims, and other are a member of this society. So, when an app is released to do activities centered on these individuals, it influences the whole society. So, when an advocate uses our app to prioritize and organize and maintain a task list can assist you in planning your activities and ensuring that your workload is adequately organized, record dates and times, and make appointments, it is clear that this app has a significant impact on his thinking and lifestyle. As a result, we can say this app has an impact on our society as a whole.

6.2 Impact on Environment

The app we created has no substantial environmental effect. This app cannot change the environment, nor pollute the environment, and will not raise environmental consciousness whatsoever. In other words, there isn't a single feature in this app that has anything to do with the environment. So, we can say, it does not have any kind of impact on the environment.

6.3 Ethical Aspects

While developing this app, I had to consider ethical considerations and ensure that there were no security flaws or loopholes. I tried my best to not follow any unethical patterns that may mislead users into providing personal information. I've also made sure that the app does not have access to the user's call list, contacts, camera, gallery, or any kind of storage files, and that it doesn't ask for permission to do so. I attempted to keep the app as simple as possible so that it doesn't deceive the user into dealing with any sensitive or vulnerable topic by clicking any app button. I took the most modern security and privacy precautions possible to ensure that data is stored in an end-to-end encrypted way, thus ensuring no chance of data loss possible through this app. So, the app remains user-friendly and easy to use with excellent security.

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6.4 Sustainability Plan

I needed to make sure the app was sustainable when building it. So, I attempted to build it futureproof so that it may continue to provide its services shortly while also maintaining its capacity to produce desirable results over time. As. crime is continually happening in this world, and advocates are always working to bring the right justice to this society, so there is always a need for an app like this. It's not like this is a one-time occurrence where the necessity for this app vanishes in a single glance. We will continue to fight to ensure our justice, and this app will continue to provide services to advocates even in the future. But, as time passes, the need for this app will persist, but expectations may shift. To combat this, I intend to create a scalable design. Users can provide feedback, which I can collect and use to make changes to the functionality if necessary. To ensure that my app can meet current demands, I aim to release relevant and beneficial updates regularly.

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CHAPTER 7

Conclusion and Future Scope

7.1 Discussion and Conclusion

We aimed to make something simple and user-friendly app to help any advocate to get their diary. This e-diary can easily help advocate an easy-to-use interface app. The platform is developed for android phones. Also, the app does not require any net connection except for some features. Some more features will be helpful for a user in regular time. Updated case date and date-wise organized case list are very helpful to the advocate. Also, it will be helped to updated your case information. And the language option will be helping every advocate can easily access their account and data also. We tried to use java's framework front-end task and also for the backend we tried many java libraries. The Advocate E-Diary is a helpful platform that will make the advocate's life easy and comfortable.

7.2 Scope for Further Developments

We want to continue developing the app in the future. We would like to improve the app because it is very essential to patients. First and foremost, we want to make an online version of the program. Which is proving to be pretty difficult for us to do at the moment. However, the aim is to keep the web version up to date at the same time. We also intend to translate this to Bangla in the future edition, as the majority of users are elderly. We'd also like to include features such as a case reminder, an OTP system for opening the app, and the ability to publish the app to both the play store and the app store. Hopefully, these future scopes will assist those people who are looking to expand their knowledge in the most effective way possible.

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Reference

[1]. Diagrams, https://www.lucidchart.com/ last accessed on August 10, 2021.

[2]. Java Programming http://www.tutorialspoint.com last accessed on April 13, 2021.

[3]. General coding knowledge http://www.w3schools.com/ last accessed on August 10, 2021.

[4]. Data Management https://firebase.google.com/ last accessed on August 10, 2021.

[5]. Coding in Android studio with java https://www.youtube.com/watch?v=fis26HvvDII ,last accessed on July 20,2021.

[6]. "Android Architecture"
https://www.tutorialspoint.com/android/android_architecture.htm
last accessed on July 5, 2021.

[7]. Facts and Information https://www.wikipedia.org/ last accessed on August 10, 2021.

[8]. App development in Android Studio, last accessed on August 10,2021.

[9].Advocate E diary https://www.slideshare.net/advocate-diary/features-of-advocatedairy,last accessed on July 20,2021.

[10]. "Android Programming Cookbook"
https://enos.itcollege.ee/~jpoial/allalaadimised/reading/Android-Programming-Cookbook.pdf, last accessed on, September 28, 2020.

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