

Flood Forecasting Notification and Possible Affected Area Prediction System

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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 “**Flood Forecasting Notification and Possible Affected Area Prediction System**”, submitted by Md. Riazul Karim Md. Arman Rahman and Md Mainur Rahman Tarafdar 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 in the December 2018.

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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Ms. Israt Ferdous, Lecturer, 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

Among all weather-related natural disasters, floods have been both the most common and most costly in the world. They can create huge amount of money in damage a year and kill large amount of people around the world [10]. Every community in the world should at least be aware of flood dangers and be prepared for them because you never know when flood may occur. so we want to reduce damage and save life .we developed Flood Forecasting Notification And Possible Affected Area Prediction System (FFNAPAAPS) on android platform based on our country. The target of this System is to notify flood forecasting using notification if occur then user can check which area may affect by input 7 field in the app. For providing appropriate results in affected area prediction making effective decisions on datasets uses 08 flood dependent parameters, some data mining techniques are used on it. Parameters enables significant knowledge, eg, relationships between factors related to flood, to be established. The obtained results have illustrated that the designed predicting system can effectively predict the risky area of flood. By other feature user get information about weather .during flood user can find nearest shelter and can reach there using GPS, also communicate with helping organization and apply for help with evidence(image) and can do emergency call using this application user can know what to do during flood. Making an android application is using java, xml, etc. After complete execution of all this functions, the system is tested in different stages and it works successfully as a prototype.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Flood is a curse for the whole world, on which there is no human control. But if people predict the flood, then the extent of the hailstorm is reduced to the whole world. In our country perception most of the people use android phone so think about them we built research based FFNAPAAPS app .in this app we built a notification system. To aware user he or she gets notification about flood as a flood forecasting message. If people know in advance the flood is going on, using this app people can also know which area may affect by input 7 fields those fields will analysis based on data mining which extract is connect with app for this analysis for data mining we had to focus on that, In Bangladesh heavy rainfall, river danger level above water, India open the dam are major reason of flood. Some other factors are also such as sea level high, month, Himalayan ice melt water, Get down the slope from the up run, hill holes. For heavy rainfall river water reach the above of danger level whole Bangladesh. When there is heavy rainfall in India like Assam or other state then India takes step to extra water drainage by opening the dam.as a result Shylhet, Rajshahi, Rangpur or other division affect by flood. by Get down the slope from the up run affected the north Bengal. And for hill hole affected the south Bengal area by flood. When reach the sea level high then affect the Coastal region in our country. Himalayan ice melt water is responsible for flood in north and nearest area.in our country the month is also an important fact because of June to august is called rainy season. And most of the time flood occurs in this period [2]. There are number of factors which increase the chances of flood.

- ☐ Rain_status
- ☐ Month
- ☐ Dam_status
- ☐ River_level
- ☐ Sea_level
- ☐ Slope
- ☐ Mountain_hill_throat
- ☐ Division_at_risk

The available flood data consists of both numerical and nominal data. Before further processing, cleaning and filtering are applied on this record. The proposed system can determine an knowledge about flood, ie, relationships associated with flood. It can find the danger area which may be affected by flood.

During flood using our app people can reach shelter seeing map with a tracker. People can make emergency call and communicate helping organization and can apply for help and can send at most 4 images and can send picture to concern organization. In this app some guideline are given to overcome the horrible situation A major challenge faced by ministry of education for flood forecasting and advance affected area selection. This provision is providing the quality services by which people can aware about flood using an application at low cost. Therefore, it can be helpful to know flood forecasting with area. Results showed that the proposed system has its unique potency in realizing the objectives of the defined mining goals.

1.2 Motivation

We have learned so many things every day from our around. In this internet world it's easy to hear or to be known about new things. People are leading internet base life nowadays. They want to do their every work thorough internet. In our country every year many areas are affected by flood. And for flood many people lost their life and property. We cannot release our country from the Curse of nature. But we can reduce damage by flood forecasting. Now a days most of the people of our country using android mobile phone.so we build an android application for flood forecasting. And we build a notification system to notify people and determine which area may effect. When flood is happening then People are scared.and using our application they can easily found the shelter and applying for help. These things have motivated us to work with this thesis which we will analyze with this application and will make the work of the user easier.

1.3 Objectives

The Objective of developing this project is to make consumers and providers works really easy and user friendly. This application makes the people advance awareness. Now he/she can look after weather notification for flood forecasting. The features will make his/her works really easy. Consumers can come to visit the android application and they are benefited. This application will automatically give notification to the user about flood forecasting. To know which area may affect user can input 7 fields in the application and shows result based on data mining decision analysis. Using this application people can found their shelter very easily and communicate Helper agencies.

1.4 Expected Outcome

- Easy way of forecasting flood.
- Easy and effective way of flood data analysis.
- Consumers can easily notify by this application.
- Based on consumer input it will show which area may get affected.
- Give prediction for the flood affected area on the basis of data mining.
- Prediction will make things easy and effective for flood forecasting.
- Consumers can communicate and apply for help by Helper agencies.
- Consumers get to know what to do at the time of flood and about shelter.

1.5 Report Layout

The total project is included six chapters. In the report, the layout is summarized that five chapters. Summarization of the layout is given below:

In chapter one it gives an introduction with a short overview of the flood forecasting, Data analysis of the areas and its motivation. We will also discuss the goal of our objectives and expected outcomes of our project. In chapter two we discuss the background of our project which is covered with related works of the Data analysis and discussion of the problem and challenges of the system. In chapter three we highlight the requirements on both

software and communication service which we used in our project. In chapter four on design specification about our proposal by the flow-chart diagram, design with both front-end and back-end with practical details. In chapter five we will discuss the implementation and testing of our project. In chapter six the conclusion, limitation and future scope or possible development of our project are discussed.

CHAPTER 2

BACKGROUND STUDY

2.1 Introduction

This app is an innovative way to provide services through the forecast of floods through data analysis. Our users can easily identify an area of aggression by giving some data inputs. If the user continues to technically, then the data set input of the particular area can be given if needed. get the next 5 days weather information then user sets about their daily routine. Flooded people can use this app to save their lives and resources, and can apply to neighboring places and can contact the assistance agencies with pictures of the situation and may be aware.

2.2 Related Works

After deciding to build this android application, we looked through online and found no such site or app that is like ours. However, there are apps which have some similar features like us but not a complete one. There are some apps where people can find such features like us. But ours other features are not present there. The prediction for flood must be different from others app. We just make it happen in one app. It will work both for general people and also for Government to take step earlier.

We have listed some app which has some relatively same features like our site. The description of those apps is given below.

2.2.1 BWDB Flood App

Bangladesh Water Development Board has their own app for monitoring local rivers and their condition. In this app there are some features that can closer to us. Current water level and the water level forecast along with the flood warning message are more likely to be similar.

2.2.2 Iseeflood

In this app the developer just has given those features which will show the flood level in streets, houses and in rivers. Other features like notification or prediction are not available. Staff gauges one of the crucial features of that app.

2.2.3 River App

Flood forecasting apps need the information of rivers. River app generally provides the information we needed to develop. River location and their current situation are shown here.

2.2.4 Bonna Purbavash

One of our key features is to aware people about flood. The app will send notification whenever it gets any information about flood. Bonna purbavash is also an app where we can get the notification of flood. But the app quite back dated.

2.3 Comparative Studies

We studied and looked for some similar features in an android App throughout the play store, those we found is not that same which we are developing. Yes there are some features are present there but not like us. There are some apps which got similar like features but ours one is all in one. Some got notification system and some got river level information and nearby centers. But we got all those features along with prediction system, where it shows if any flood going to happen near future considering the present situation of the rivers. The target of this System is to notify flood forecasting using notification if it occurs then user can check which area may get affected by input some fields in the app. For providing appropriate results in affected area prediction making effective decisions on datasets uses 08 flood dependent parameters, some data mining techniques are used on it.

We build a simple and user friendly app for an admin and also for user. Our main focuses to feel them good. This is important that everybody can find what they are looking for in this app easily and for the admin it should be very simple to understand the scenario.

2.4 Scope of the Problem

It's a completely new site which brings admin and user site by site, by its features. Weather analysis for the admin has a new way. The data analysis of this app gets under automatic processes.

2.4.1 An App for Both User and Admin

This app is designed with a purpose of analyzing running weather reports and river condition automatically. Thus it's very important to make the UI very easy and efficient for both user and admin.

2.4.2 Business Analysis

The main target is to build an app which can analyze the weather and river situation data and make valuable prediction for flood. By which it can be easy for the admin to make decision or take action for further ahead.

2.4.3 Time Saving

In the rainy season flood is very common thing we usually face. But sometimes flood can come without any seasonal reason. It can be a human cause, which we usually see nowadays.

In this type of situation it is very difficult to know when the flood is coming. So people can't take necessary steps. They can't go to nearby shelters. Our app will help them doing this in time. So it will be time saving and also lifesaving.

2.4.4 Helping Hand

It will be a best possible helping hand for the user. The app will do the job for you automatically considering any flood or river erosion going on. The admin will just study the situations of the rivers and climate. It will bring the result in front of his eyes. It will alert him/her and then he will notify everyone through messages. According to the situation people can take further step and can remain safe.

2.4.5 Precaution

Precaution is something that is really beneficial for everyone. Now we can cure almost everything, but cure is something that takes place after something takes place. By doing so losses can only be reduced, but losses are already being done. So if we want to save ourselves from these damages we really need something which will help us to take precaution. So this app gives us that precaution which will help us to take immediate steps.

2.5 Challenges

This app is not like other as usual apps. If we consider the prediction system and notification system we can easily find the difference between others and us. To make this kind system we had to go through many challenges. Some of them are discussed below.

2.5.1 Requirement

The prediction work needs to be realistic and also the basis of weather forecast. The analysis need to be done in background and also process of the app need to run efficiently and also other features need to be fine all the time. There is a challenge to which data will be count or which not. That's why we were in need of better performing algorithms.

2.5.2 Time scheduling

It was the most difficult part to maintain. We always keep in mind about the deadline. One's we couldn't do it in time, it will be very much harmful for us. Thus we have to divide our time to develop the app part by part.

2.5.3 Poor Communication

The project leader gives the path or way to do this work and divided the work respectively for each of the members differently. Thus the work get easier for everyone and also saves time for do further development. Maintain that schedule is a challenge and all the members done it by their dedication.

2.5.4 Skills for the Project

A project sometimes requires skills that keeps the project go on. A project leader determines the needed skills and other team members also should have determined to do some for the project to complete it.

2.5.5 Weather Forecast

It was a big task for us. The team needs to work very hard to find out the way of this work done because it's our app one of the best features. All team come together share their knowledge and show dedication to done this work. Our target is to set a button by clicking on that button use can see the weather forecast at that time. By dividing the time and work the team done this work.

2.5.6 Prediction

It was also a big task for us because it is our main features. This idea brought us together to develop this kind of app. We are very keen to do this by which we mainly analyze the whole data. There were lot of work to make it happened. Whole team come together work as a person to make this features work perfectly.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Business Process Model represents the value of that project. In this project, the most of the part show view weather forecasting, flooded area prediction, communicate to helper agencies, Awareness and also some other features. We used is given below.

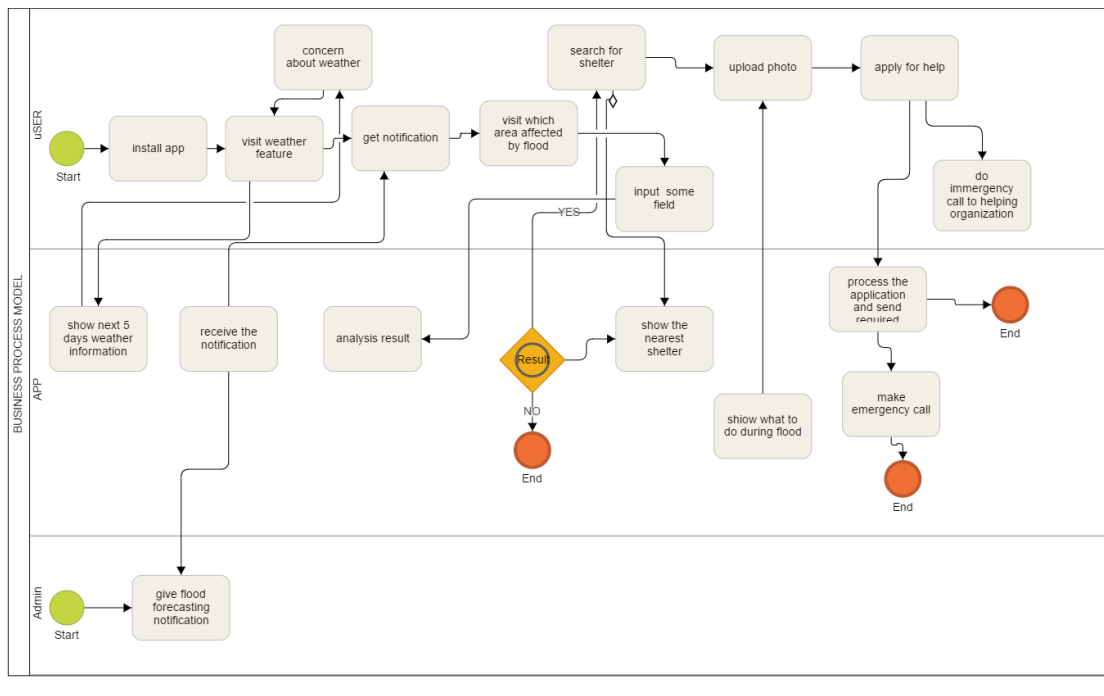


Figure 3.1.1: Business Process Model

3.2 Requirement collection and analysis

Software requirements:

- Select area.
- Weather forecast.
- Keep up to date with weather.
- Make the process easy for user.
- Notifications need to be on time.
- User friendly environment.
- Show actual water level.
- Make shelter information more clear and timely.
-

3.2.1 Hardware and Software Requirements for Our System

Firstly you must need to look after the minimum requirement of hardware and software to run this app. There is some software requirement as well as hardware for run this app properly and efficiently.

In the development stage, the system requires for all tools and platforms describe to advance the new system like

- Android Studio
- Weka
- An android phone

In our system there will be daily update the weather forecast and water level. It will check continuously.

3.2.2 Analysis

After deciding the project idea. We have the confidence to develop this site completely. There is a confidence to do this work as a new way. We were studies lot of the closely related apps and we decided to do that as Weka and Java in backend and mostly XML at the frontend.

We decided to do backend in Java, because Java is a server-side scripting language for developing an online application and that is peaceful to be developed. Java has solidified a reputation as a solid programming language for the back-end.

3.3 Use Case Modeling and Description

The Use Case model that we used in our project is given below.

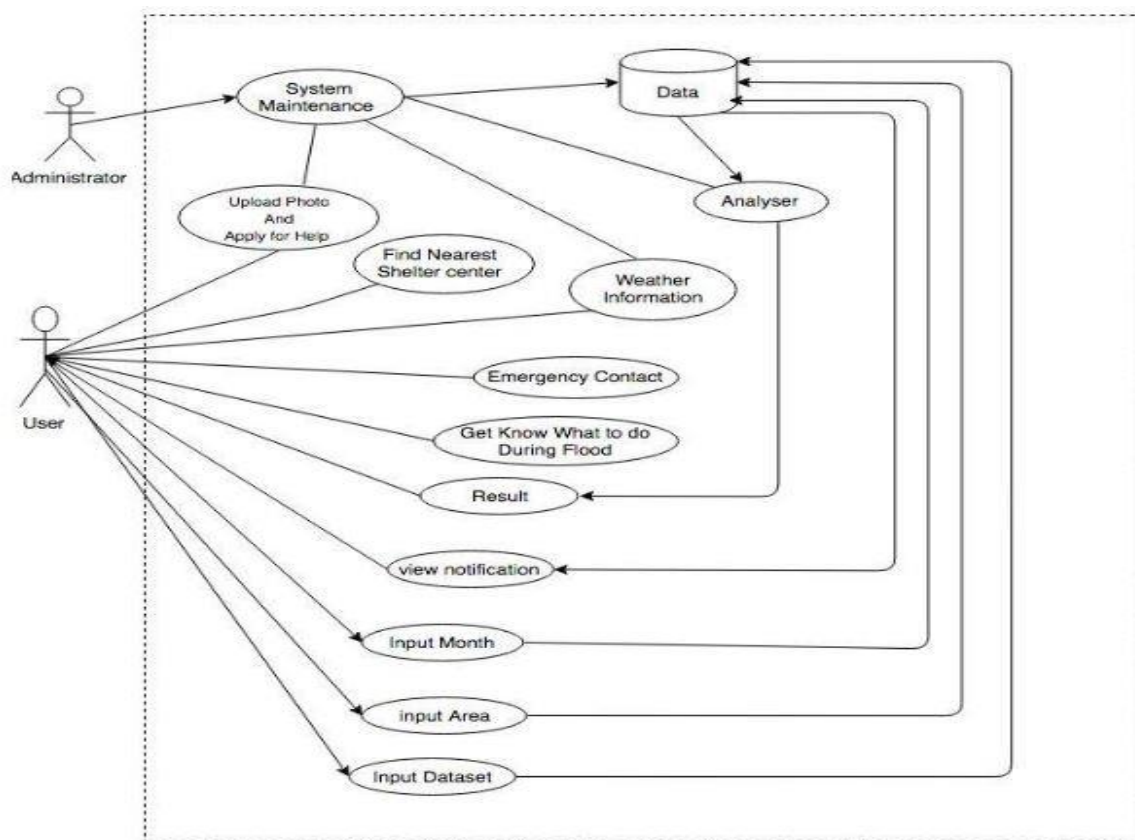


Figure 3.3.1: Use Case Model of Virtual Assistance for Students

Brief Description: The user checks for any update given in the app and the admin updates.

Actor: Admin

Actor: User

Main Flow:

- The User Case starts when the user uploads any photo and looks for help.
- The user searches for nearest shelter and gets to know what to do during this kind of situation.
- The user can give his location as input and can get help.
- The admin can send notification if any critical situation arises.

Give Feedback:

Brief Description: User can easily give feedback on basis of their experiences.

Actor: User.

Actor: Admin.

The steps:

- User can take weather information.
- They can give valid feedback after using the app and those feedbacks will be used to analyze the process.

Data Analysis

Brief Description: Admin provide a dataset as default. And user also input dataset.

Actor: Admin

Actor: user

The steps:

- On the basis of provided data user can easily detect possible affected area.
- User can input dataset if need and easily detect possible affected area

Add weather report:

Brief Description: Admin can add the new weather forecast for next 5 days..

Actor: Admin

The steps:

- Admin can add weather report which he gets from the weather forecasting offices.
- Admin can send a notification as a flood forecasting message.

Delete data:

Brief Description: Admin can delete the selected data if want.

Actor: Admin

The steps:

- Deleting the back dated data admin can make the app up to dated.
- Admin has all right to which data to delete or not but in that case he/she need to understand the situation.

Update data:

Brief Description: Admin can update data and attribute .

Actor: Admin

The steps:

- After looking all around the weather forecast the admin can update the data set.

3.4 Logical Data Model

Logical Data modeling is a process used to define and analyses requirement needed to support the business processes within the scope of corresponding information systems in organizations. The Entity-Relationship model or Entity-Relationship diagram is a logical data model, it includes the entity, attributes, table, and relationships.

There are three main components of an Entity-Relationship Diagram are the entities, which are objects or concepts that can have data stored about them, the relationship between those entities, and the cardinality, which defines that relationship in terms of numbers.

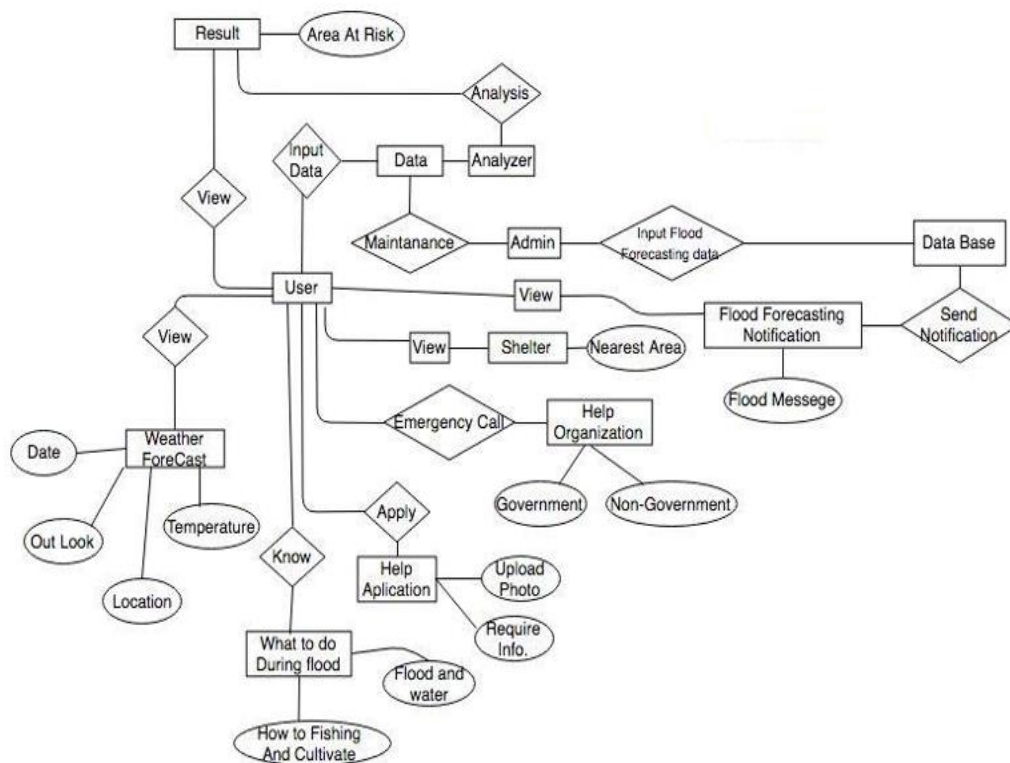


Figure 3.4.1: Logical Data Model (E-R Diagram)

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

Front-end design states the user interface design. Creating the main XML and presentational Java code that makes up a user interface. This design will play a vital role for any app. For designing the app we needed to keep in mind the user friendliness of any app. The design need to be easy and user friendly. Frontend design should be simple that can be understood by anyone who visits the app. We use raw coding for the design purpose besides using any template or something else. The app design is visible while the XML, Java works comes simultaneously as that is controlled by any of our android phone.

Title	Description
City Field	Here call the name of particular division name so that division show in the interface.
Updated Field	This field work if any change in the weather forecast can updated this field of this application.
details Field	This field create for all the information about weather.
Current Temperature Field	This field is create for showing the current temperature in the user interface
Humanity Field	This field use for showing the current humanity that's why it use
Pressure Field	This field is create for measuring the pressure if pressure high it show good weather if pressure low it show bad weather
Weather Icon field	This field create for show an icon against the particular information like sunny, cloudy, Light rain etc.

Figure 4.1.1: Front End Design

4.1.1 XML: extensible Markup Language

In computing, **Extensible Markup Language (XML)** is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. The W3C's XML 1.0 Specification and several other related specifications—all of them free open standards—define XML. The design goals of XML emphasize simplicity, generality, and usability across the Internet. It is a textual data format with strong support via Unicode for different human languages. Although the design of XML focuses on documents, the language is widely used for the representation of arbitrary data structures such as those used in web services.

Several schema systems exist to aid in the definition of XML-based languages, while programmers have developed many application programming interfaces (APIs) to aid the processing of XML data.

4.1.2 SDK

A **software development kit (SDK or devkit)** is typically a set of software development tools that allows the creation of applications for a certain software package, software framework, hardware platform, computer system, video game console, operating system, or similar development platform. To enrich applications with advanced functionalities, advertisements, push notifications, and more, most app developers implement specific software development kits. Some SDKs are critical for developing a platform-specific app.

4.1.3 Java

Java is a general-purpose computer-programming language that is concurrent, class-based, object-oriented, and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.

4.1.4 SQLite

Saving data to a database is ideal for repeating or structured data, such as contact information. This page assumes that you are familiar with SQL databases in general and helps you get started with SQLite databases on Android. The APIs you'll need to use a database on Android are available in the android.database.sqlite package.

4.1.5 Weka

Waikato Environment for Knowledge Analysis (Weka) is a suite of machine learning software written in Java, developed at the University of Waikato, New Zealand. It is free software licensed under the GNU General Public License.

4.2 Back-end Design

4.2.1 Object Oriented Java

Object-oriented programming (OOP) is a programming paradigm based on the concept of "objects", which may contain data, in the form of fields, often known as attributes; and code, in the form of procedures, often known as methods. A feature of objects is that an object's procedures can access and often modify the data fields of the object with which they are associated (objects have a notion of "this" or "self"). In OOP, computer programs are designed by making them out of objects that interact with one another. There is significant diversity of OOP languages, but the most popular ones are class-based, meaning that objects are instances of classes, which typically also determine their type.

Many of the most widely used programming languages (such as C++, Object Pascal, Java, Python etc.) are multi-paradigm programming languages that support object-oriented programming to a greater or lesser degree, typically in combination with imperative, procedural programming. Significant object-oriented languages include Java, C++, C#, Python, PHP, JavaScript, Ruby, Perl, Object Pascal, Objective-C, Dart, Swift, Scala, Common Lisp, and Smalltalk.

4.2.2 Adding Data Folder and Library Folder

After completing above task we need to some coding we can use different Weka Class, Library and different function which we are normally used in weka (weka documentation). First import the weka API in java eclipse and after we can apply class and function. We implement the weka algorithm using Weka class And Function. Basically we implement Random Tree generate Algorithm.

4.2.3 Random Tree

Random Tree is a supervised learning algorithm. Like you can already see from its name, it creates a forest and makes it somehow random. The „forest “it builds, is an ensemble of Decision Trees, most of the time trained with the “bagging” method. The general idea of the bagging method is that a combination of learning models increases the overall result. One big advantage of random forest is, that it can be used for both classification and regression problems, which form the majority of current machine learning systems. I will talk about random forest in classification, since classification is sometimes considered the building block of machine learning.

After implementation weka API in Java we get load a dataset (.arff) which our team member are made and apply Random Tree algorithm get a decision tree.

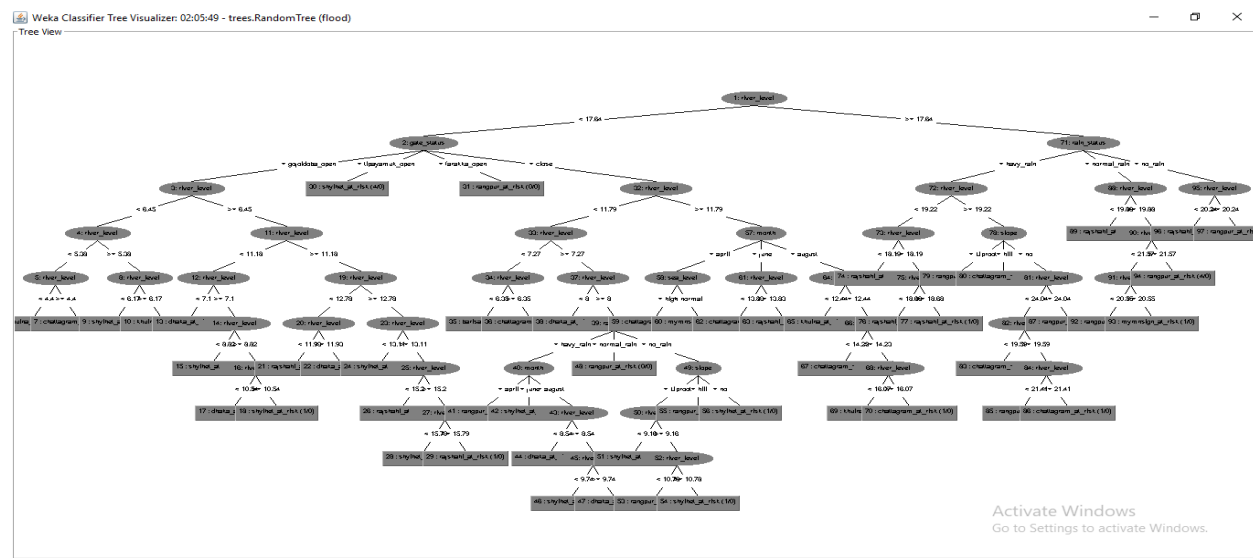


Figure 4.2.1: Decision Tree

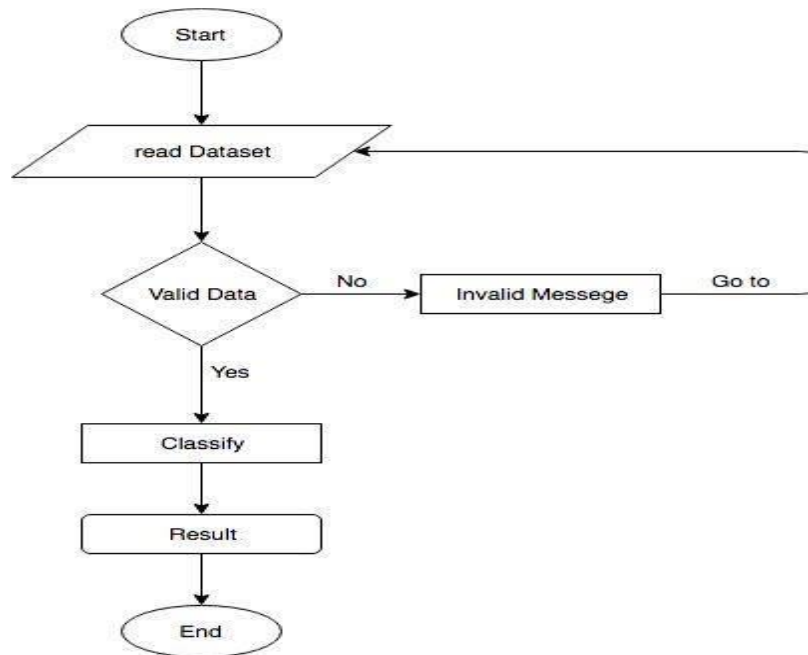


Figure 4.2.2 Back End Design

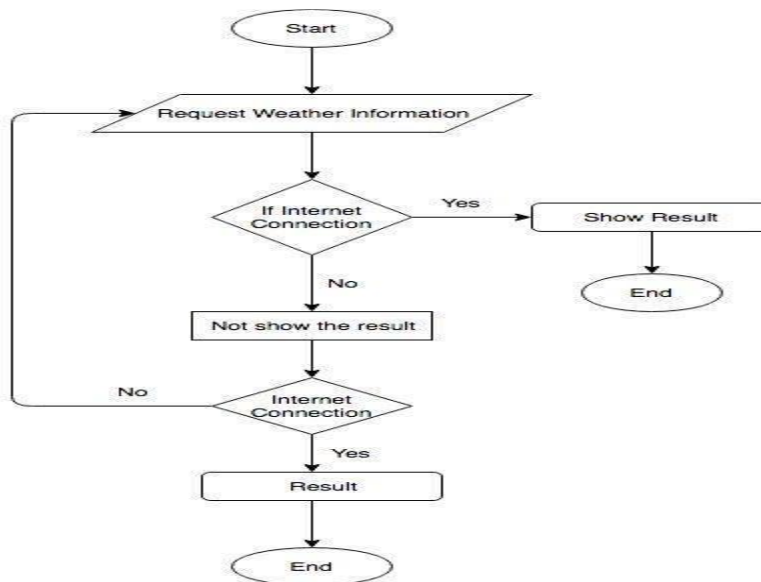


Figure 4.2.3: Back End Design

4.3 Interaction Design and UX

User interface (UI) design is the process of making interfaces in software or computerized devices with a focus on looks or style. Designers aim to create designs users will find easy to use and pleasurable. UI design typically refers to graphical user interfaces but also includes others, such as voice-controlled ones. User experience design is the process of improving user satisfaction with a product by improving the usability, accessibility, and pleasure provided in the interaction with the product. It is the most important part for any app to ensuring user experience.

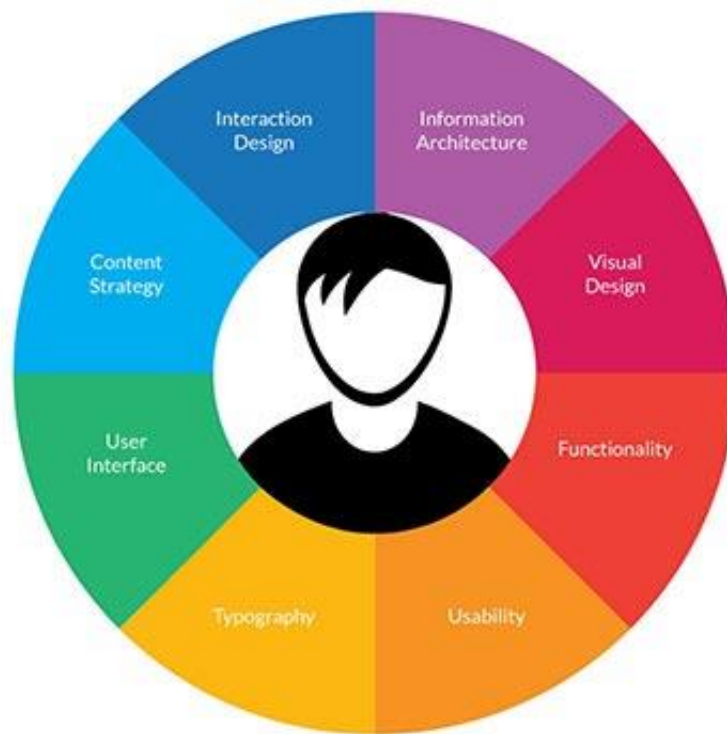


Figure 4.3.1: UX Design

4.3.1 Home Page Interaction Design and UX

In our application, we have designed the home page. It has two parts. One site for the user who can see the features and another one for the admin to update and send notification during emergency time. The homepage is designed with the Java and XML. For this, the frontend design become more attractive and user friendly.



Figure 4.3.1: Home page

4.4 Implementation Requirements

Implementation means doing a work by a planning, design an app as it imagine. The app which comes to the mind first makes it visible for everyone as we plan. As such implementation is the action that must follow any preliminary thinking in order for something to actually happen.

The main thought was for our implantation was to make the site easier for everyone. The implementation Requirements was given us as a very conceptual idea. To implement this project. We need Photoshop to design logo or UI/UX. To implement other things we need Android Studio to do XML, Java and Weka for data analysis.

Software requirements for our application

- Operating System Windows (XP or Higher).
- Android Studio.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

We use SQLite to implement the database of this site. Database management handles the data that is needed to store, retrieve data. This includes multiple frameworks. [8]

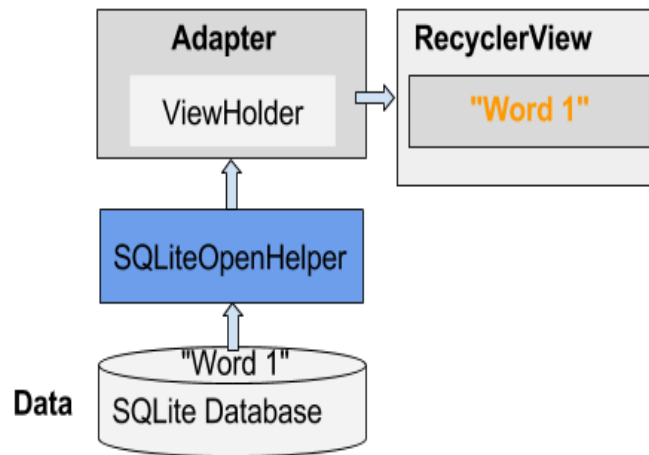


Figure 5.1.1: Database Processing System

The above chart will give an idea about how the database processing framework works for any operation about database.

From the above image, we can see that how we have stored the user's information in each time they create their account. Above, whenever we generate a token is saved in the generating token database we make in.

5.2 Implementation of Front-end Design

We are write the XML code for the design the basic User Inter Face which is visible for user and make an attraction. Our design is very simple and easy to understand for Bangladeshi people.

During design part we need to hard working and always keep in mind the simplicity and easy to understandable. After a lot of hard work we make it a visible interface

.

5.2.1 User View

During user they can first see this option and behind this option has lot of content. The option are Weather forecasts, Help for flood flooding, Nearby shelter centers, Emergency contact, Weather information, To do at the time of flood, Flood Forecast. This is just a view part for a user to go for further detail of our site.



Figure 5.2.1: User View

5.2.2 Flood Prediction

In this option user can set the area and month for the prediction on the basis of by default dataset. On the other hand one can up-load new dataset for predict on this are. We used random tree for this analyzer.

বন্যার পূর্বাভাস নির্ণয়

বিভাগের নাম : Dhaka

মাস : August

River Level : 2

Sea Level : High

Slope : Uproot

Dam Status : Gojoldoba Open

Mountain Hill Throat : Yes

অথবা ম্যানুয়াল ডাটা সেট

ফাইল লোকেশন:

অ্যানালাইজার RandomTree

নির্ণয় করুন

Figure 5.2.2: Flood Forecast

5.2.3 Weather Forecast

When User clicks on weather forecast it shows the day date and time temperature clear sky or cloudy sky. It's work when user has internet connection. User get Notification is one of the main features in our application system. Using firebase cloudy messages user get a notification in app.

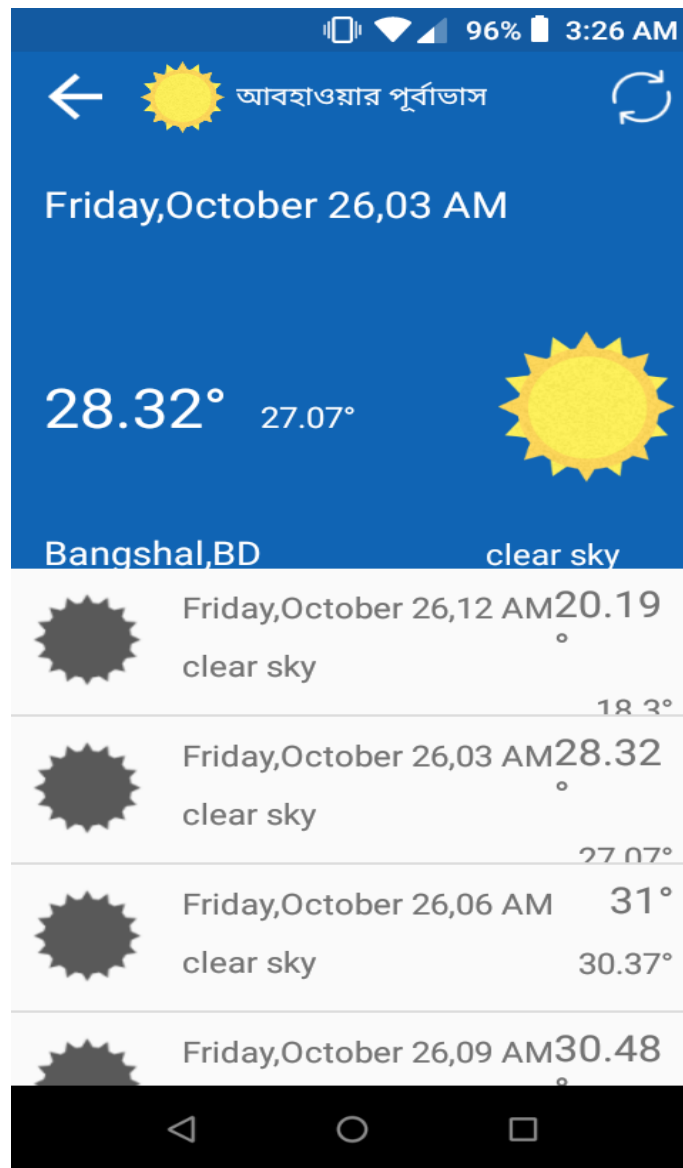


Figure 5.2.3: Weather Forecast

5.2.4 Nearby Shelter Centers

This option shows the nearest shelter center for affected people. This is help for find the nearest shelter center if user can use this app. Affected people find the safe place very easy by using this app.

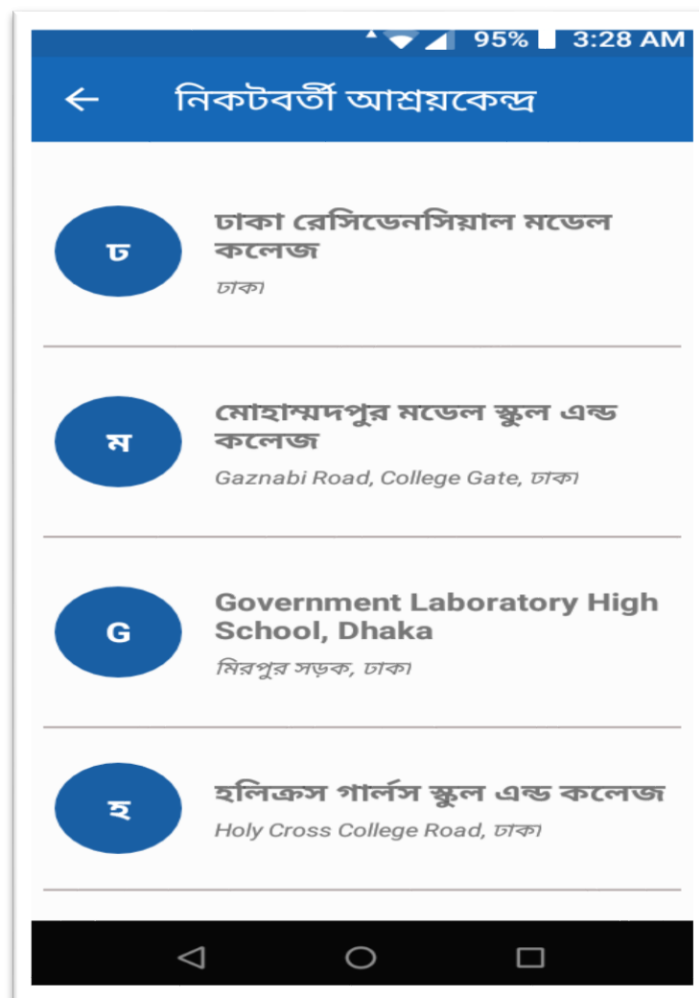


Figure 5.2.4: Nearby Shelter

5.2.5 Emergency Contacts

This option show the emergency contact Department of Disaster Management and for road culvert construction after flood and help to find the disappear people during flood .We are think it's another most helpful option for this apps.

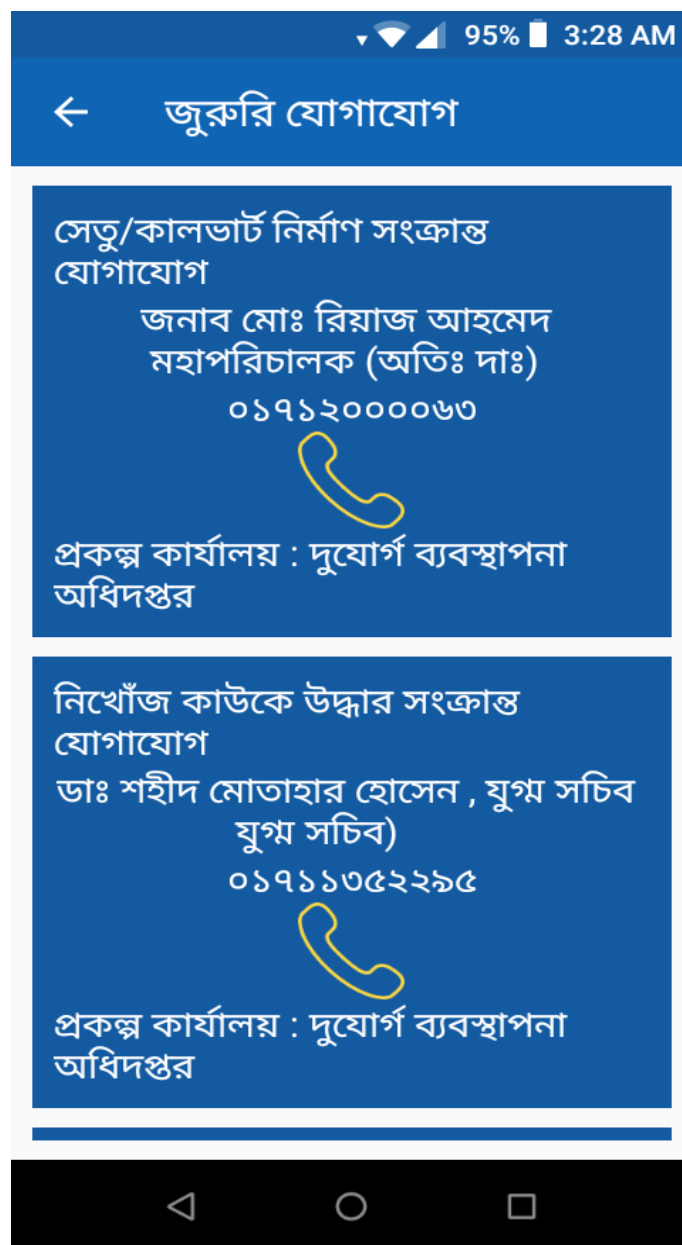


Figure 5.2.5: Emergency Contacts

5.2.6 Weather Information

This option show the information for user where the danger level how much on present state. It represents news about the flood.

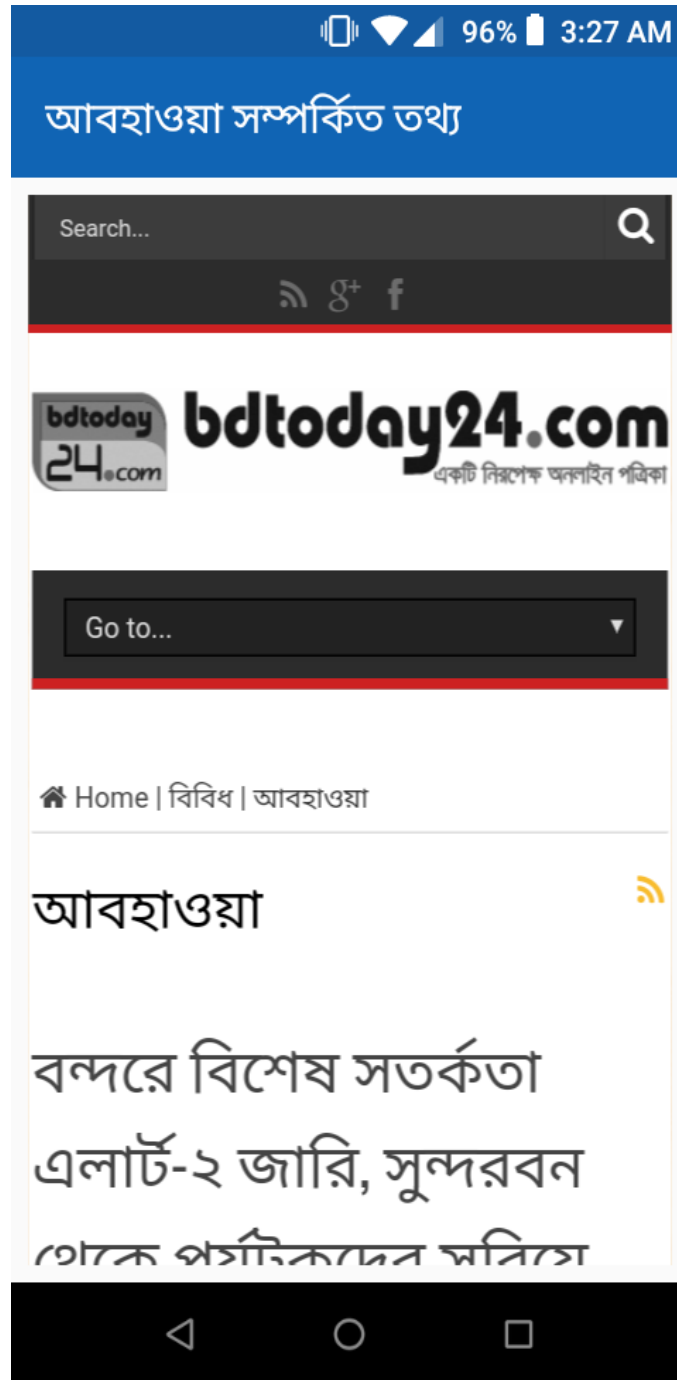


Figure 5.2.6: Weather Information

5.2.7 To Do at the Time of Flood

This option shows what to do during the flood. How to save from the affected people .It show how to water filtering how to save from disease emergency treatment, it also help the affected for emergency step during the flood.



Figure 5.2.7: To Do and Not to Do

5.3 Implementation of Interactions

In implementation, interaction is a piece of our system. Interaction implies when we are on a particular page of an app that takes us another page that we need to go anytime. It happens when all the pages are interlinked with each other. There are so many components go into the design of an app. A complete app is the best possible medium to reach a client from anywhere from the world. It is along these lines basic, it ought to be planned such that clients ought to be pulled in and be locked in on the app. This is the point at which a site can achieve its clients adequately. That component is app interactivity.

When we simply work for implementation that implies we are working on the app. At the point when the client moves the mouse catch on home board that slides on a side that was the one of our interaction usage for our system.

5.4 Testing Implementation

The features we added on our app when we implemented those and perform those implemented operations are the testing of implemented features. We added our thinking features and also tested them as a user or as an admin in our app. We test all possible tasks as a user or an admin such as admin and user, add, delete, update etc. The result of accepting testing is good enough to what we wanted from the app. It fills the accepting testing result as what we exactly wanted.

5.4 Weka Api

We need to make an analyzer. We choose weka analyzer for the data analysis for this project. This analyzer work with the given data set and finally given an output using the data. Weka API connects with the java code using some coding and process.

5.4.1 Add build path option in the project

Create a project in eclipse and right click the project and should follow the path.

Right click project>Build path>Configure build path>Add External JARs>weka as like image given below

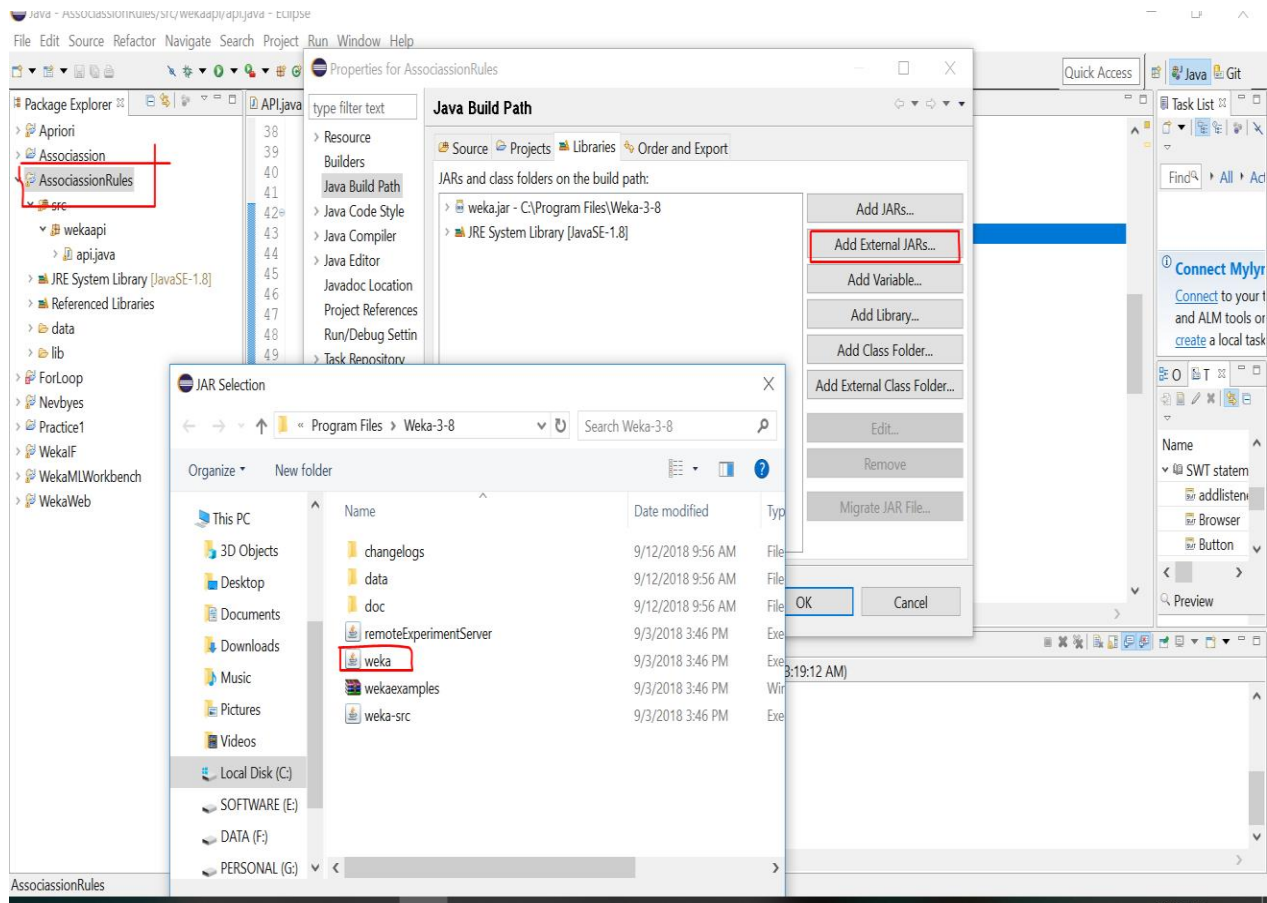


Figure 5.4.1: Build Path Option

5.5 Test Results and Reports

5.5.1 System Testing:

The below image shows the testing result of our app:

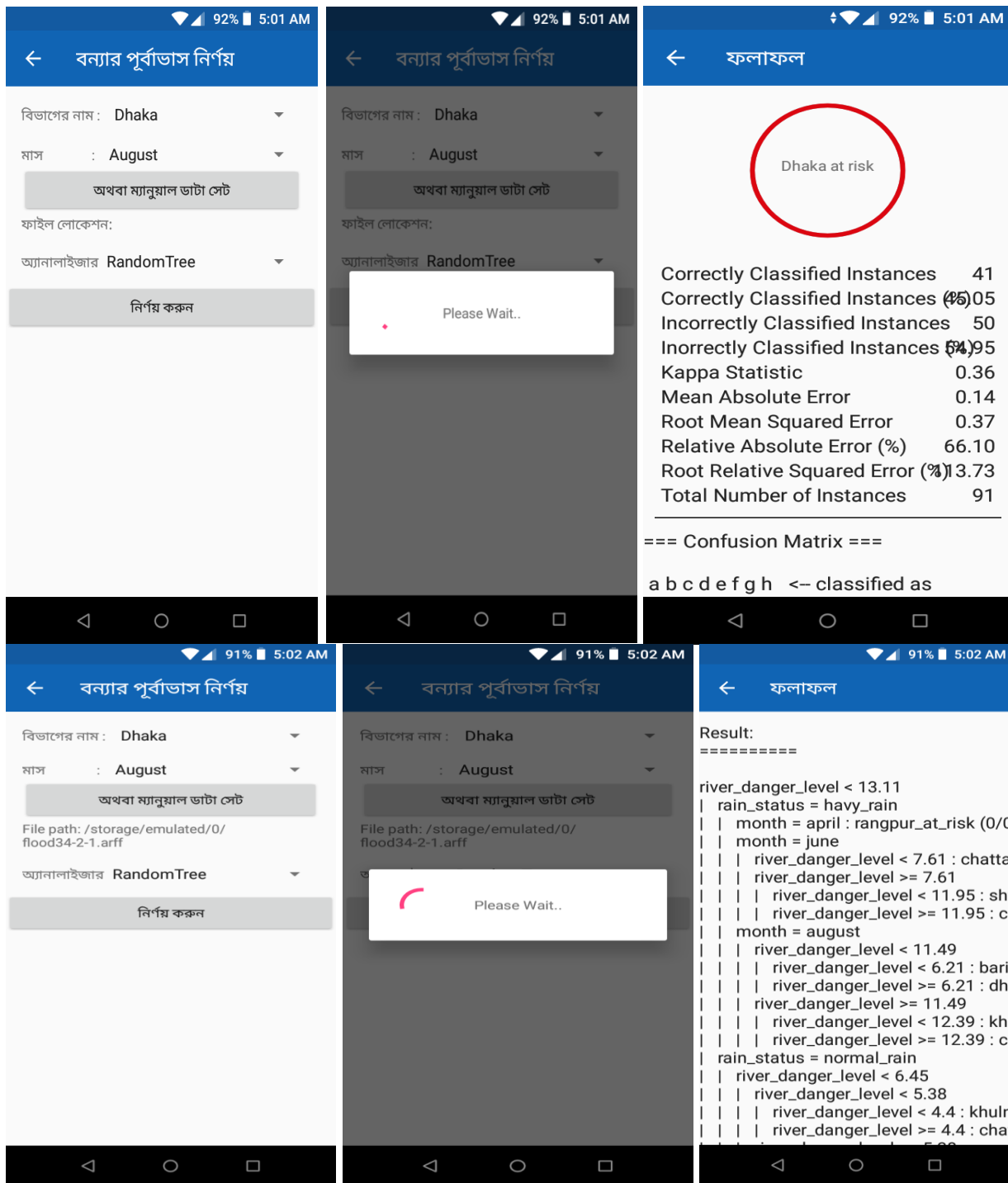


Figure 5.5.1: Test Results

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

In this study, FFNAPAAPS has been presented using data mining techniques. The tree model proves the better results and assists the domain experts and even People from flooded areas can easily aware. This system performs realistically well even without retraining. Furthermore, the experimental results show that the system predicts possible flood affected area with ~90% accuracy. All feature of this system cover flood related the entire requirement from a person awareness to affected person to save. We built the system using our country fact.

Since using this system only our country people will be benefited now but we design and built the system model thinking respect the world. Any country of the world can make their system follow this using their own fact if need. Our challenges are to increase the accuracy of system performance and also convert it into web platform.

6.2 Scope for Further Developments

We could have done some more work; we need to continue with it

- World data analysis.
- Convert it into web platform.
- Increased the accuracy of system performance.

APPENDIX

Appendix A: Project Reflection:

This appendix described the whole project reflection. We are getting a little time for working with any other project but in this project we got a lot of time to do so unique. We think a lot about this project, this thinking need more time to grow this idea. This is a unique idea which got some new and interesting features. We complementing and helping each other from the beginning of the work and continued the same work till the end of the project.

That was an amazing experience for the group member's. It was a great experience work in a team like this. The team work helps us to learn so many things that teach us how to divide the work in a team to build up a complete project or work. We meet together on meeting discussed about the project sitting together and also discussed new ideas of every person to make this thing better.

Appendix B: Related Diagrams

Block Diagram:

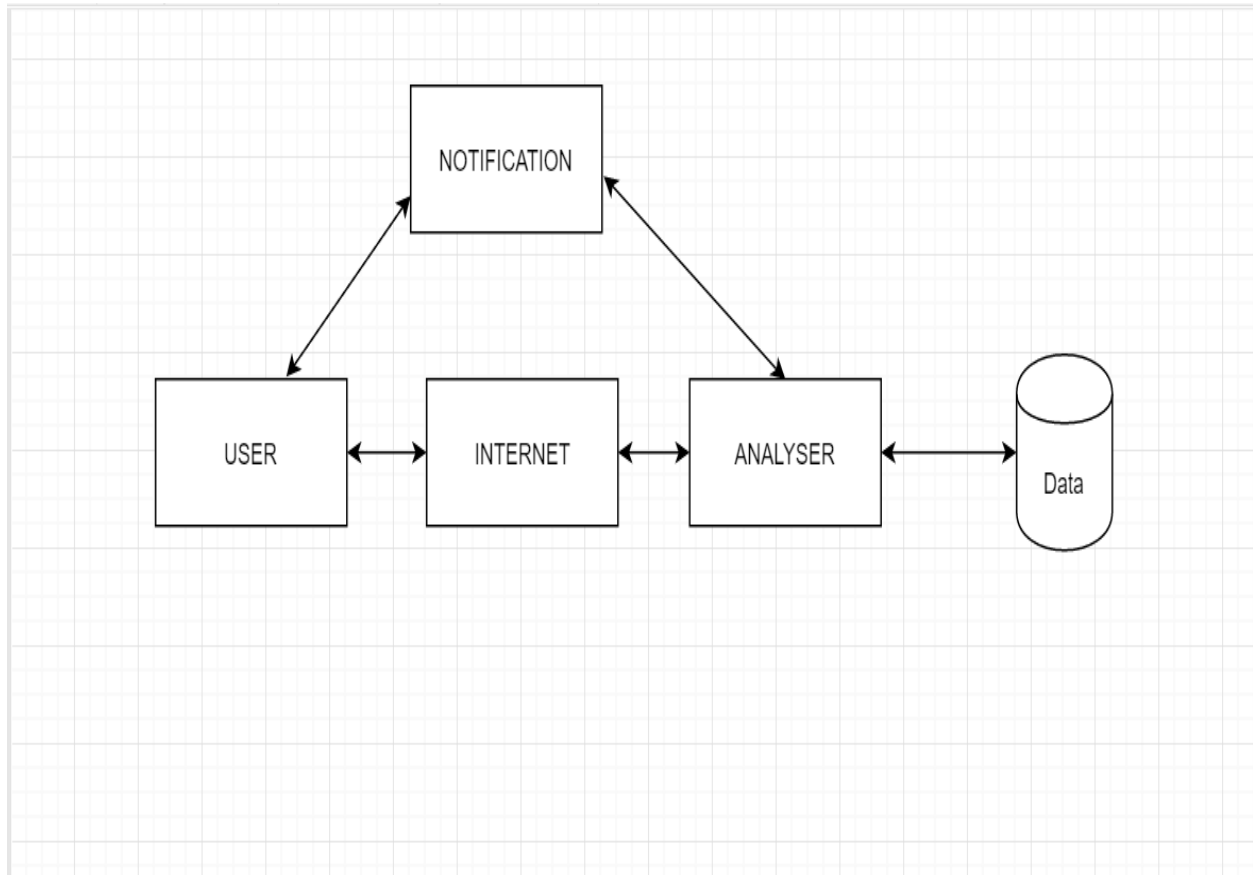


Figure 6.1.1: Block Diagram

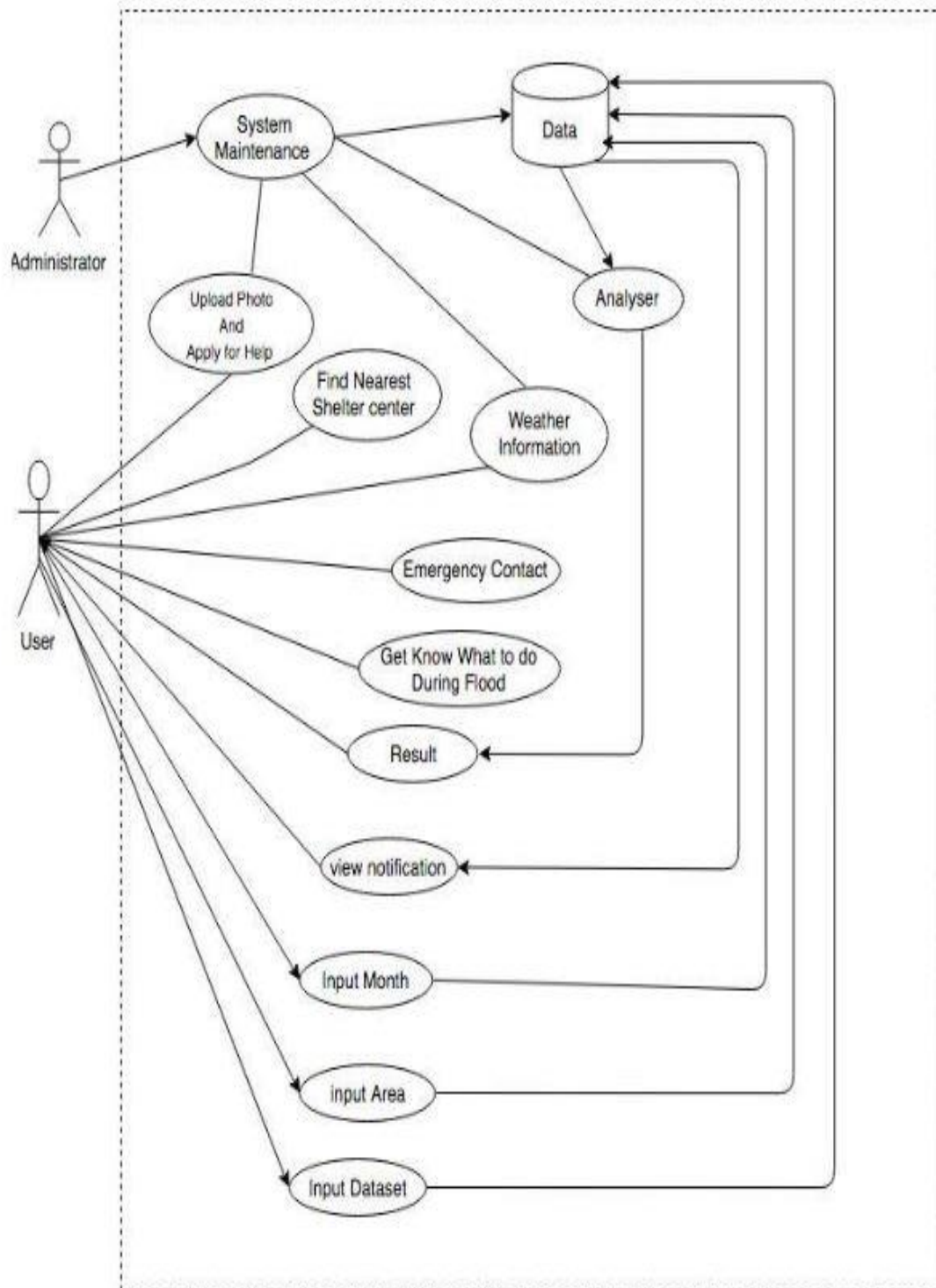


Figure 3.2: Use Case Model

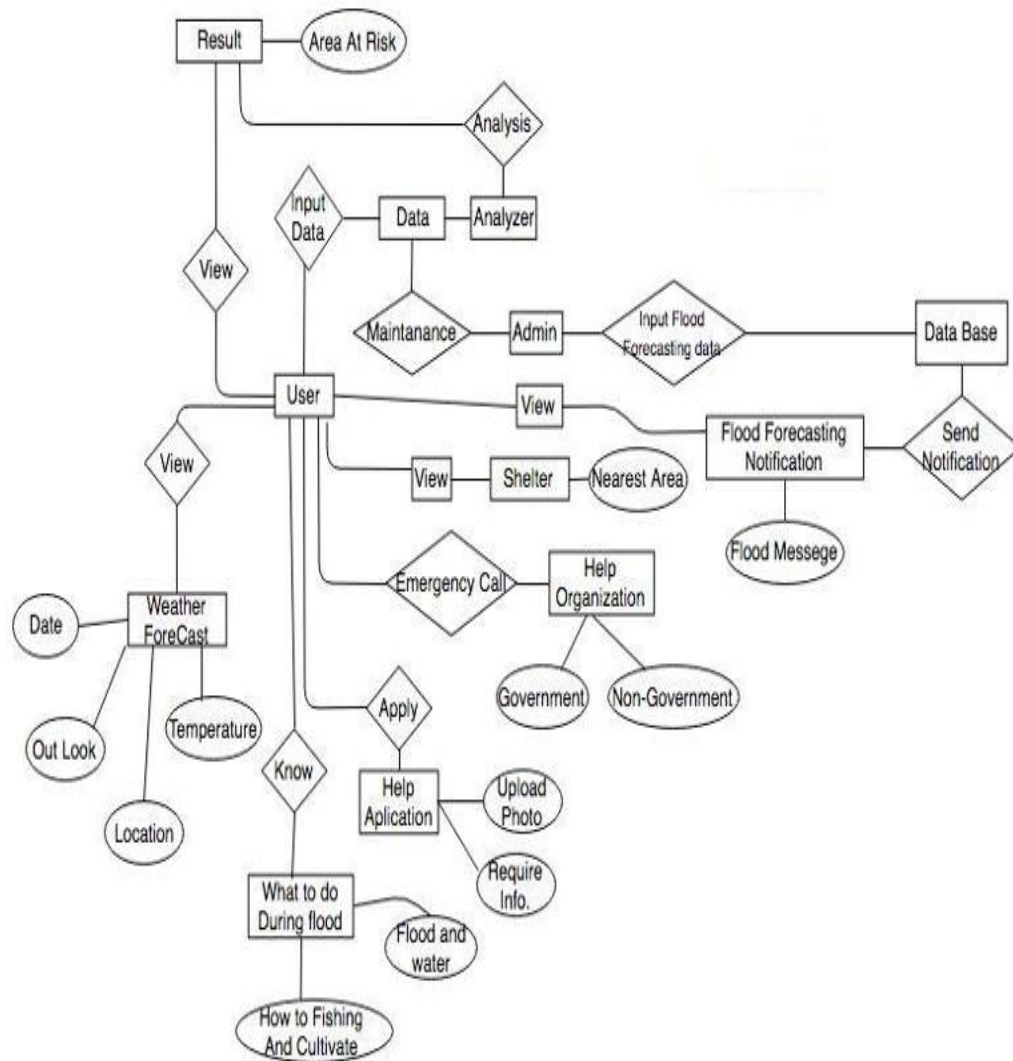


Figure 3.3: Entity-Relationship Model

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