

Developing An Android Based Mobile Application

BY

Name: Asif Iqbal

ID: 172014009

A project report submitted in partial fulfillment of the requirements for the degree of
Bachelor of Science in
Computer Science and Engineering

Supervised By:

Bijal Paul

(Senior Lecturer)

Department of Computer Science and Engineering (CSE)



Computer Science and Engineering University of Liberal Arts Bangladesh
House 56, Road 4/A @ Satmosjid Road, Dhanmondi, Dhaka-1209, Bangladesh.

7thOctober, 2021

DECLARATION

This project report is submitted to the Computer Science and Engineering, University of Liberal Arts Bangladesh in partial fulfillment of the requirements for the degree of Bachelor of Science. So, I hereby, declare that this project report is based on the idea by me. Materials of work found by other researchers are mentioned by reference. This project report, neither in whole, nor in part, has been previously submitted for any degree.

Asif Iqbal

Asif Iqbal

172014009

Email Address: asif.iqbal.cse@ulab.edu.bd

CERTIFICATE OF APPROVAL

The project report entitled “Developing a subscription based ecommerce system” is submitted to the **Department of Computer Science and Engineering**, University of Liberal Arts Bangladesh, Dhaka in partial fulfillment of the requirements for the degree of Bachelor of Science.

Dated: 10th October 2021

Prof. Syed Akhter Hossain, PhD

Professor and Head

Department of Computer Science and Engineering

University of Liberal Arts Bangladesh

Signature & Date

Bijan Paul

(Senior Lecturer)

Department of Computer Science and Engineering

University of Liberal Arts Bangladesh

Signature & Date

DEDICATION

To my stunning guardians, who gave me perpetual love, trust, consistent consolation throughout the long term, and for their petitions.

To my tutors and companions for their understanding, backing, love, and for persevering through the high points and low points during the finish of this proposition.

This report is dedicated to them.

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my project supervisor, **Bijan Paul**, for giving me the opportunity to work along him in this project. I am highly indebted to him for his guidance and constant supervision as well as for providing necessary information regarding the project.

The Department of Computer Science & Engineering also remains as one of the key players as it has provided me with the opportunity to nurture my skills and develop myself. It goes without saying that the invaluable support I have received from the entire faculty and staff members of the department has immensely affected my undergraduate study course in the best way possible.

I would like to thank my family members for their kind cooperation and encouragement throughout the course of this project and also during the last 4 years of my undergraduate study. Without their love and care I would not have been able to complete this endeavor and for this I am extremely grateful to my parents.

Asif Iqbal

University Of Liberal Arts Bangladesh

Date: 7th October, 2021

ABSTRACT

Every object of nature maintains the balance of nature on its own whether it is human or snake or reptiles. Where doctors are busy saving people and different agencies are working to save reptiles, we ourselves are responsible for distorting them. Even during the aggression of this education we take many wrong steps. In this paper, I will highlight an Android application that will give us a little bit of accurate information and guidance.

In South Asian countries, people are constantly dying from snake bites. Bangladesh is second only to India in this mortality rate. Although there is an Android app with snake introduction in India, there is no such app in Bangladesh. There is no system where we can learn a lot about snakes, do's and don'ts or reptiles. This application has been named "Snakes of BD", here is a description of the snakes found in Bangladesh so far and what to do when you see a snake or snake bite. The name and mobile number of the nearest hospital is going to be collected from its location for special needs. Rescuers are being contacted. In this case it is going to be used as a direct mobile call or text message medium.

Key Words: Snake App, Snake App BD, Rescuers, Identify Snakes, Emergency needs

List of Figures

Fig 1: Project management	14
Fig 2: Snake Pedia.....	14
Fig 3: Snakes of Sri Lanka	15
Fig 4: Snake Hub.....	18
Fig 5: Use Case Diagram	22
Fig 6: Agile methodology.....	23
Fig 7: Activity Diagram	25
Fig 8: ER diagram.....	26
Fig 9: UX.....	27
Fig 10: UX.....	28
Fig 11: User Authentication	30
Fig 12: Image Storage.....	31
Fig 13 Users	31
Fig 14: All posts.....	32
Fig 15: My Post	33
Fig 16: Home Activity with Navigation Bar	34
Fig 17: Venom Types	35
Fig 18: Anti venoms	36
Fig 19: Snake lists	37
Fig 20: Pop up window	38
Fig 21: Rescuers List.....	38

Fig 22, 23, 24: What should do?	40
Fig 25: Identify by Image	41
Fig 26, 27: Identify by Symptoms.....	42
Fig 28: Login Activity	43
Fig 29: Sign Up Activity	44
Fig 30: Profile Activity	45
Fig 31: Update Profile.....	46
Fig 32: All Post Activity.....	47
Fig 33: My Post Activity	48
Fig 34: Add Post Activity	49
Fig 35: Find Nearby Hospital	50

List of Tables

Table1: Unit testing.....	19
----------------------------------	-----------

TABLE OF CONTENT

CHAPTER	TITLE	PAGE
	ACKNOWLEDGEMENT	iv
	ABSTRACT	Error! Bookmark not defined.
	LIST OF FIGURES	Error! Bookmark not defined.
	LIST OF TABLES	vii
	 Chapter 1: Introduction	 11-14
1.1	Introduction	11
1.2	Motivation	11
1.3	Objectives	12
1.4	Expected Outcomes	12
1.5	Project Management and Finance	13
1.6	Report Layout	14
	 Chapter 2: Background	 15-18
2.1	Related Works	15
2.2	Comparative Analysis	18
2.3	Scope of the Problem	18

2.4 Challenges	18
Chapter 3: Requirement Specification	20-23
3.1 Business Process Modeling	20
3.2 Requirement Collection and Analysis	20
3.3 Use Case Modeling and Description	22
3.5 Design Requirement	23
Chapter 4: Design Specification	24-29
4.1 Methodology	24
4.2 Front-end Design	25
4.3 Back-end Design	26
4.4 Interaction Design and User Experience (UX)	27
4.5 Implementation Requirements	29
Chapter 5: Implementation and Testing	30-52
5.1 Implementation of Database	30
5.2 Implementation of Front-end Design	34
5.3 Testing Implementation	51
5.4 Test Results and Reports	51

Chapter 6: Impact on Society, Environment and Sustainability	53-55
6.1 Impact on Society	53
6.2 Impact on Environment	53
6.3 Ethical Aspects	54
6.4 Sustainability Plan	54
 Chapter 7: Conclusion and Future Scope	 55-
7.1 Discussion and Conclusion	55
7.2 Scope for Further Developments	56
References	57

Chapter 1: Introduction

1.1 Introduction

There are about 107 species of snakes found in Bangladesh, both on land and at sea. Among them 25 species of snakes are poisonous. 27 species of snakes are mildly venomous. And the rest of the species of snakes are non-venomous. To know about the identity of these snakes, types of venom, effects of venom, warnings, one has to take help of various websites or Google. In that case internet connection is required.

But if these things are brought in the palm of your hand through an application, it becomes quite convenient. In this paper you will learn about an Android application, "Snakes of BD" where all the information about these snakes can be found very easily without internet. But you will need internet to get some benefits.

1.2 Motivation

I had the idea of making this project on the basis of the UN Report 2018, according to that report, almost 6041 people died by snake in Bangladesh every year. 100000+ people are bitten by snake every year in Bangladesh. 95% people who has been bitten by venomous snake or carrying venom in his body survived but who doesn't go to hospital, they die. As I have said previously that every objects is important for our environment. People in Bangladesh don't have enough knowledge about snake's importance. That's why they kill it and hamper the eco-system. One of the organizations named Deep Ecology and Snake Rescue

Organization which works to rescue snakes from human habitat; As long as they help people from snakes. It is not a minor case in Bangladesh but we don't have any kind of App on it. So making an App which helps others is my main purpose.

1.3 Objectives

Many such apps are built in our country but the number of users is very low. The main reason behind this is that the apps are not user friendly. My goal is to create a user friendly useable app that is useful for all types of users. There are many people like me who are interested in snakes. This app will serve as their friend who is interested to know about snake venom. People will learn about the effects of snake venom. Snakes can recognize by looking at different 'Symptoms'. Awareness of when snakes enter the home, do not panic and make contact with rescuers. Many times we can't find the name or mobile number of the nearest hospital but also to find the mobile number of the nearest hospital from your own location. If we can get the right knowledge about snakes, then we can reduce the death rate from snake bites every year.

1.4 Expected Outcomes

You need internet to use search engine to know the information of snake. But most of the benefits can be found here without internet. Even if someone is bitten by a snake, they will find a snake anti-venom in a hospital and find out about its price. Many workshops are organized in rural areas to impart knowledge about snakes; the amount of workshops will be reduced if this app is available.

1.5 Project Management and Finance

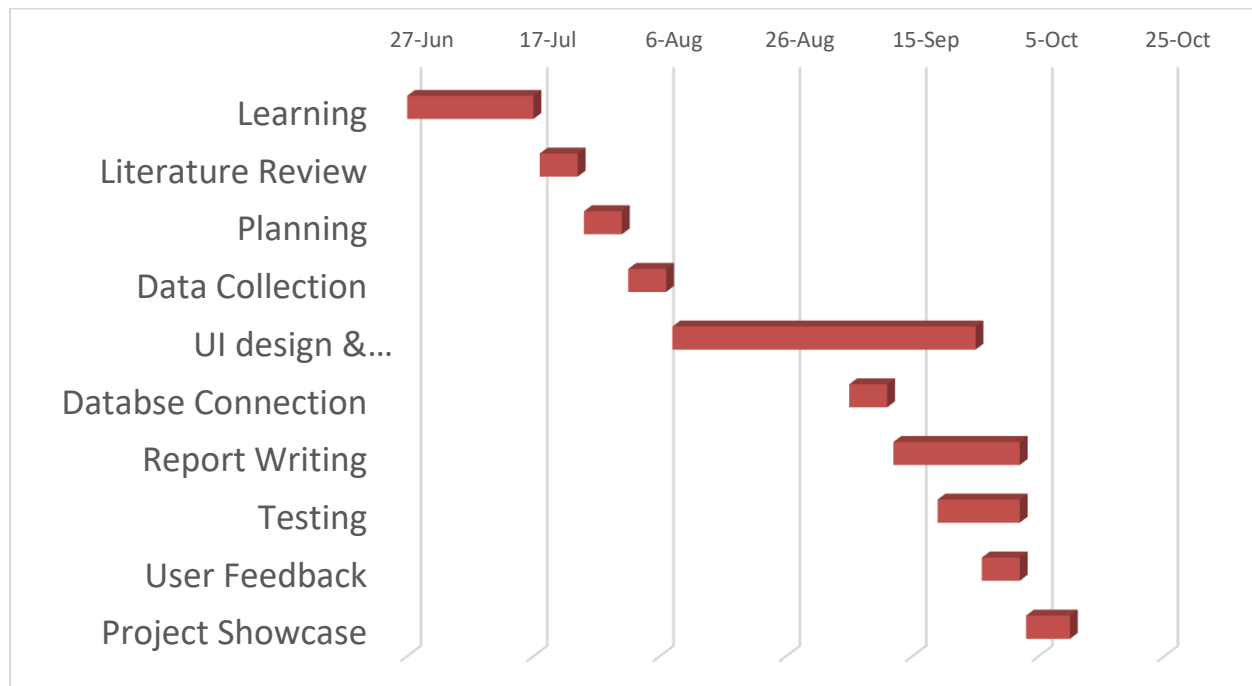


Figure: 1

When I have decided to work on making this project, I started learning JAVA so that using Android studio might be easier. It took me 20 days from 27th of June. I had sought for some literature but couldn't find anything but some apps from India and Australia based on their regional snake. Then I started planning of this project by starting drawing wireframe. I need all the information of snake and what I need to use to make this app. After all these, I started implementing this from 6th August. Apart from implementation, I started writing report from 14th September. This project was completely done on 4th of October. I have checked my app and shared the APK with my friend to get review of it.

1.6Report Layout

Project layout of this paper is given below:

Chapter-2: Here I am going to introduce why I am choosing this project and why I want to develop this project and some similar work what is already existed and what will be the impact of our country and also what will be the best for our country.

Chapter-3: In this section I am going to tell about why this app is really needed for our country and what people want from this app and what is the requirement of people from this app.

Chapter-4: Here I am going to show the total design of this App and also showing the design of data flowing of this system.

Chapter-5: Here I am going to show the project implementations and describe how it works

Chapter-6: Here I will elaborate about this app's ethics demands, environment impacts and sustainability's.

Chapter-7: In this chapter I am going to conclude my whole project works and I am going to explain some future plan of this project.

Chapter 2: Background

2.1 Related Works

There are 8 Apps in play store developed by Indian developer and only Sri-Lankan app from South Asia. There is no app in play-store from any Bangladeshi developer. Among them these are mostly rated app:

Snakepedia:

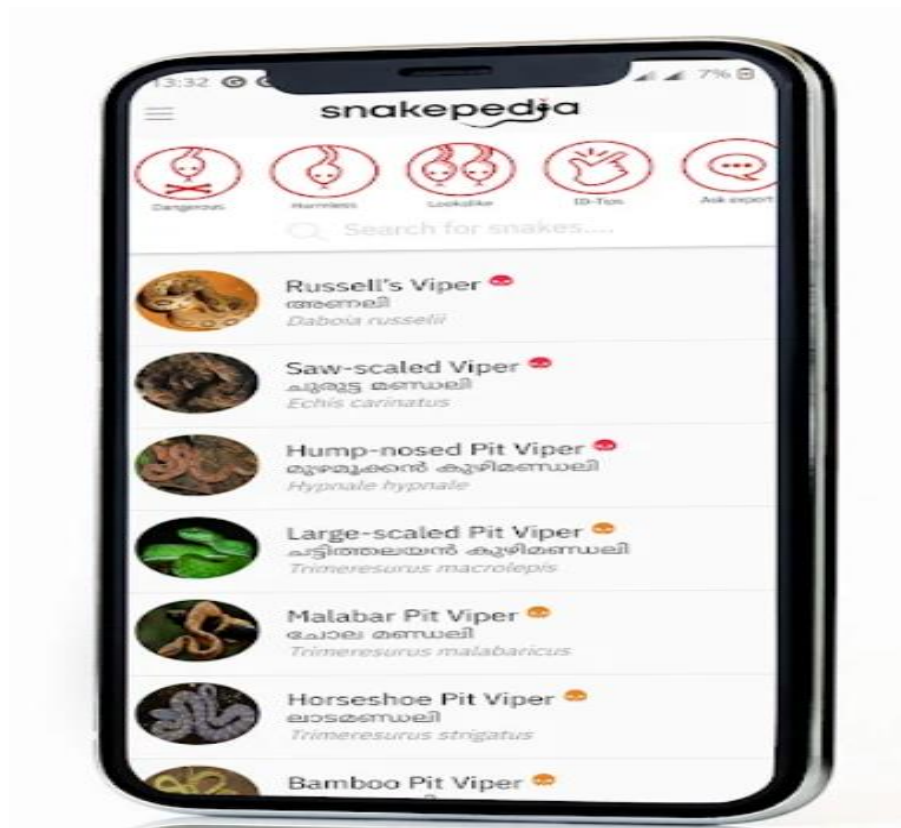


Figure: 2

Snakepedia is an android app developed by a company named “LeoSoftwares” located in Kerala, India. This app has all the details of snakes found in India. But not any kind of information of rescuers and user can only read about snake details.

Snakes of Sri Lanka:

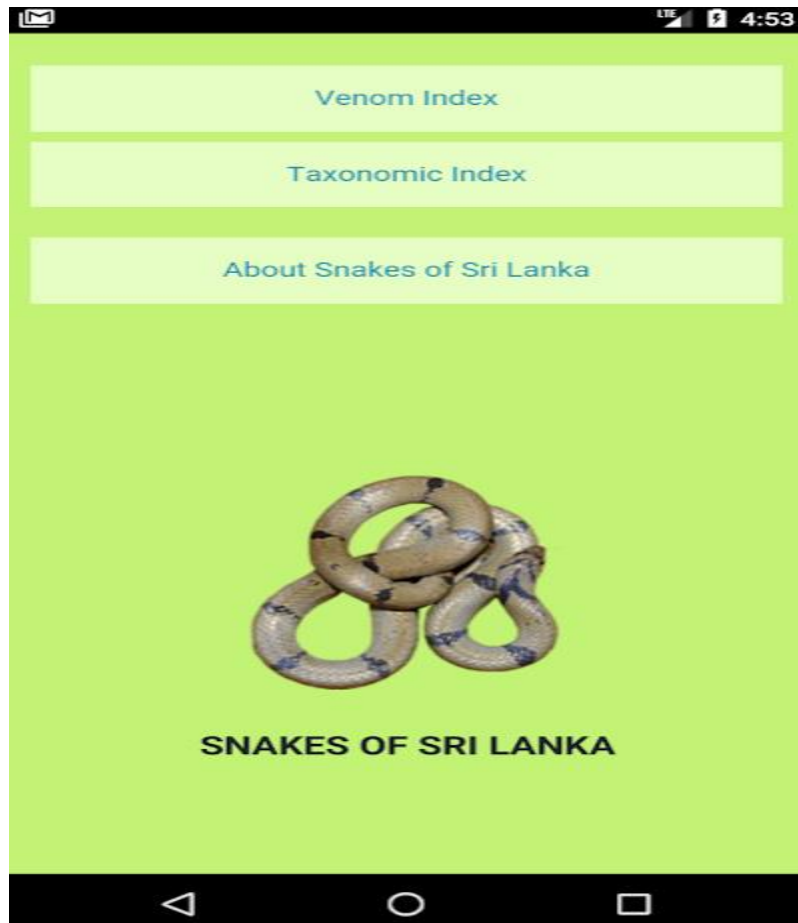


Figure: 3

This app is similar to the previous one. Even this app didn't mention which kind of venom a snake carries. There is only description of its body. How its venom effects on human body and how can we identify snake is not available there.

Snake Hub:

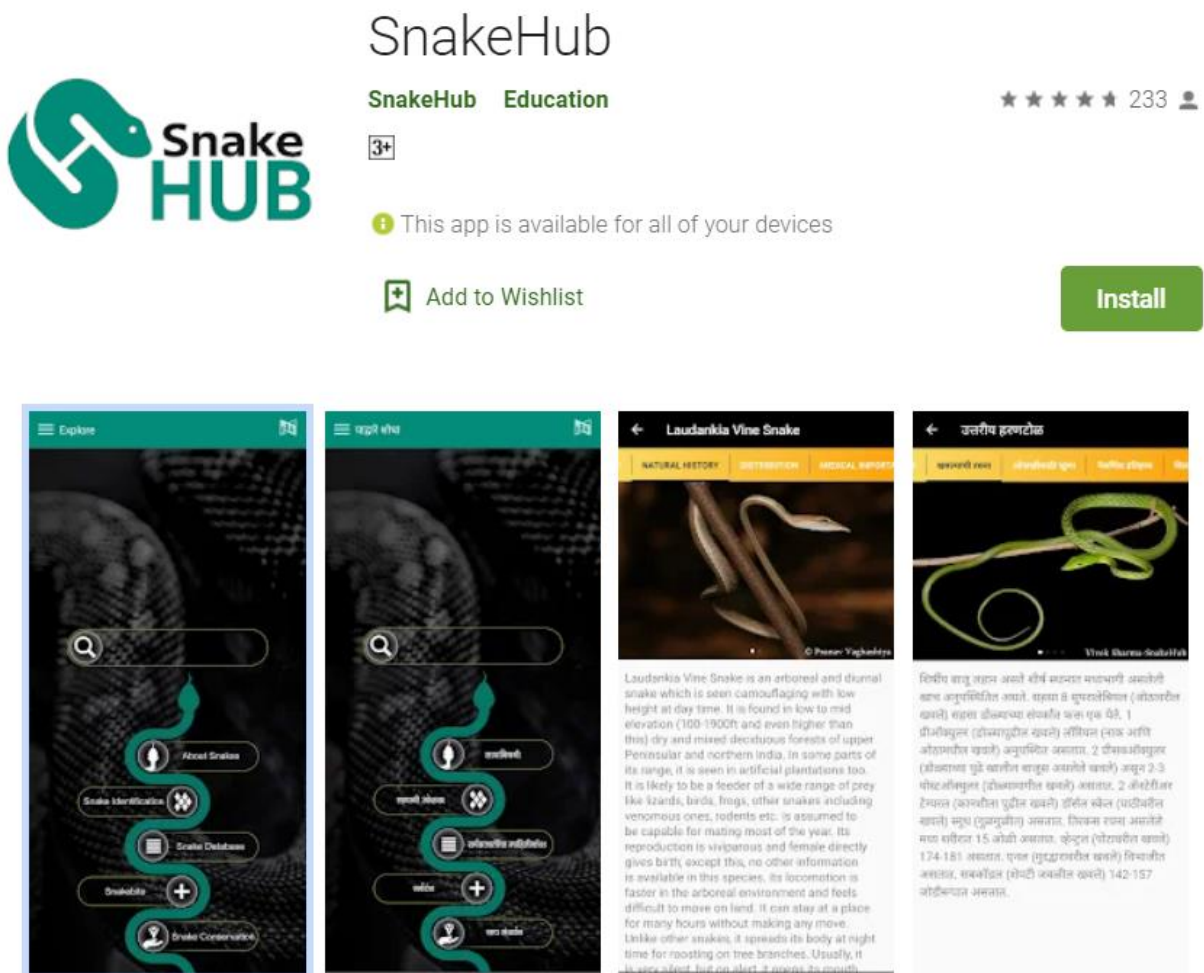


Figure: 4

This app is slightly better among these three apps. Along with the details, this app provides some hospital list where user can get hospital's contact number. But user can't get the hospital list from his own location. Developer has listed the hospital by region. This app doesn't have category wise snake details; as a user, it looks messed up.

2.2Comparative Analysis

As I have mentioned previously, there is no app from Bangladesh on Snakes. So there is nothing to compare with.

2.3Scope of the Problem

In Bangladesh, network coverage is not at satisfaction level. When user is unable to use internet but user needs to know about any snake, this app is prepared for this kind of situation. There is also a “QUIZ” feature which helps to identify snakes along with answering some questions.

2.4Challenges

The main challenges I have faced are finding a free API to search nearby hospital. It's easier to use Google Context but those are needed to be purchased. And Firebase ML kit is not free. I thought provided API can be used as free but wasn't. I have talked with some rescuers for their details who are engaged with some organizations to rescue snakes but they didn't provide. The reason is simple; they are not willing to share their details to anyone unless it is not well known. Google shows that 107 snakes are found in Bangladesh but there is no such a list of snakes. I had to gather those information and it was too much lengthy.

Chapter 3: Requirement Specification

3.1 Business Process Modeling

As I wanted to make it for social-welfare, so there is no business model set yet. My plan is to join with some organizations so that this app reach to the every people.

However, downloads can be a pile of my business model.

3.2 Requirement Collection and Analysis

According to DESRO, only 21% people from rural area are know about snake venom and what should do if anyone is bitten by a snake. 79% people go to ‘Ojhah’ for help but not hospital. So, thinking about those people, I tried to make a user friendly app so that if we can make awareness among them, they can easily use this app.

Registration: Users have to register because fulfil the registration users get a secure user profile.

Login: If any user has already registered, then user need to login to update his/her profile so that others user can identify them and get shareable information.

Profile: Profile is most important coz if anyone doesn’t set his profile with valid information, that account might be deleted by the developer.

Add post: Whenever anyone needs help, he/she can post here for seeking help.

My post: Here user can find what he/she already has posted he/she can delete his/her post or can mark any of his/her post as already get benefitted.

All Post: A user can see all the post from others user here.

Rescuers: If anyone needs help from rescuers, he/she can contact with rescuers from this section.

Hospital: This part is most important whenever one seeks for nearest hospital.

Snake Details: If a user want to know about any snake, this feature is required.

3.3 Use Case Modeling and Description

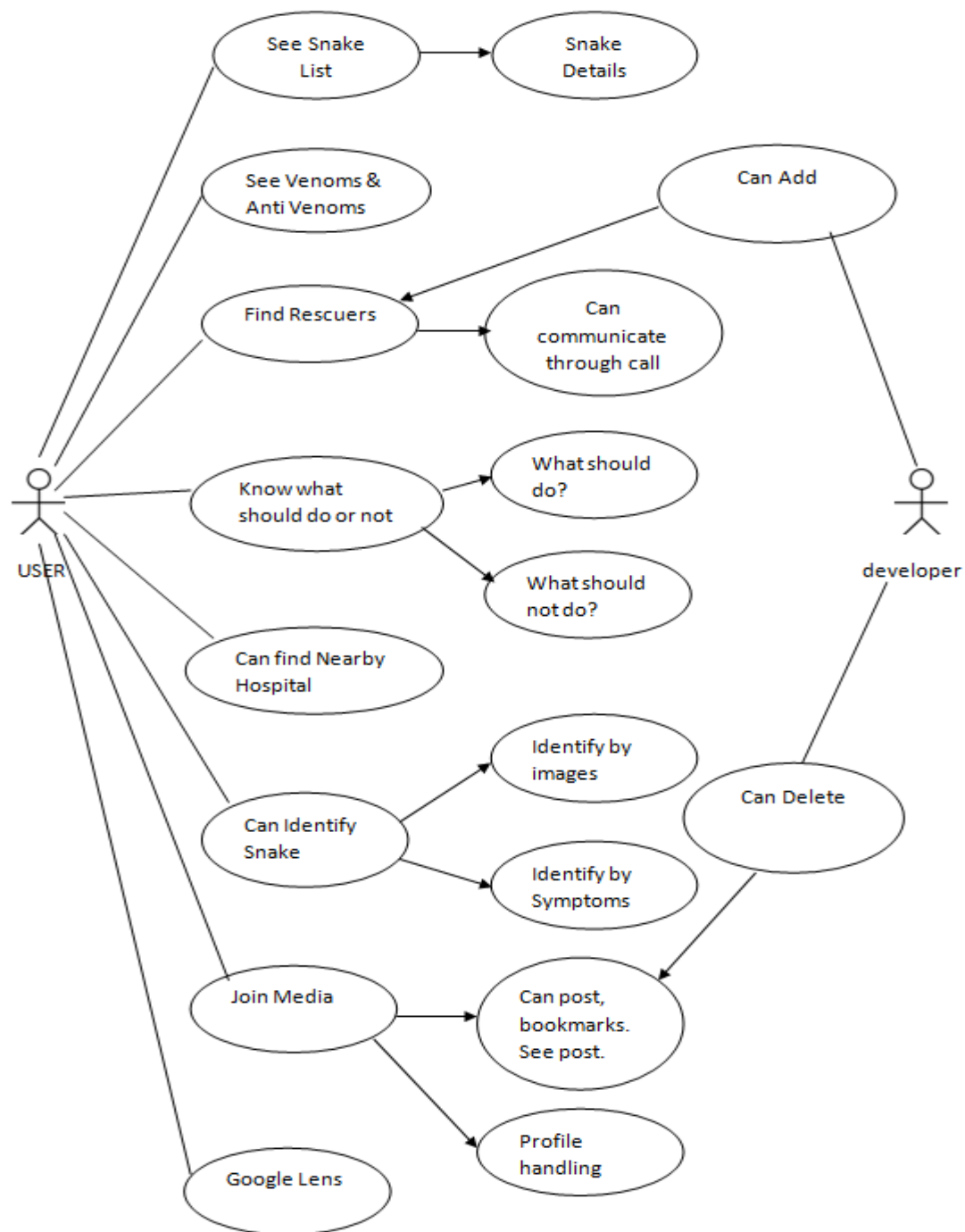


Figure: 5

A use case diagram (also known as a Unified Modeling Language (UML) diagram) is a graphical depiction of a system's actions and user responsibilities. This is a basic illustration of how a system user interacts with it.

Here a user can see snake list with details, see venoms and its effects on human, anti-venoms. User can find rescuers, nearest hospital and contact with them. User can know what should do if anyone is bitten by snake and what should not do. A user can identify snakes by its image or symptoms. For using Media part, user needs to register. If he registered successfully, he can login. Then he/she can add post or can see others post. And also can update his/her profile.

The programmer or developer can delete anyone's post which might seem offensive. He can also add rescuers.

3.5 Design Requirement

- Provide a login for user
- Provide a registration for users.
- Allow user to add post
- Allow user to delete his/her post
- Allow user to mark as benefitted of own post.
- Allow user device to use location

Chapter 4: Design Specification

4.1 Methodology



Figure: 6

The term "Agile methodology" refers to a practice that encourages continuous development and testing throughout the project's software development lifecycle. Unlike the Waterfall paradigm, both development and testing operations are contemporaneous under The Agile model of software testing.

- The first thing comes to my mind what kind of data I need.
- I had to gather data and analyze the data.

- How I am going to use data?
- I had to design and started developing.
- I have to use some testing tools for testing this app.
- I need to get feedback from some user who will use the app.

4.2 Front-end Design

Front end design is always important for any kind of apps or website. This shows how the data will be flown and how a user can proceed.

Activity Diagram:

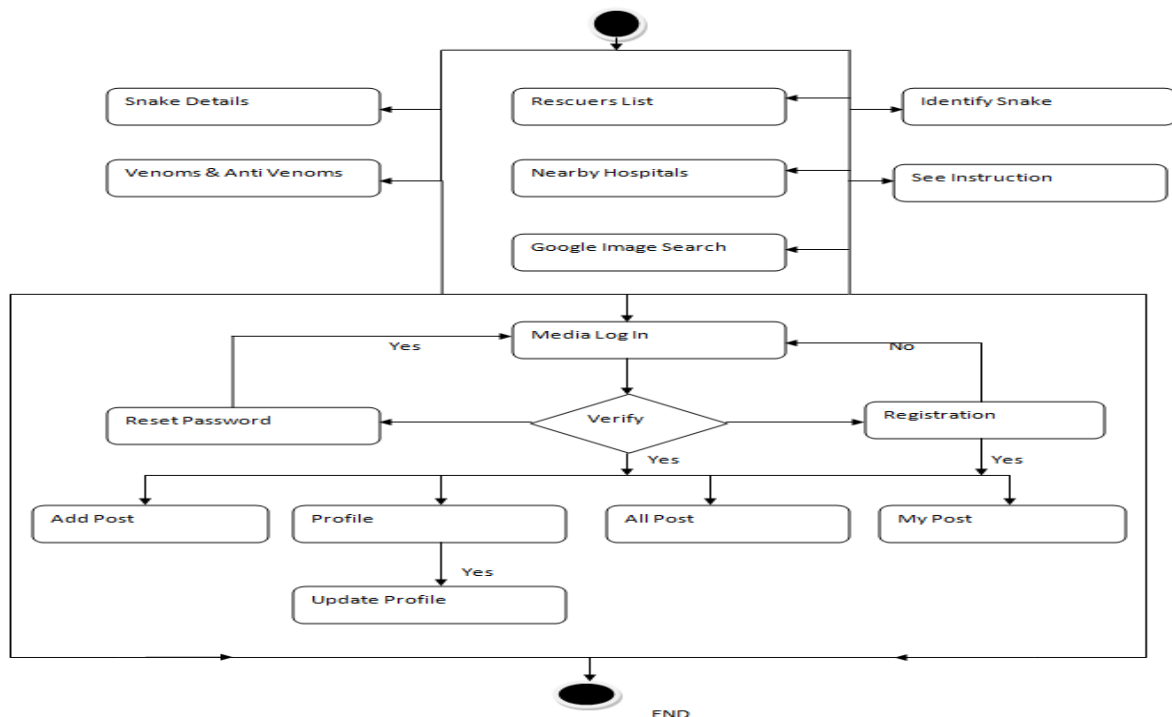


Figure: 7

Activity diagram is basically the flow of one step to another step of the project.

Here in this activity diagram represents the users' site data flow of the project. By this Activity Diagram, we can see that when user installed the app or run the app, user can use some features like Snake details where he can get all the details of snake, Venoms effect and available anti-venoms in Bangladesh, can call rescuers, can find nearby hospital from his location, but this feature requires internet connection. When user wants to post something, he/she needs to login if he/she already created an account. Otherwise he/she needs to sign up first. Then he/she can see all the post, add post, update his/her profile, and finally can logout or exit the app.

4.3 Back-end Design

Entity Relationship Diagram:

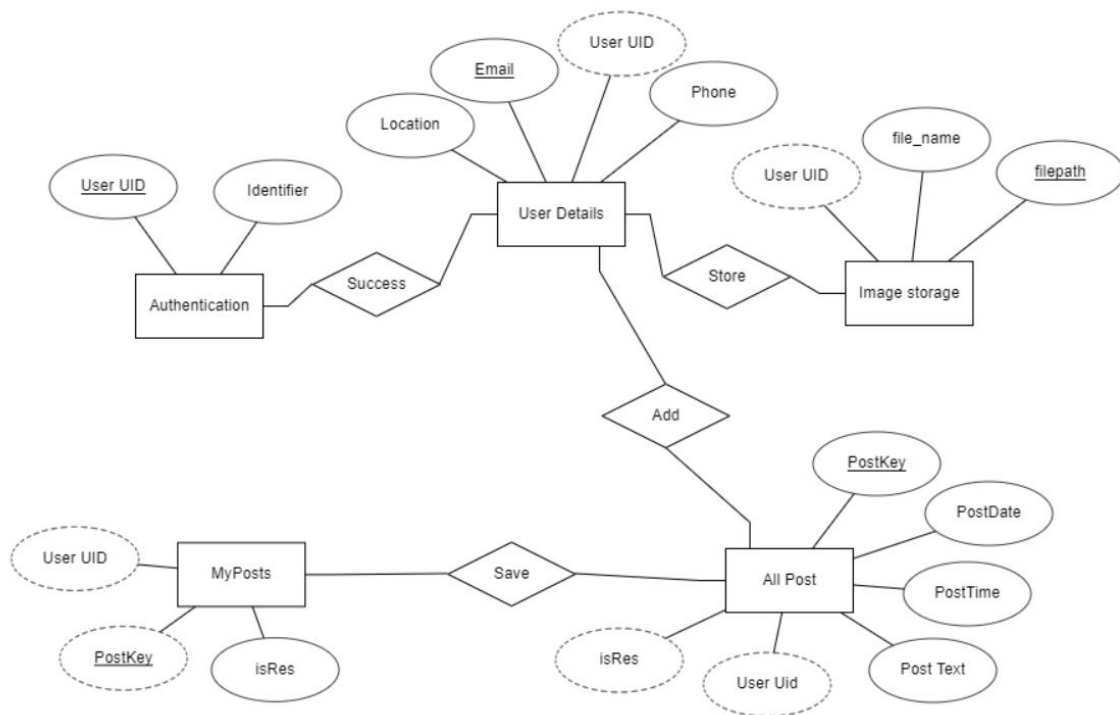


Figure: 8

An Entity Relationship (ER) Diagram is a type of flowchart that depicts the interactions between "entities" in a system.

In this project, I need to create 5 tables. Authentication to authenticate user is valid or not, User details to save information of a user, Image storage to upload image as profile picture, All Post to save all users post and My Posts to save one particular user's post.

4.4 Interaction Design and User Experience (UX)

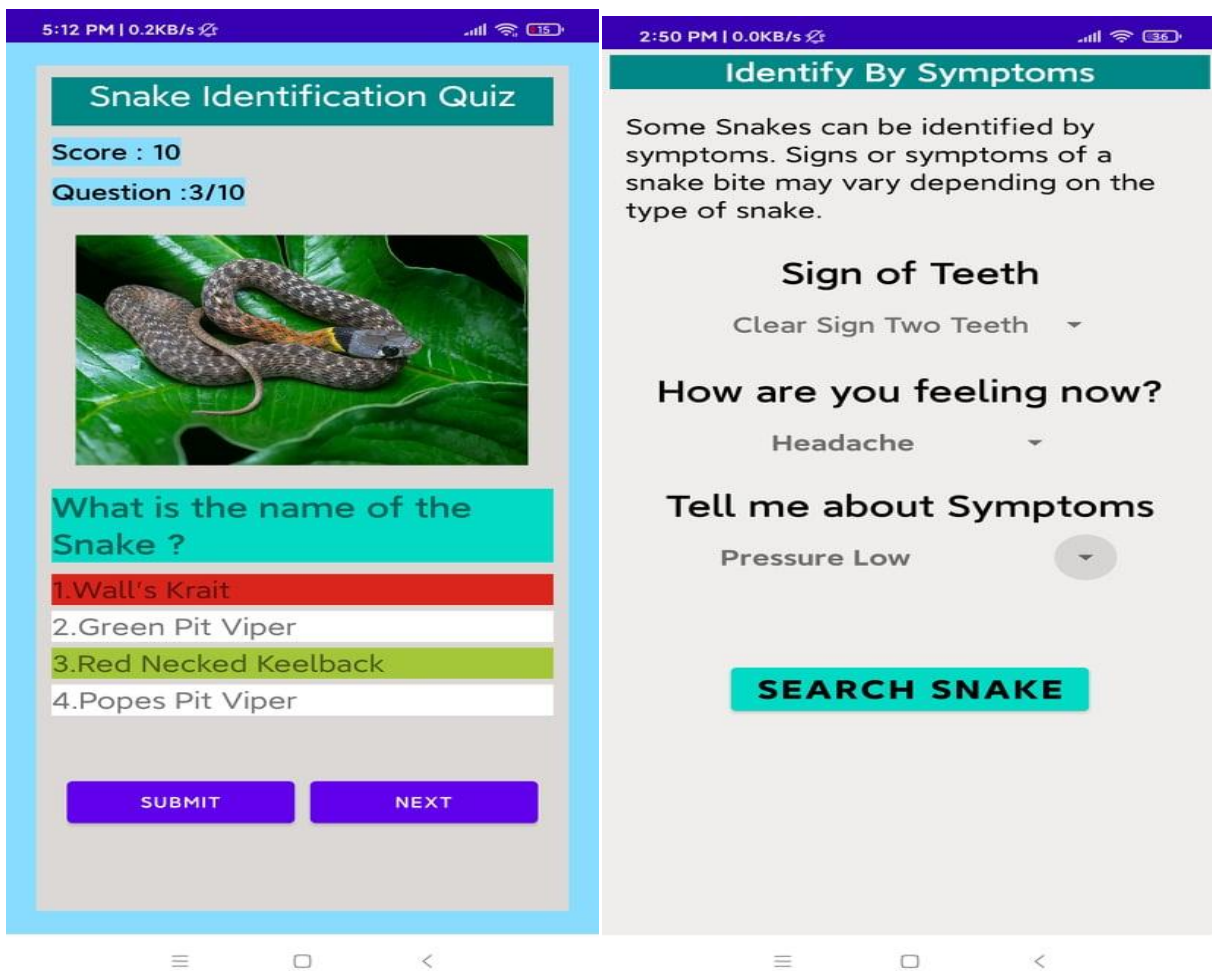


Figure: 9

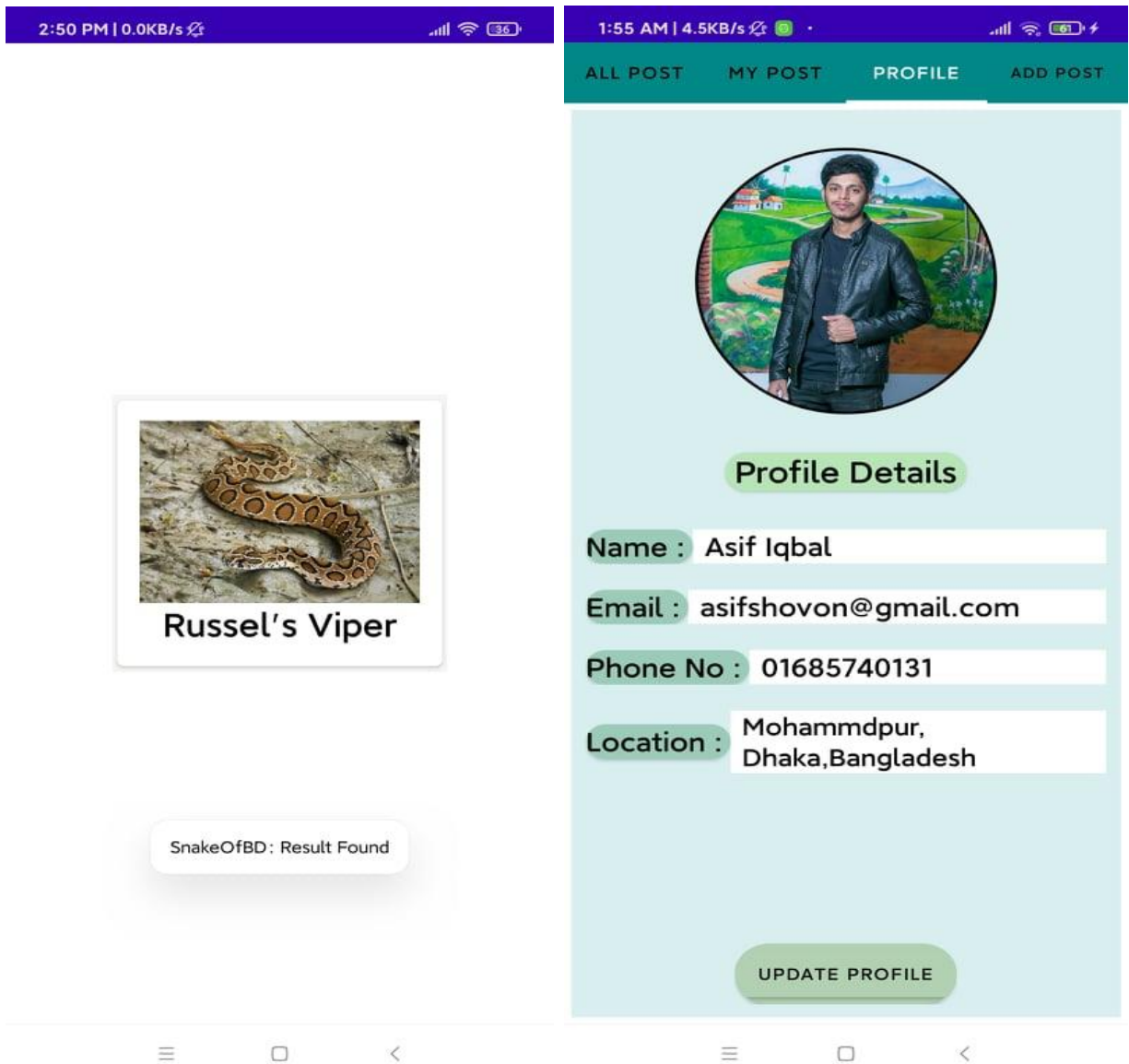


Figure: 10

4.5 Implementation Requirements

Below are the implementation requirements to develop:

Software Requirements:

- Operating System: Windows 8/10
- IDE: Android Studio
- Database: Firebase
- Front End: XML
- Back End: JAVA
- Device: Android device- 5.0 or higher

Hardware Requirements:

- Processor: Intel core i5
- Processor speed: 2.70 GHz
- RAM: 8 GB

Chapter 5: Implementation and Testing

5.1 Implementation of Database

Schema Table Names:

1. User Authentication (Firebase Authentication)
2. Image Storage (Firebase Storage)
3. My Posts (Firebase Real time Database)
4. All Posts (Firebase Real time Database)
5. Users (Firestore)

User Authentication:

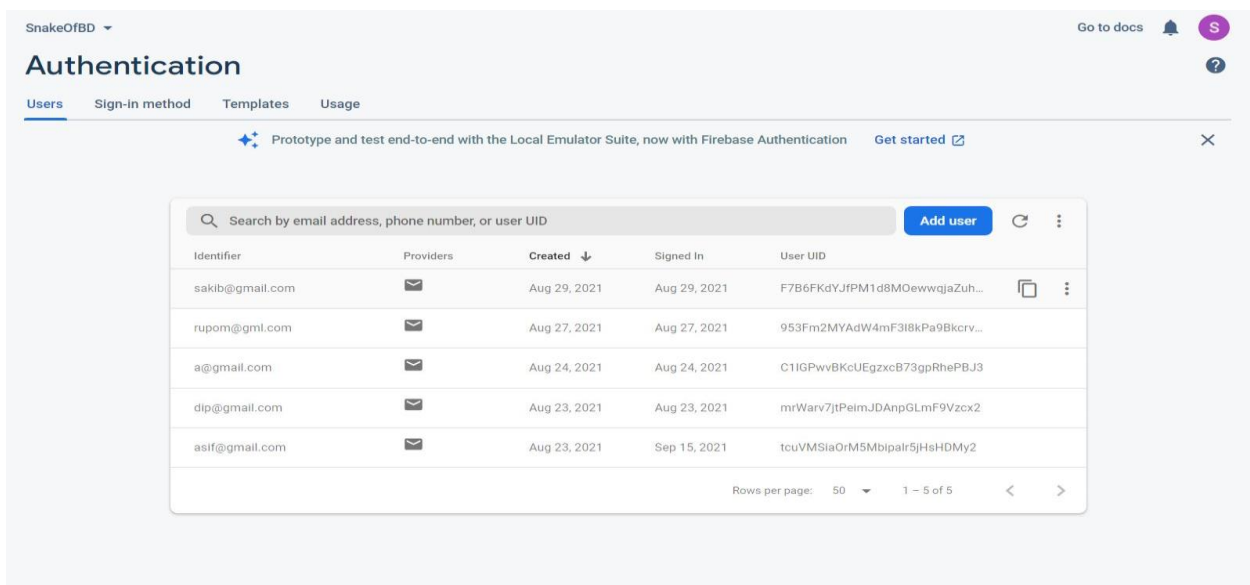


Figure: 11

Image Storage:

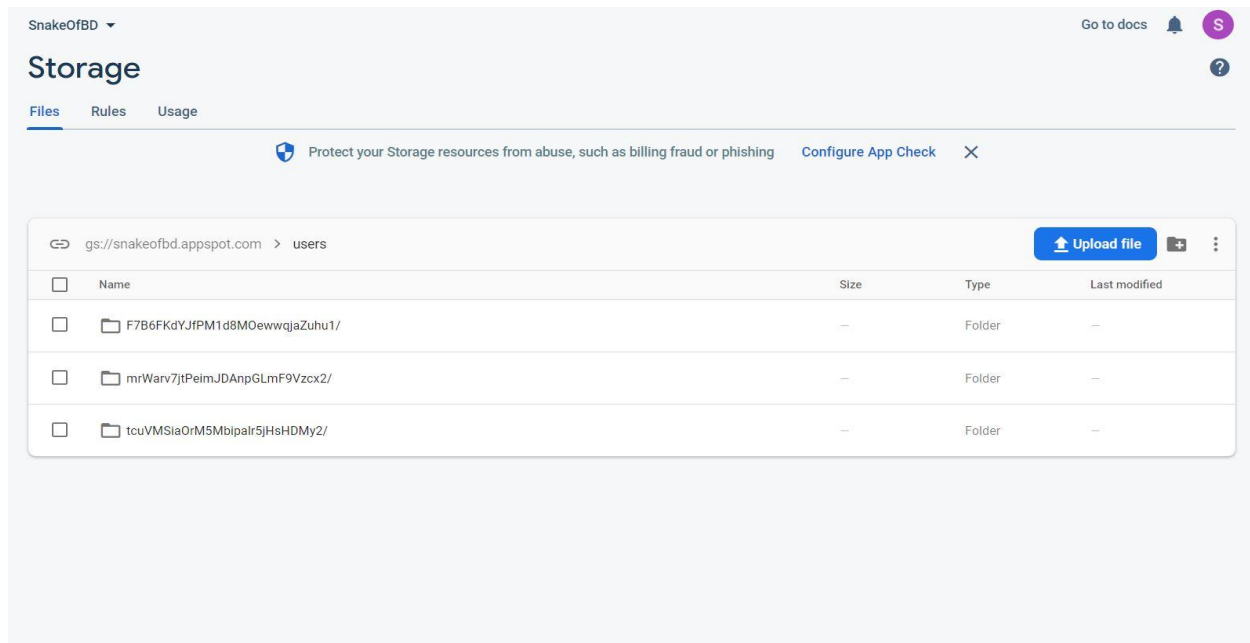


Figure: 12

Users:

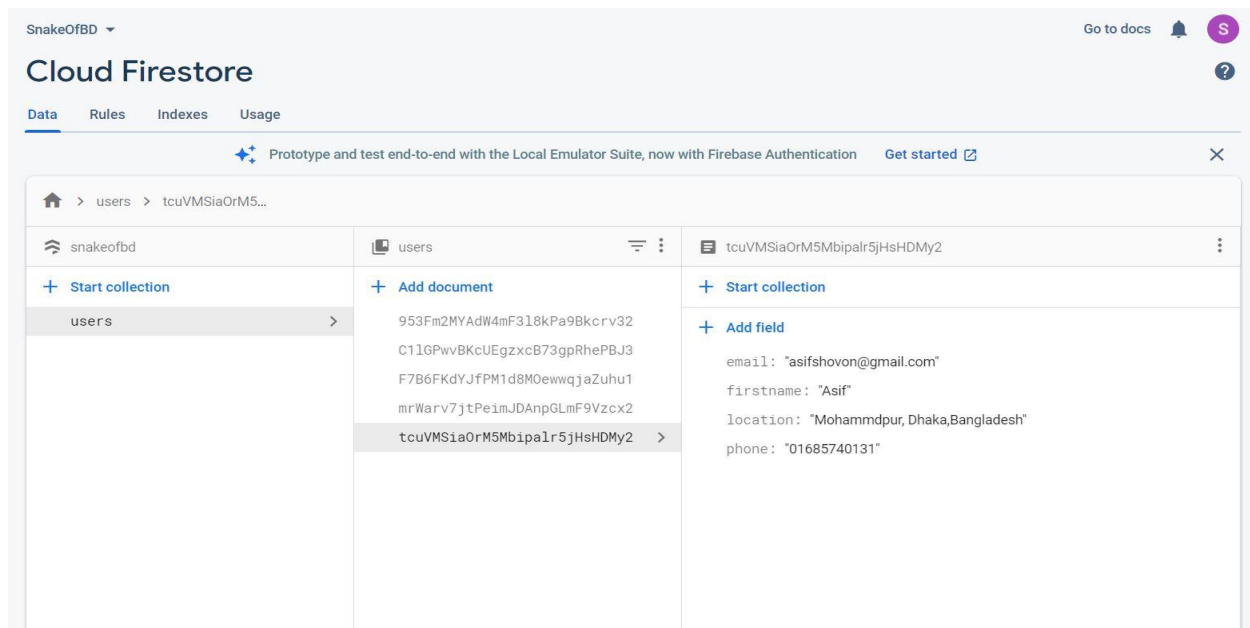


Figure: 13

All Posts:

AllPost

-Mkfa6d-zgzdScKD1PLP + ×

cont: "01685740131"

isRes: "2"

loc: "Mohammdpur, Dhaka, Bangladesh"

post: "Help me! \nThere's a snake in my backyard "

postKey: "-Mkfa6d-zgzdScKD1PLP"

postdate: "28/9/2021"

time: "02:49 PM"

timeStamp: -181424332

uemail: "asifshovon@gmail.com"

uname: "Asif Iqbal"

userid: "tcuVMSia0rM5Mbipalr5jHsHDMY2"

+ -MIM9bWcVkXg3QfZiA69

Figure: 14

My Posts:

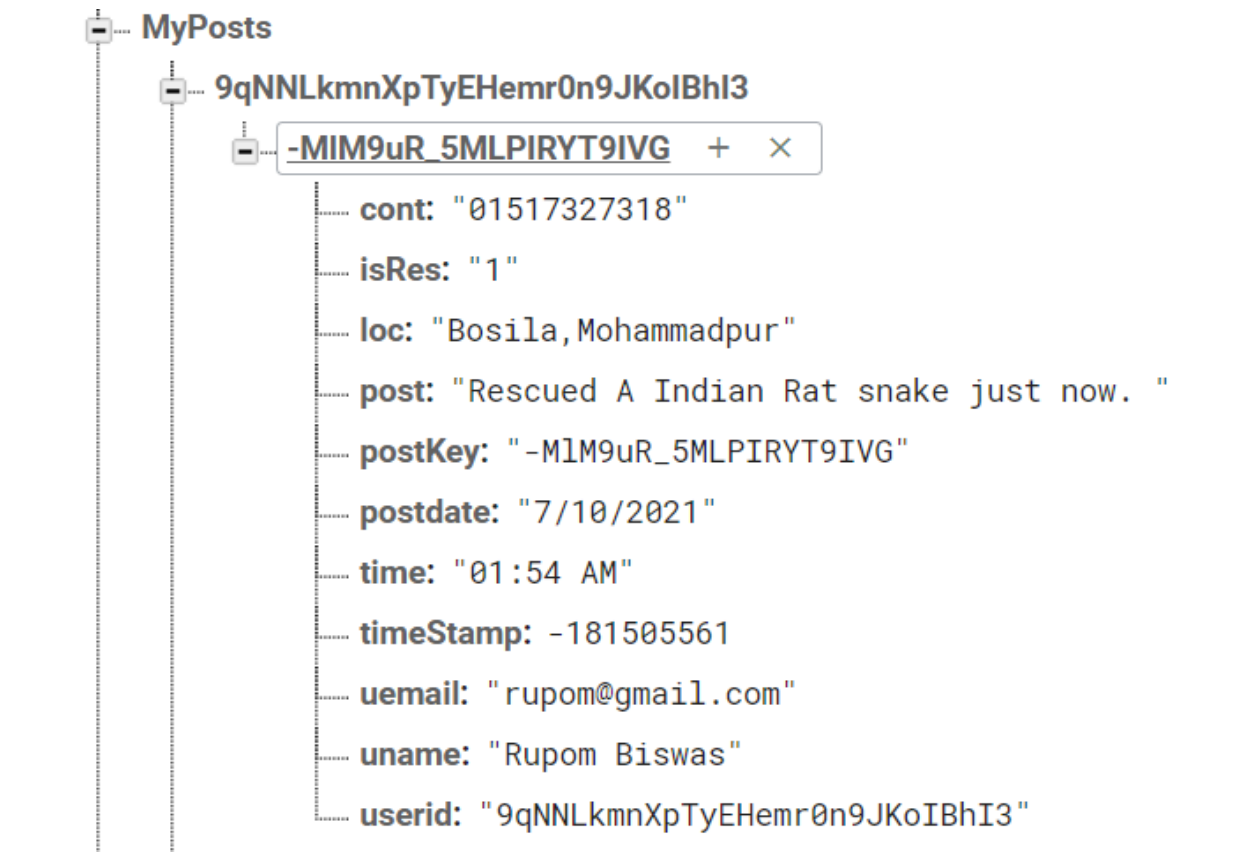


Figure: 15

5.2 Implementation of Front-end Design

Home Activity with Navigation Bar:

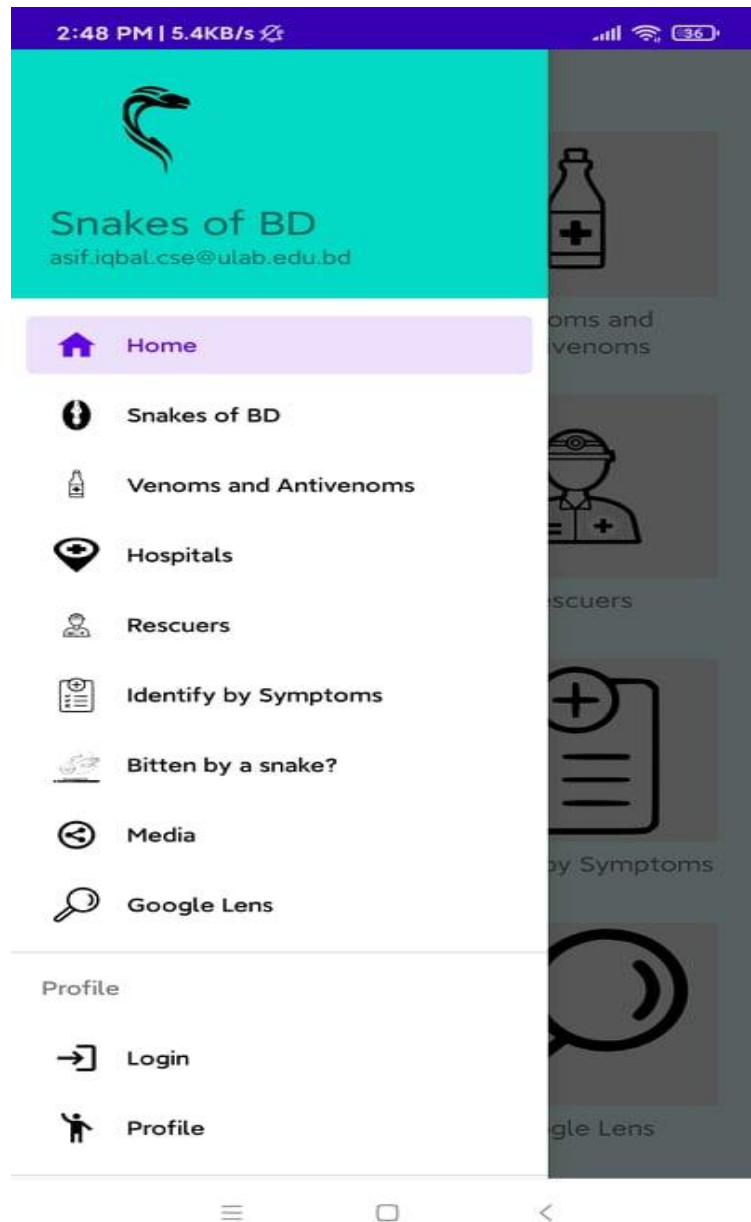


Figure: 16

Venom Types:



Figure: 17

Available Anti Venoms in Bangladesh

1:51 AM | 0.0KB/s | 61%

Antivenom



Price : 1000 TK/Vial

Presentation :

Each ml Snake Venom Antiserum neutralizes not less than Cobra venom (*Naja naja*) 0.60 mg, Common Krait venom (*Bungarus caeruleus*) 0.45 mg, Russell's Viper venom (*Vipera russelli*) 0.60 mg, Saw-scaled Viper venom (*Echis carinatus*) 0.45 mg.

Applications :

Initial dose of 5–10 vials of Antivenom by slow intravenous infusion either undiluted at a speed of not more than 2 ml per minute. In the majority of cases of both neurotoxic and haemotoxic bites, total dose of 15–20 vials is adequate unless a proven recurrence of envenomation is established.

Pre-cautions :

Figure: 18

Snakes list by category with pop-up window details

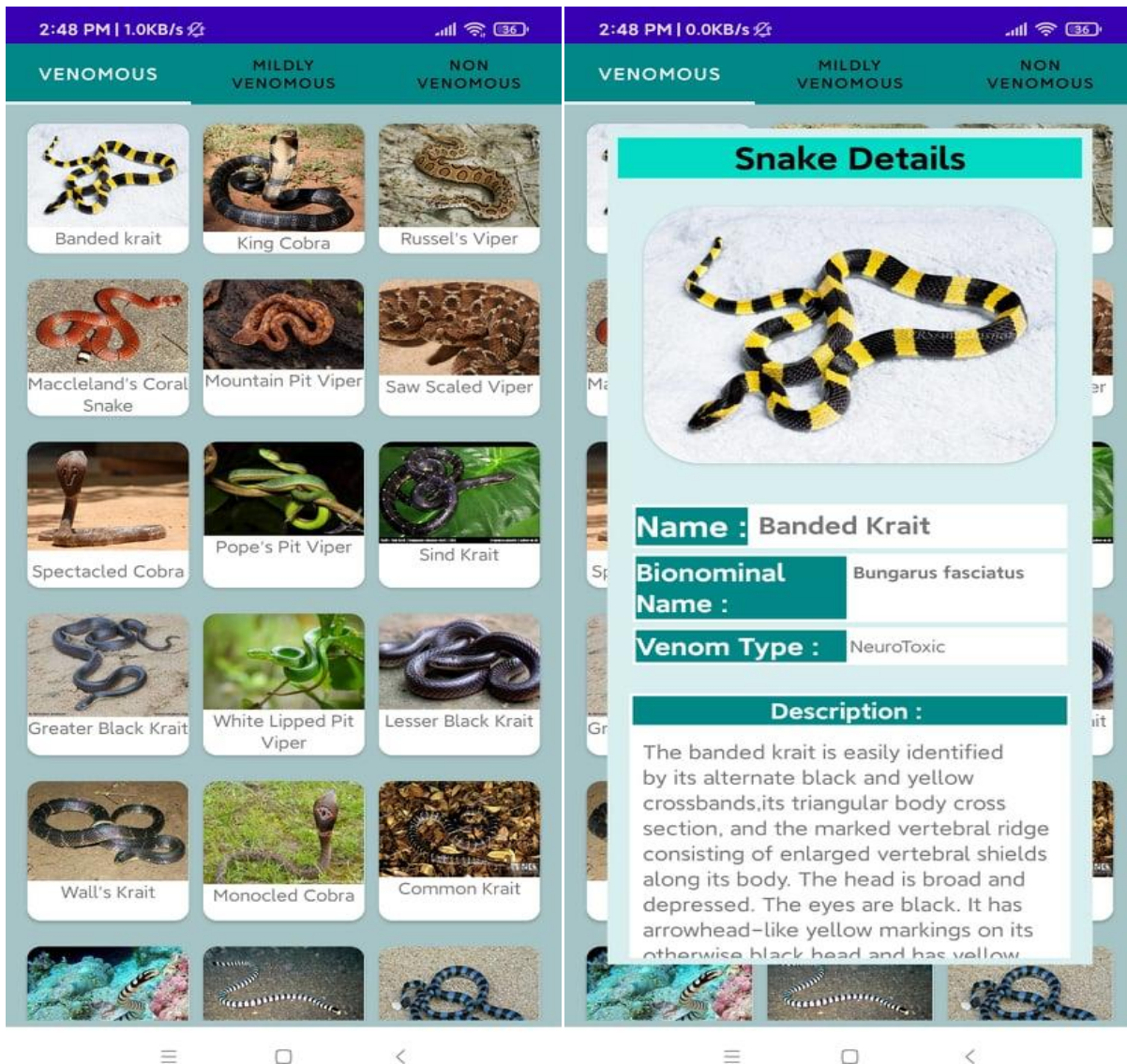


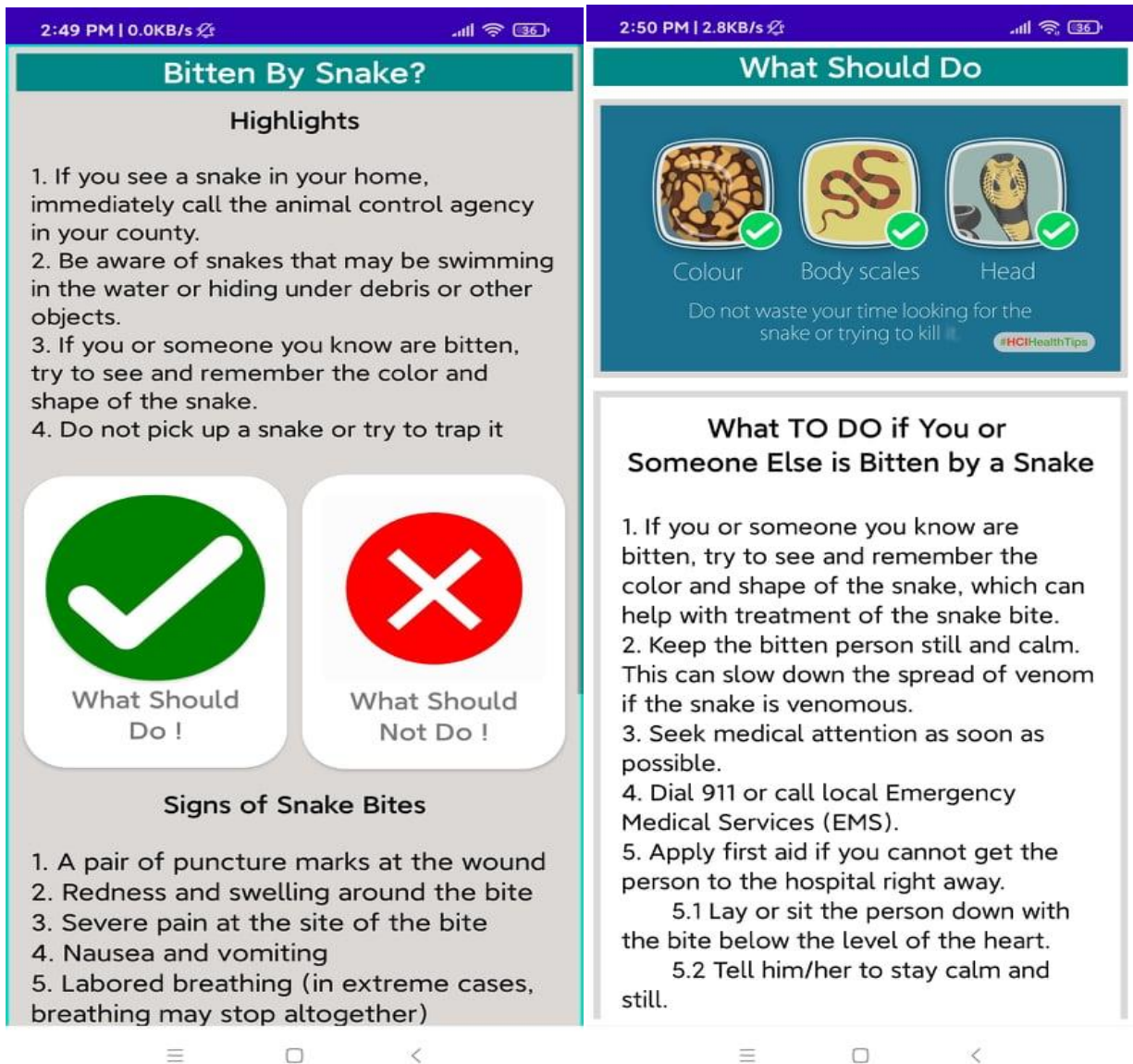
Figure: 19, 20

Rescuers List



Figure: 21

If you or someone is bitten by snake, then what should do or what should not do



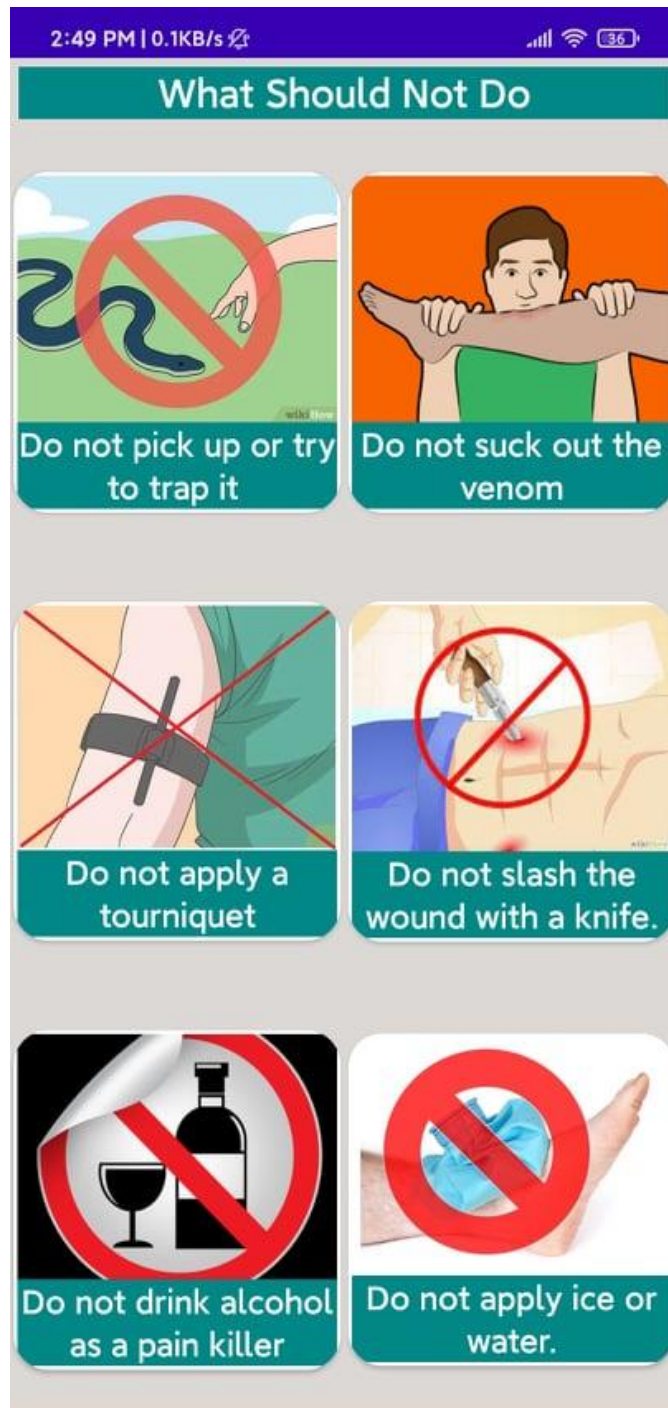


Figure: 22, 23, 24

Identify Snake by Images

5:12 PM | 0.2KB/s

Snake Identification Quiz

Score : 10

Question : 3/10



What is the name of the Snake ?

- 1. Wall's Krait
- 2. Green Pit Viper
- 3. Red Necked Keelback
- 4. Popes Pit Viper

SUBMIT NEXT

Figure: 25

Identify Snake by Symptoms

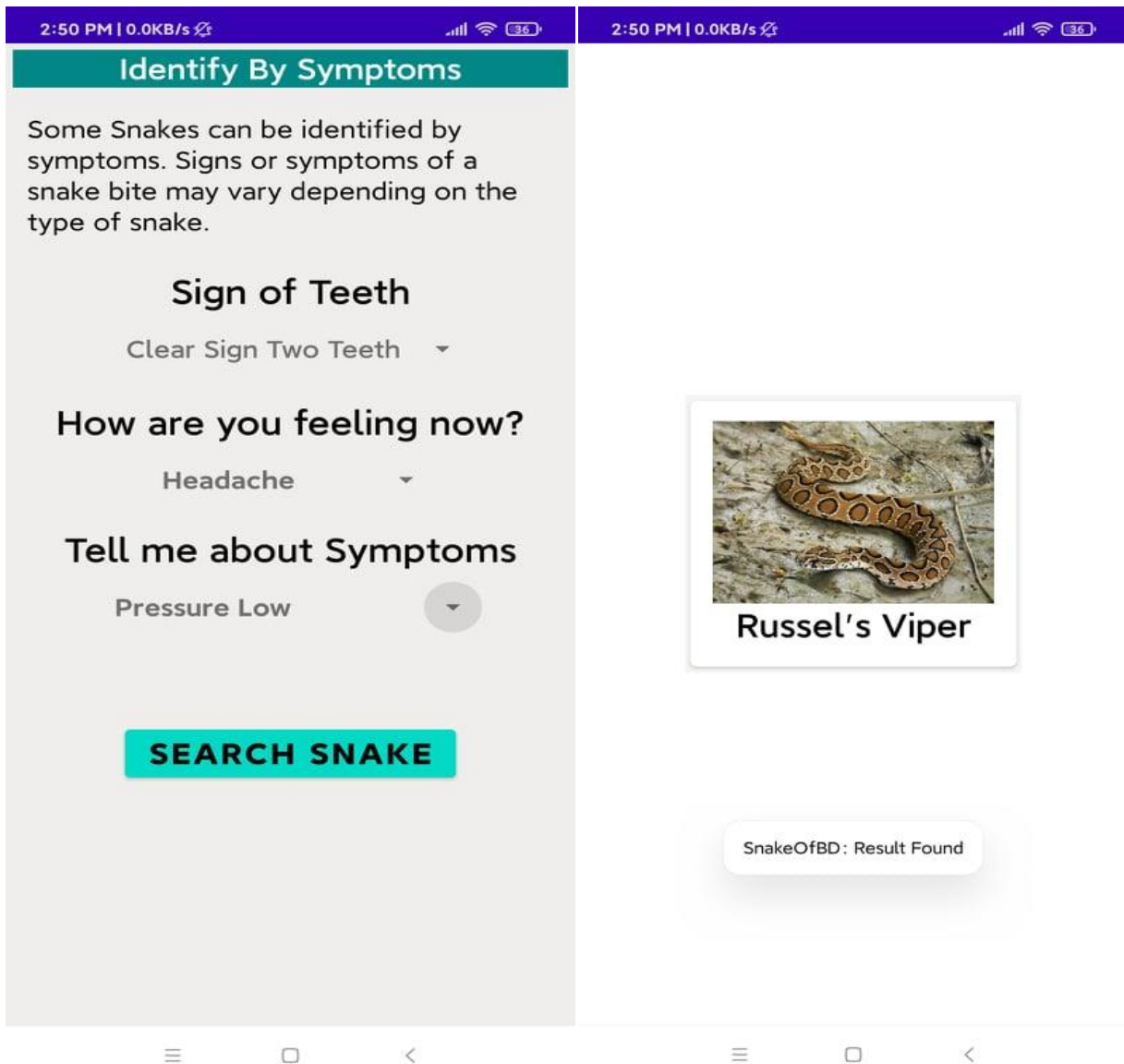
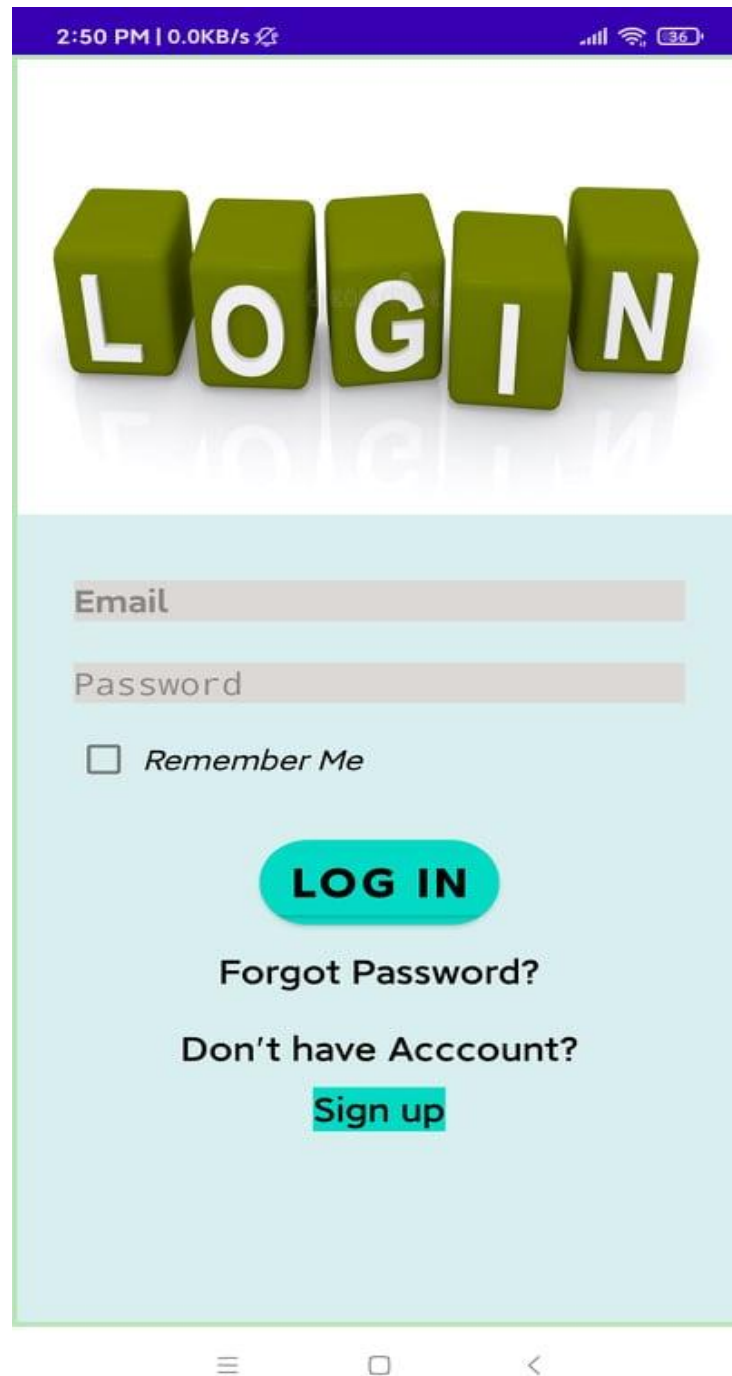


Figure: 16, 27

Login Activity



A mobile application login screen. At the top, a purple status bar shows the time 2:50 PM, data speed 0.0KB/s, and battery level 36%. Below the status bar, the word "LOGIN" is displayed in large, 3D green block letters with white text. The main content area has a light blue background. It contains two input fields: "Email" and "Password", both with light gray borders. Below the "Password" field is a checkbox labeled "Remember Me". A large, rounded teal button with the text "LOG IN" in bold black letters is centered below the input fields. Underneath the button are two links: "Forgot Password?" and "Don't have Account?". Below these links is a teal button with the text "Sign up" in bold black letters. At the bottom of the screen, there are three navigation icons: a hamburger menu, a square home button, and a back arrow.

2:50 PM | 0.0KB/s

36%

LOGIN

Email

Password

☐ Remember Me

LOG IN

[Forgot Password?](#)

[Don't have Account?](#)

Sign up

Figure: 28

Sign Up Activity



A screenshot of a mobile application's sign-up screen. The screen has a dark background with a subtle pattern. At the top, a purple status bar shows the time as 2:51 PM, a data speed of 0.2KB/s, and battery level at 36%. Below the status bar is a teal banner with the text "Welcome !". Underneath the banner, the text "New Member? Sign Up Here" is displayed. A series of six light gray input fields are stacked vertically, labeled "First Name", "Email", "Password", "Confirm Password", "Phone", and "Location". A large, rounded teal button with the text "SIGN UP" in bold black letters is positioned below the input fields. Below the button, the text "Already have an Account?" is shown, followed by the text "Log In Here" in a green color. At the bottom of the screen, there is a teal circular loading spinner. The bottom of the screen shows standard Android navigation icons: a hamburger menu, a square home button, and a back arrow.

2:51 PM | 0.2KB/s

36

Welcome !

New Member? Sign Up Here

First Name

Email

Password

Confirm Password

Phone

Location

SIGN UP

Already have an Account?

Log In Here

Figure: 29

Profile Activity

1:55 AM | 0.6KB/s   



UPLOAD PHOTO

Name : Asif Iqbal

Email : asifshovon@gmail.com

Phone No : 01685740131

Location : Mohammdpur,
Dhaka,Bangladesh

SAVE UPDATE

Figure: 30

Update profile



The image shows a mobile application interface for updating a user's profile. At the top, there is a status bar with the time 1:55 AM, data speed 4.5KB/s, and a battery level of 61%. Below this is a navigation bar with four options: ALL POST, MY POST, PROFILE (which is currently selected), and ADD POST. The main content area has a light blue background. At the top of this area is a circular profile picture of a man in a black leather jacket standing in a rural setting. Below the picture is a green button labeled 'Profile Details'. Underneath this button are four input fields, each with a green label and a white text box: 'Name : Asif Iqbal', 'Email : asifshovon@gmail.com', 'Phone No : 01685740131', and 'Location : Mohammdpur, Dhaka, Bangladesh'. At the bottom of the form is a green button labeled 'UPDATE PROFILE'. The bottom of the screen shows the standard Android navigation bar with icons for the app drawer, home, and back.

1:55 AM | 4.5KB/s | 61%

ALL POST MY POST PROFILE ADD POST



Profile Details

Name : Asif Iqbal

Email : asifshovon@gmail.com

Phone No : 01685740131

Location : Mohammdpur,
Dhaka, Bangladesh

UPDATE PROFILE

Figure: 31

All Post Activity

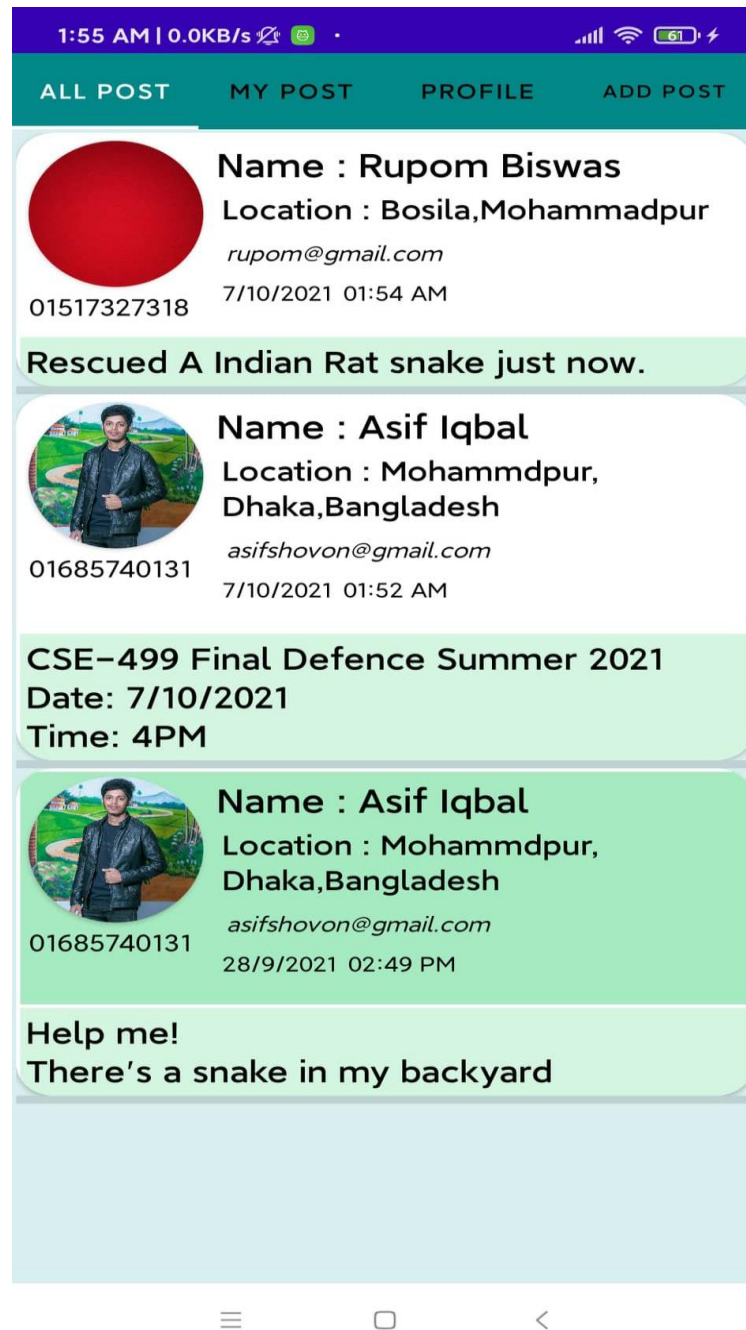


Figure: 32

My Posts Activity



Figure: 33

Add Post Activity

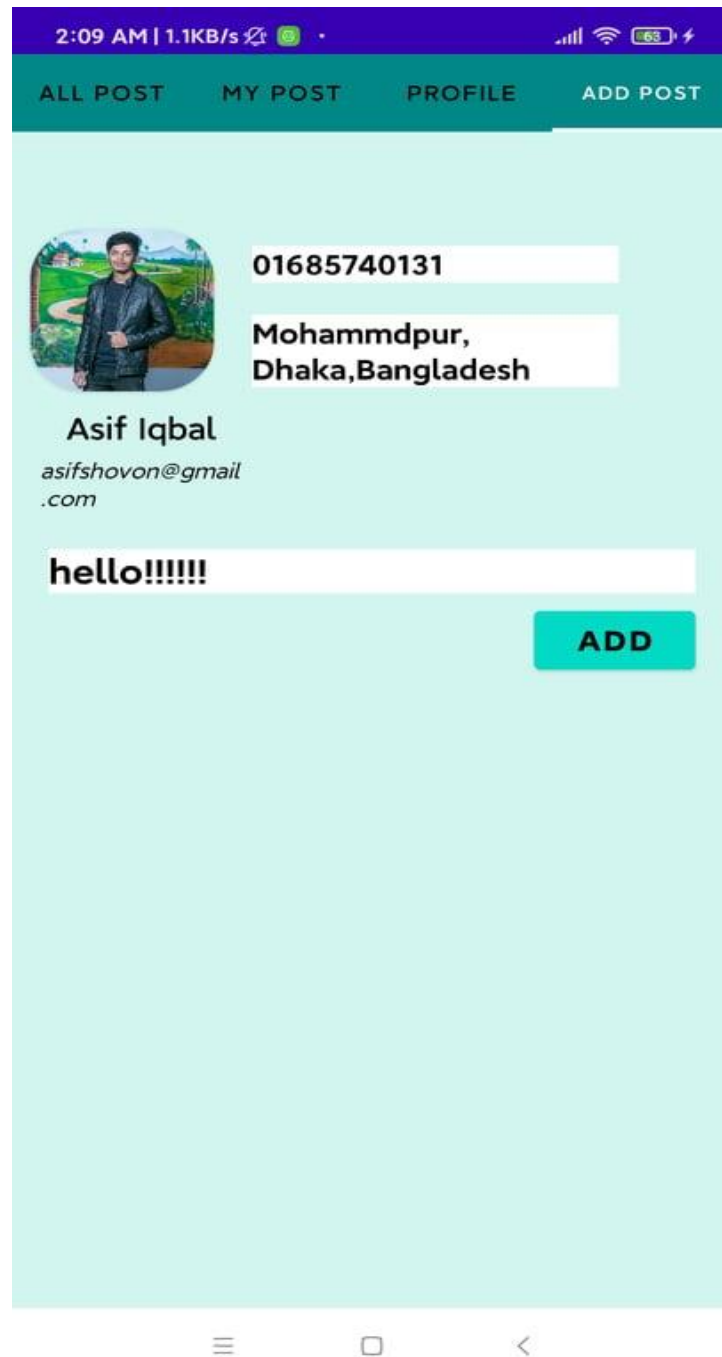


Figure: 34

Find Nearby Hospital

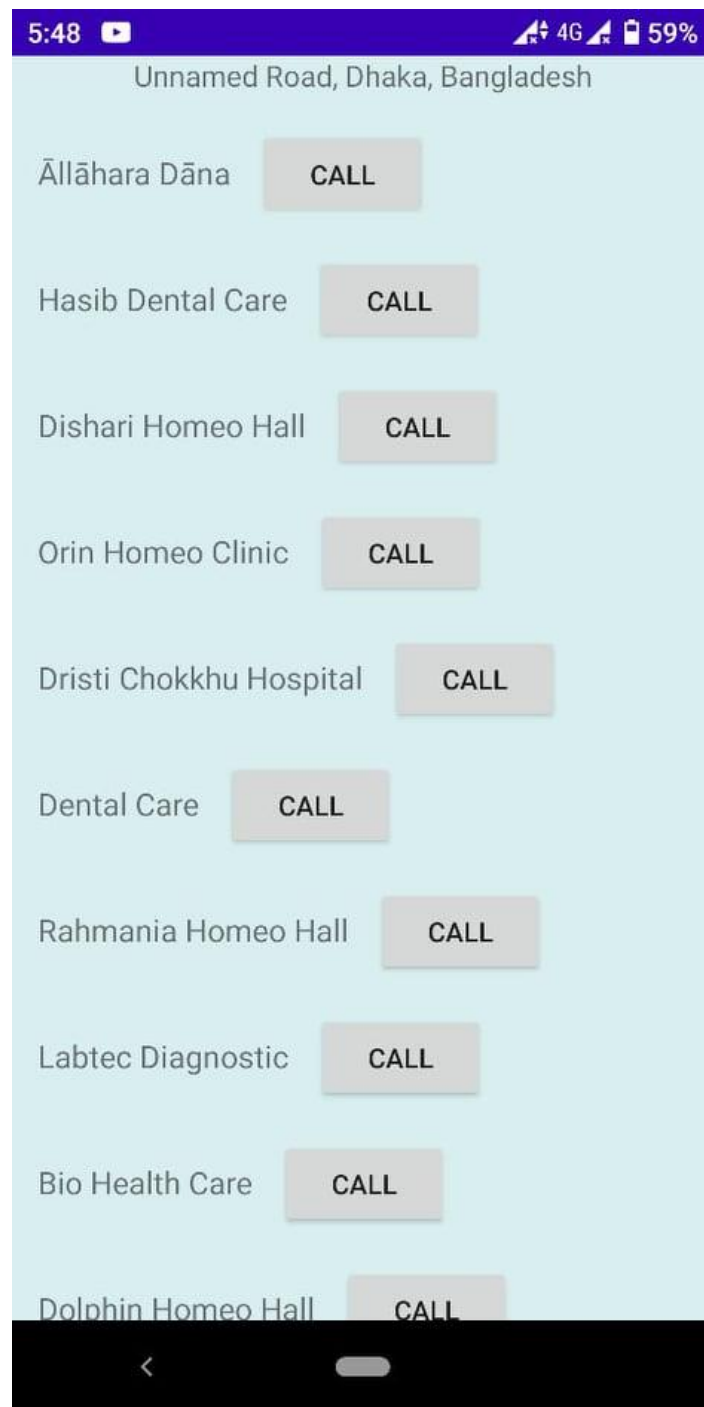


Figure: 35

5.3 Testing Implementation

Software testing is a process for verifying whether or not a software product fits the requirements and is defect-free. The purpose of software testing, in contrast to actual requirements, is to detect errors, gaps, and missing requirements [13].

Testing is a crucial stage of development in which programmers run a program locally in order to find defects that prevent the application from performing as expected. The ultimate goal of testing, regardless of the development process, is to confirm that everything has been developed according to plan. Similarly, testing is critical for ensuring the quality and long-term viability of any undertaking. Testing is an important component of my development approach. In addition, I underlined the need of creating test scenarios that have the best chance of detecting flaws or defects. Here in this project I followed a manual testing technique which name is unit testing. Unit testing is the part of white box testing where individual software units are tested. The ultimate goal of this testing is to ensure that each unit of software code works as intended.

5.4 Test Results and Reports

Several levels of testing are as follows:

Test Cases:

Test case refers to the bunch of instructions and conditions to confirming either a system is working according to the requirements or not.

I have planned and implemented a few test cases to ensure that my application is meeting functional requirements.

Below are the test cases for android based application (Snakes of BD):

TEST MODULE	TEST CASE	EXPECTED RESULT	TEST RESULT
USERS	Provide details for signup	Users successfully registered	PASS
USERS	Providing invalid email or password is not matching with confirm password	Displays error message like invalid email or password does not match	PASS
USERS	Upon successful login upload profile photo	Users uploads profile photo and saves	PASS
USERS	Edit personal info's and change password	Users edits and saves info's properly and after changing password user can log in	PASS
USERS	Users forget password and updates new password	Users updates password by email authentication and logs in with new password	PASS
USERS	Users find Nearby Hospital from his location	Can find hospitals after turning on Location	PASS
USERS	User can Post.	User can post on emergency purpose	PASS
USERS	Users can see all posts from other users	All post showing for user	PASS

USERS	Users can see his own post	Store own post	PASS
USERS	Users Can See Static information without Internet	Users Can See Static information without Internet	PASS
USERS	Users Can recognize snake by its symptoms and images	Users can Identify Snake by symptoms and Images	PASS
USERS	Google Image Search	Google Lens	FAIL

Table 1: Unit testing of users

Chapter 6: Impact on Society, Environment and Sustainability

6.1 Impact on Society

As this app is built on goal of social welfare, so this app has a great impact on society. This app will not initiate any type of malpractice. Since humans are social animals, they need cooperation from someone in the society; this app helps to open the door to that cooperation. Since the rescuers here are assisting other people by rescuing snakes, they are undoubtedly doing a good job.

6.2 Impact on Environment

Just as humans are needed for the environment, snakes are needed to make human life easier. Both humans and snakes play an important role in protecting the ecosystem of the environment. Rats destroy land crops, leading to human malnutrition. And snakes eat rats, which reduces crop damage. This is how snakes interact with humans in the ecosystem.

Again, many times, snakes enter people's homes. When it threatens human life, the snake may have to be killed or rescued to save it. But killing a snake is harmful to human food. So it is more necessary to release the snakes in the forest.

With the help of this app, people will be able to rescue snakes with the help of rescuers. The balance of the environment will be maintained.

6.3 Ethical Aspect

Since this application was made for raising awareness among the people of our country about the snakes that are found here and there in our country. So doing any kind of business through this application is strictly prohibited. Also, every user of this application has to be ethical from their side to not use information in doing any kind of such work that can be unethical; like, using the personal information of the rescuers in other applications or anywhere outside the application. Sharing any kind of wrong information can deal huge damage to other people so the users should pay extra attention while sharing anything in the application about the snakes. Rescuers are there to helping people but any kind of fake calls or information can be a hassle for them so the rescue operation can be hampered.

6.4 Sustainability Plan

Sustainability means consistency in a long run. It is often seen that an app suddenly becomes obsolete; no one is using that app anymore. These are called un-sustainability. Again, there are many apps that are still providing the same service as in the beginning. These are called sustainable apps.

Since the Snakes of BD app is an app created for the welfare of a society, this application will have to provide the same quality of service that this app is able to provide for a long time. Because this app will be used for snake identification and human welfare, so long as there is a need for snake identification, it is able to serve.

But yes! If new snakes are available in Bangladesh, but they are not added to this

application, then no one will want to use this app anymore. Then this app will lose its sustainability.

Chapter 7: Conclusion and Future Scope

7.1 Discussion and Conclusion

Snake bites claim the lives of many individuals every year. Bangladesh is only second to India in terms of infant mortality. In India, there is an Android app for snake introduction, however in Bangladesh, there is none. There is no structure in place that allows us to learn a great deal about snakes, dos and don'ts, or reptiles. This app is called "Snakes of BD," and it contains a description of the snakes that have been discovered in Bangladesh so far, as well as information on what to do if you spot a snake or are bitten by one. For exceptional needs, the name and phone number of the nearest hospital will be retrieved from its location. Rescuers have been notified. It will be used as a direct mobile phone or text message medium in this situation. On land and at water, Bangladesh is home to around 107 snake species. There are 25 poisonous snake species among them. There are 27 snake species that are slightly poisonous. The rest of the snake species are not venomous.

To learn about snakes, users will need access to the internet and a search engine. However, the majority of the advantages can be found here even if you don't have access to the internet. Even if bitten by a snake, a person will seek out a snake's anti-venom in a hospital and inquire about its cost. Many workshops are held in

rural regions to teach people about snakes; if this app is available, the number of workshops will be reduced.

If some lacking which I have mentioned in 2.4 challenges are solved, this app will be much more effective.

7.2 Scope for Further Developments

This application has some challenges in its implementation period. After building an app and publishing it, way more challenges may come our way. I already built an application where I implemented almost everything I planned. I am planning for polishing it and then uploading it on Google Play Store in future. A free API is being used to find nearby hospitals which finds within 300 meters only. I have a plan to purchase Google Location and Context API for better performance. This API has range more than 300 meters. I had a plan to making a Clone Google Lens and integrating in this app. But the same problem is like Free API. Google lens uses image labeling API which is not free. Firebase ML kit is providing it but it also purchasable. I will purchase it when I will launch the app. Valid rescuers details and Rescuers end login is in my plan to develop in future.

References:

- <https://www.facebook.com/groups/959896627527624/>
- <https://forgottenfriend.org/rescue/>
- <https://en.banglapedia.org/index.php/Snake>
- <https://www.facebook.com/groups/853651011398715>
- <https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0000860>
- <https://play.google.com/store/apps/details?id=in.snakehub.snakehub>
- <http://www.snakebd.com/>
- <https://www.snakebiteinitiative.org/snakebite-problem/asia-pacific/snapshot-bangladesh/>
- <https://www.dhakatribune.com/bangladesh/nation/2017/07/14/venomous-snakes-bring-economic-benefits>