MARGDARSHAK

A Project Report

Submitted in partial fulfillment of the requirements for the degree of

BACHELOR OF TECHNOLOGY

in

Computer Science And Engineering

by

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TABLE OF CONTENT

DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of our other degree or diploma of the university or other institute of higher learning, except where due acknowledgement has been made in the text.

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CERTIFICATE

*This is to certify that Project Report entitled "**MARGDARSHAK**" submitted by **Mohit Rathaur**(1602710073), **Mridul Arora**(1602710074), **Kshitij Srivastava** (1602710065) &**Prashant Gupta**(1602710094) in partial fulfillment of the requirement for the award of degree **Bachelor of Technology** in Department of Computer Science And Engineering of Dr. A.P.J Abdul Kalam Technical University, Lucknow is a record of the candidates' own work carried out by him under my / our supervision. The matter embodied in this report is original and has not been submitted for the award of any other degree.*

(Dr.Sunita Yadav)	***(Mrs. Priyanka Upadhyay)***
Professor& Head	***AssistantProfessor***
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ABSTRACT

The era of mobile technology opens the windows to the android app.The websites are vanishing and the mobile phones are emerging.It's the time to change from conventional websites to apps, which has become the part of our daily routine.We are introducing "MARGDARSHAK.apk" the android application software on the internet that is dedicated to travel. These apps may be focused on travel reviews, trip fares, or a combination of both. Many travel apps are online travelogues or travel journals, usually created by individual travelers and hosted by companies that generally provide their information to consumers for free. The purpose of these apps is established fact that Internet users are increasing today. One of the main purposes of these apps is to facilitate the offline customer online because customers cannot spend their precious time in markets trying to find out the best deal. India is a country where in a few days holiday, you can enjoy a lot .The problem is that we although having many apps but they offer different kind of services .The customers are enjoying a lot but there is a lack of relationship between travel agency and customers and hence we are establishing that relationship by caring and serving all customers in the same manner that we wish to be served .We need to build a world class team armed with knowledge and backed by technology to advise customers in planning of their holidays and to answer their queries. We will be putting an effort to provide the right choice to the people when they plan a holiday and beware them from the false advertising. We will provide them services which they need in duration of their holiday and we'll like to hear from our customers because customer feedback will encourage us to improve our services. We also manage some entertainment services during travel if you required. In this app you can choose any favourite place you want to visit by search or fetch by your nearby and enjoy a lot. We provide best hotel for relaxation, best food and water for your health, best travel services, hot water and shower for your better refreshment.

LIST OF FIGURES

CHAPTER -1

INTRODUCTION

INTRODUCTION TOPROBLEM

The tag line says " ***MARGDARSHAK***". It is a complete android applicationon the internet that is dedicated to travel. These apps may be focused on travel reviews, trip fares, or a combination of both. Many travel apps are online travelogues or travel journals, usually created by individual travelers and hosted by companies that generally provide their information to consumers for free. The purpose of these apps is established fact that Internet users are increasing today. One of the main purposes of these apps is to facilitate the offline customer online because customers cannot spend their precious time in markets trying to find out the best deal. India is a country where in a few days holiday, you can enjoy a lot .The problem is that we although having many apps but they offer different kind of services .The customers are enjoying a lot but there is a lack of relationship between travel agency and customers and hence we are establishing that relationship by caring and serving all customers in the same manner that we wish to be served .We need to build a world class team armed with knowledge and backed by technology to advise customers in planning of their holidays and to answer their queries. We will be putting an effort to provide the right choice to the people when they plan a holiday and beware them from the false advertising. We will provide them services which they need in duration of their holiday and we'll like to hear from our customers because customer feedback will encourage us to improve our services. We also manage some entertainment services during travel if you required. In this app you can choose any favorite place you want to visit by search or fetch by your nearby and enjoy a lot. We provide best hotel for relaxation, best food and water for your health, best travel services, hot water and shower for your better refreshment.

PROBLEM FORMULATION ANDMETHODOLOGY

Problem Statement:

To create an android application which will give services to atourist.A tourist needs modern technologies which can serves forthem.So the android application should be easy to use and efficient to manage the traveling activities. Due to unavailability ofsuch application tourists are facing problems while traveling to cities.They have to pay handsome amount of traveling budgetto local guides and agents to get information.The proper tourist guide is not available which could detecta current location, calculate distance and provide proper direction to the destination. Different problems are arise while a tourist and travel to a tourist spot which we can address bydevelopment of the system which will provide accurate globalpositioning system (GPS) coordinates, provide proper real timedirection, textual and pictorial information about the location.A concise explanation of some of the major
Challenges are givenbelow:

Objective:

- The aim to design and develop the project is to producea tourist guide for city, the application is to beuser friendly tourist guide over android operating system for city which is not available currently for smart-phones. Due to domestic and international tourist flow incitys such application is helpful for the tourists.Nowadayspeople prefer to use android application due to easy, conveyance usage.
- To change the traditional techniques of human guides by using printed maps and written information. The traditionaltechnique might create problems while decision making dueto lack of information of guide. Because in some cities only in summer people working as guide.
- To avoid getting services from people which we need toengage as guides.The application serves as virtual guide tofacilitate to a tourist with interactive Google Maps.
- To provide location base services for tourist using GPS coordinates.
- To calculate distance between current locations to desiredlocation.
- To provide basic information about the tourist spots.
- To facilitate tourism industry by using modern technologiesto boost tourism.
- To make available desired direction services and compassfor right direction.

Limitation and Scope:

Scope

- It supports almost 90% android phones
- After searching a location using Internet we can use that location data outline.
- It can be use without sign-up

Limitation

- It required a device (smartphones) which should have installed android operating System.
- It could only locate the locations which the developer markedon the map by custom markers
- Internet, global positioning system (GPS) and cellular datarequired continuously.
- It cannot be run on personal computers without any virtualdevice.

CHAPTER -2
LITERATURE REVIEW

The chapter has been discussed the features of tourist guide styles and examined various existing application for finding places,distance calculation and other functionalities.

2.1 Static Map Approaches:

Some application providing information using static maps. These maps are not interactive so the user could not find real locationbased services. The user need interactive maps instead of staticmaps for proper guidance.

There are many map application which shows the data in the following formats:

- Textual information
- Pictorial information
- Static maps
- Graphs
- Tables

2.1.1 The Services Based on Location:

The Services Based on Location gives a customized option to client situated in a situation from geographic location information of provided by database. This facility uses geographic information systems ,this kind of information can be obtain from customer side, as GPS, or server side, as positioning service accommodated for the cellular network operator, and communication tech of system to transmit info to an application that can process and answer the requested service.

2.1.2 Security:

Android architecture is secure and softwares of Android arecoded with the computer programming languages Java, XML with the Software Development Kit (SDK) tools of Android the code is compiled into an Android package kit (.apk), this bundle may be use in Android devices. The operating system consider every application like a novel Linux client, every application keeps running in its own procedure, which will run in isolation from another.

2.2 Challenges:

The challenge solved by mobile was capability to obtain exact place from the desired location, user's location map, calculating distance between two places, forecast the weather condition ,and the multimedia information. Research reveals that manysoftware have been created, but the specific information whicha tourist need mainly fetch from the newspapers,advertisementsand magazines these sources do not give accurate information when tourist on traveling.

2.3 Existing Solutions:

keeping in mind these issues many applications have been recommended by different authors during last decade to effectively and efficiently control the tourism industry by giving differentsolutions.

- Islamabad City Guide is one of the city guides. It doesnot use Google maps and GPS (Global Positioning System)it uses static maps and pictures to show the places. It does
- not provide location base services.
- Smart Tourist Guide provided the guide layout andimplemented the guide as mobile application namely smart travel guide, the mobile phone users can search for tourism related guidance as per their needs. using smart travel guide, travelers can get an attraction's concise information, like textual, pictorial and video. Specially, the smart travel guide is able to give information to the travelers about a location, which can be accessed using a map. Traveler can find the close by places and visit thespot. As they moves the application updates the user's position on the map.
- BE-ON-THE-ROAD kind of softwares mainly providesnavigational services. An application which provides this feature is BE-ON-THE-ROAD. It uses Google maps but its interface is not user friendly and does not provide writ- ten and pictorial information about the location. AnotherGuide namely Navigation shows all routes of major cities on the basis of GPS coordinates. In the proposed project theuser easily use this feature and the interface is user friendly.
- BRouter is also provide navigational services.But the difficulty with this application is that every time when we startthe application it request for download the map to device.
- Which could not be the recommended method to provide navigational services to a tourist. So in my propose project solves this issue by providing direct access to the map.GPS Route finder is a good application to find distancesbetween two locations and it calculation but it does notprovide any other services expect the distances calculations.This feature is also include in the proposed project.

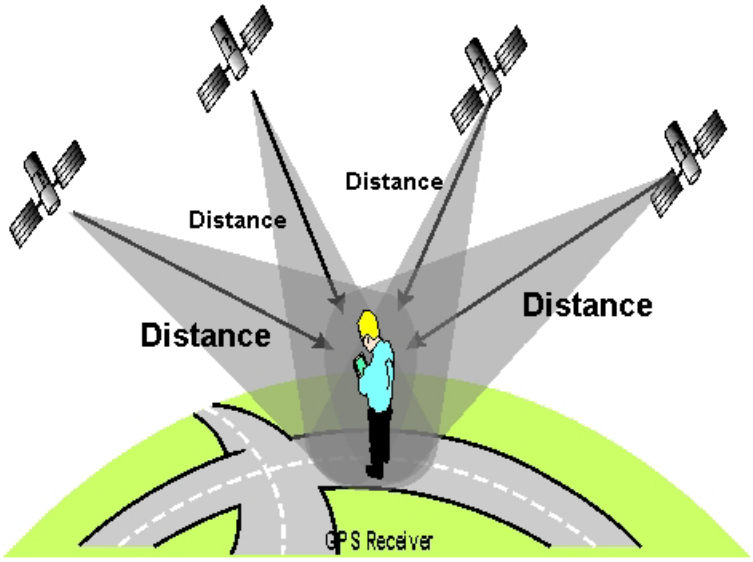

Figure 2.1: Global Positioning System (GPS) with 4 satellite connected out of 24

GPS has its importance in transport and carriage systemaround the world. It gives correct site information for as manyof people as in the world. GPS satellites sends signals fromsky which are receive by the receivers, there could be a single receiver or built-in to a device which the receives.It provides with 3D information: altitude, latitude,and longitude.If the client device capable of a G.P.S(Global Positioning System)

which is necessarily include into modern smart phones, the user's location can easily and accurately be locate.

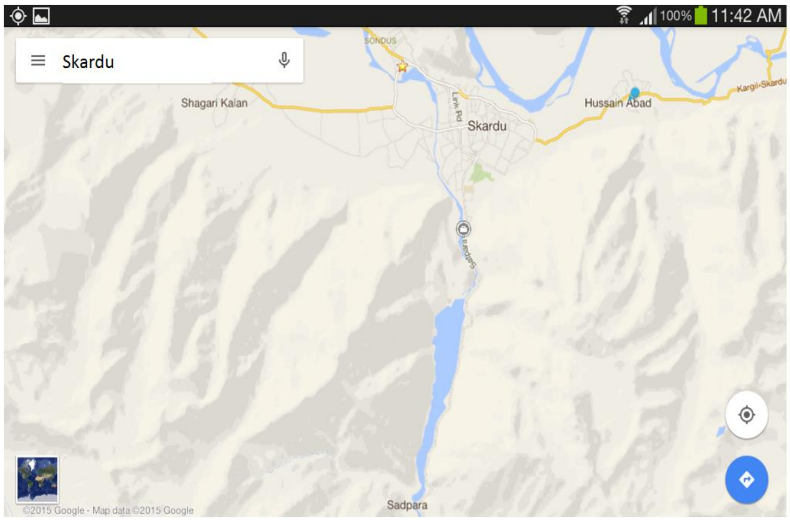

Figure 2.2: Google Maps

2.4 Use of Google Map API:

The following tasks which are important to accomplish using the Google Maps API efficiently:

- To show directions from point A to point B.
- To place a marker on map based on GPS coordinates.
- Place multiple markers based on the data retrieved fromthe GPS.
- Add layers (such as the traffic layer).
- Fit the map to the bounds.

2.5 Location Detection:

The globe positioning system (GPS) is a navigation system component consist of a network of 24 (as shown in figure 2.2)outer earth satellites moving into an orbit launched by theAmerican defense department. Initially GPS was used by the army in different applications, but in the 1980s, they announced that now may use by general public.21 dedicated GPS satellites

and 3 spare satellites are rotating around the earth at an altitude of about 10,600 miles. The satellites are set in such a way that four satellites still over the sphere, from any point on the earth. Each of the satellites has an atomic clock, a radio and a customized computer. The satellites continuously send their location information and time readings. At least once in a day,

each satellite confirms its location and time with a earth station,to check any minor error in the broad casted information.Location detection is a basic part of this software which include sensing the location on map. For classification it uses. Latitude and longitude coordinates.It is necessary to discoverthe correct location of the device on the maps. Location discovery is a straightforward and fast method to identify the device location on a map.

Each position has a distinct number latitudeand longitude, it could be use this information to detect the location/region on a map.Primary and important reason to utilize this method is that use of global positioning system (GPS) is around the globe and free facility. The accuracy of device is approximately within 10 meters and it is usually sufficient to find the location of the GPS device. The software automatically discover and point the location onGoogle maps which is already integrated with this application.

Haversine formula:

$$a = sin^2(\Delta\varphi/2) + \cos\varphi 1 \cdot \cos\varphi 2 \cdot sin^2(\Delta\lambda/2)$$

$$c = 2 \cdot atan2\ (\sqrt{a}, \sqrt{1-a}\ )$$

$$d = R \cdot c$$

where φ is latitude,λ is longitude, R is earth's radius (mean radius = 6,371km); note that angles need to be in radians to pass to trig functions!

CHAPTER -3

METHODOLOGY

The proposed project uses Google Maps APIs for finding a location , calculate distance between two places and showing information about a location.

3.1 Android Architecture:

The Android operating system composed of five main layers as shown in figure 3.1. These layers included Application, libraries of different nature, Kernel of Linux which is core of OS, framework of application and the last is runtime android. Top level layer is called android application layer in any android system.Here we can find some important feathers like short messaging service applications, electronic mail applications, calls, calendars, browsers , maps, contacts. Java is main language to develop these components.Framework of application is the next and second layer of android architecture. This is outline or framework which uses by software application developers. Application programming interfaces are available for development purposes.it consist of basic tools and use to create more complex applications in android.

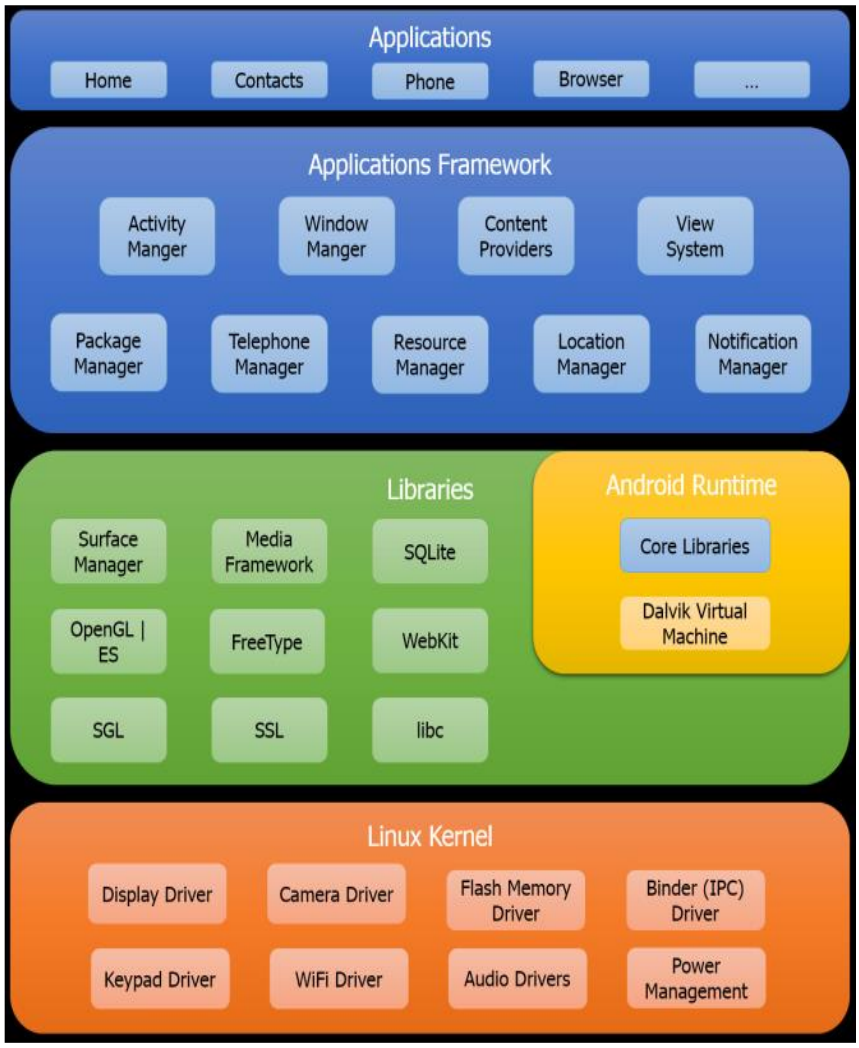

Figure 3.1: Android Architecture Reprinted from androidhavies.com

The layer which is use by different Android system components. Developers fallow the available libraries in framework of Application. Developer use these libraries for common tasks or reuse system functions for their own purpose. The layer four of this architecture is the Android Runtime. Dalvik virtual machine is use by android as Java uses virtual machine to provide environment to application on runtime. It is a special software which create new processes independently for android application. Linux kernel is the last and fifth layer in android architecture.Linux kernel's Linux version 2.6 is use by the android. It is used for memory management, power management software, file system access, networking, inter process communication, security settings and several drivers for hardware. The Kernel hides the hardware from the user of software.

3.2 Life Cycle of Android Application:

An Activity in Android can exist in four states as described below: In android an activity could be use in four states as written and shown in figure 3.2

3.2.1 Active and Running state:

In this state the activity runs in front and shows focus on it.Ituser uses actively and observable completely.

3.2.2 Paused state:

In this state, the program is partly observable to the user butit is not visible to user and unfocused. This happen when some other activity is running which doesn't cover up the whole screen or having some clearness so that the partly visible activity is in Figure 3.2: Android Application Life Cycle reprinted from strawower.comoriginal Activity. The activity which paused activity is entirely alive and keeps its state but it can be stop by task manager where we have an option to clear currently running applications.

3.2.3 Stopped state:

When the main screen not showing the activity is called stopped state.It completely unclear the view and running another activity. In this stopped state also the activity running in background and uses resources like memory etc, but it can be stop by task manager where we have an option to clear currently running applications.

3.2.4 Destroyed/Dead state:

When a running application is no more in memory called a dead/destroyed state.May be the application is not started or after starting the application is cleared from memory to save memory resources. The figure 3.2 below shows the android activity life cycle ow chart. It need be studied by the developersas it’s an important state. Life cycle of an android application can be shown as under. The above Life cycle of an android application figure canbe explained as under:

- On starting of an Activity in Android smartphone, it calls the onCreate() function.In this time it initializes the data essentials and creates User Interface.
- onStart() function is called even user have not seen the activity yet. The activity is still stopped so we should know why.
- With the onResume() function, user can interact with activity and can see it on screen. In activity stack the position of activity will be at the top. Now the application is in running state and inputs can receives from the user.

- when it is in the Active state, onPause() function could be accessed the application is ready to resume when the user presses the home button or one other activity is running on the top of this one.
- One activity or notification is on top of it doesn't totally unclear the visibility of actual activity. The smart phone goes to sleep.
- The activity could goes to paused state in below three conditions: The user resumes the Activity by closing the new Activity or notification and the paused Activity gets Active/Runs as calling onResume() functions. If the battery is totally low condition then it gets killed . then it is not possible to call any other functions before destroying the Activity and it required to be run again from the starting by getting onCreate() and restoring the last configuration from the bundle object. Otherwise it calls onStop() function to move it to stop state.When the user presses back button this action is performed by default. or it resumes on the top by totally covering by a new activity.
- In stopped state there could be three distinct cases as under: To free the memory resources the OS could kill: An activity under stopped sate is more probably to be clear from the memory by the system than one in the paused state. It needs to start the restart again with onCreate(). It get start again by calling onRestart() , onStart() and onResume() functions properly if the user presses back button to the Activity again. In this scenario, the User Interface is on its place and it is not necessary to restart. OnDestroy() function is called and the Activity is dead/destroyed. This is the final function we can call before the Activity is dead. This happen in two cases: 1. The Activity is completed theits job. 2. The application is temporarily created to save the memory space..

3.3 Android Versions and Its latest comparison:

An important aspect of Android operating system is its different versions. These version are improving and providing new services to users. As the smartphones' hardware improving and capable to provide more services the Android operating system also side by side improves itself. The latest usage comparison is as under.

(*Data collected during a 7-day period ending on June 1, 2015*)

Version	Codename	API	Distribution
2.2	Froyo	8	0.3%
2.3.3 - 2.3.7	Gingerbread	10	5.6%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	5.1%
4.1.x	Jelly Bean	16	14.7%
4.2.x		17	17.5%
4.3		18	5.2%
4.4	KitKat	19	39.2%
5.0	Lollipop	21	11.6%
5.1		22	0.8%

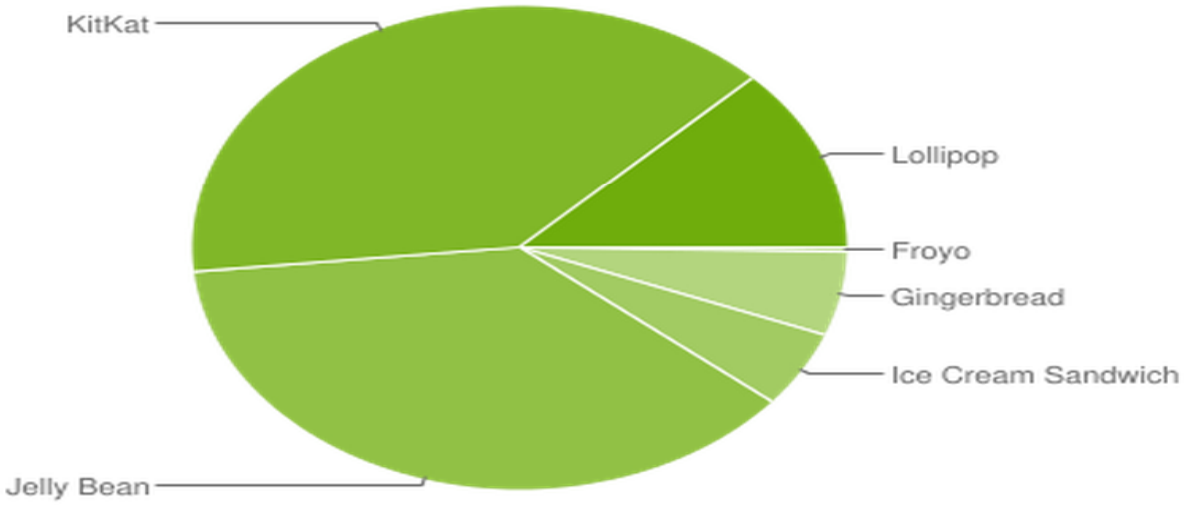

Figure 3.2: Android Versions and Its latest comparison (Picture Reprinted from PhoneDriod.com)

3.4 Project Contribution

The actual contribution by this project is to show a comprehensive understanding and realization of city guide on the android operating system as new developmental platform. Now we can see many examples of city guide on other platforms such as Windows Mobile, iPhone etc. However, there are no any city guides for city. This project encapsulated basic features of city guide such as showing Google maps, locating users location, getting information of tourist spots, basic information, showing different routes by directions, and choose outline information about different facilitates like hospitals, shopping centers, carrentals, checking about the latest weather conditions, keep in touch on social networking and looking for nearby places on the map.This project have six main parts as under

3.4.1 Locations:

It's an important part of this application which shows location in city like hospitals, car rentals , pharmacies, shopping center, and many other location online. It shows phonenumbers, addresses , email(if available) and website addresses(ifavailable) as shown in figure 3.5.

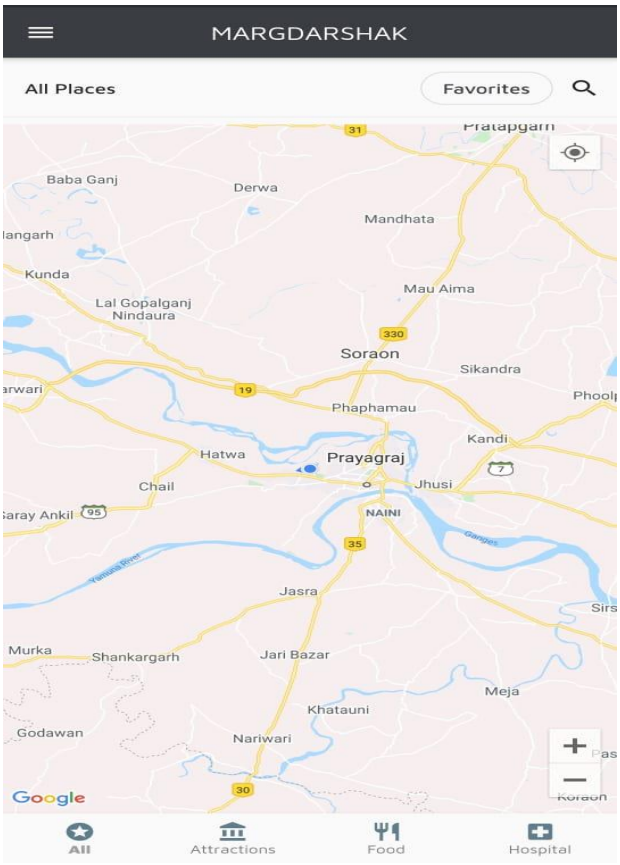

Figure 3.3: Showing current location

3.4.3 Nearby Places:

Google have its another important API called Google places API which detects current coordinates of tourist and according to its location shows nearby places it helps users to locate nearby places as shown in figure 3.6.

Figure 3.4: Showing nearby places

3.4.4 Map Marker Information:

This option shows the map and customize markers which shows the required information about a location.A picture and some text briey describes a location on the map as shown in figure

3.5 Development

3.5.1 Software Process Model :

To solve actual problems in an industry, software developer or a team of developers must incorporate a development strategy that encompasses the process, methods and tools layers and generic phases. This strategy is often referred to as process model or a software developing paradigm. A process model for software developing is chosen based on the nature of project and application, the methods and tools to be used, and the controls and deliverables that are required. All software development can be characterized as a problem solving loop in which four distinct stages are encountered: Status quo, Problem definition, technical development and solution integration.

Regardless of the process model that is chosen for a software project all of the stages coexist imultaneously at some level of detail.
Our Project Follows the Waterfall Model
THE WATERFALL MODEL
The steps of the typical Waterfall Model are:
1. Requirement Definition
2. System & Software Design
3. Implementation
4. Integration & System Testing
5. Operation and Maintenance

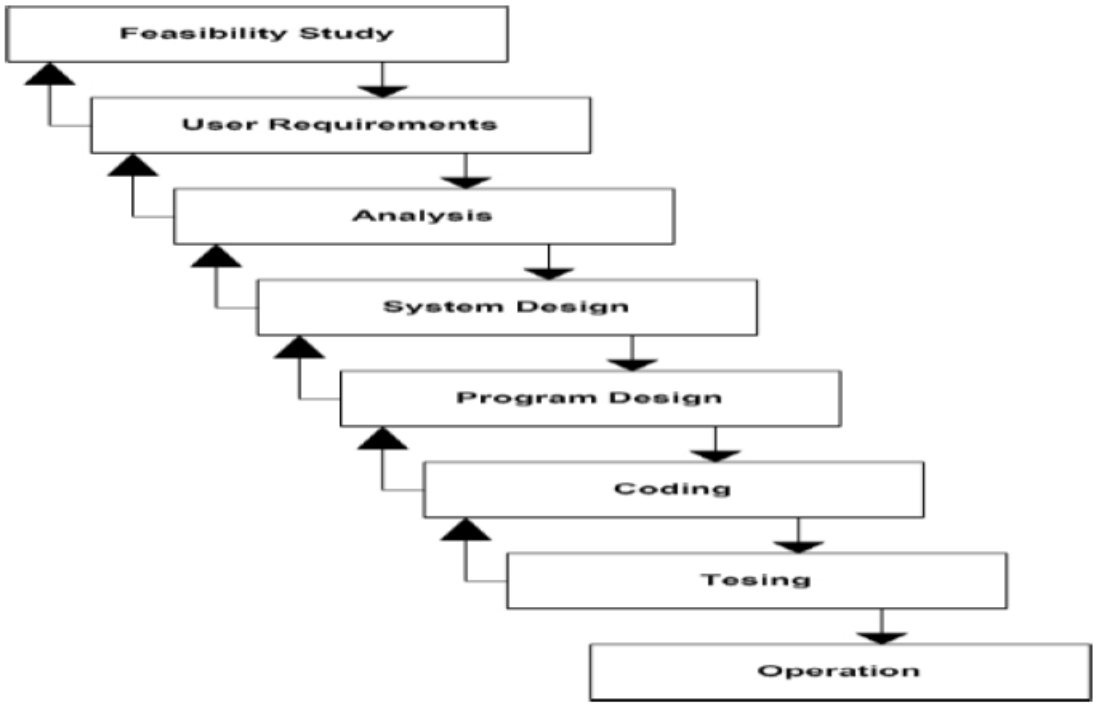

Figure3.5 :WaterFall Model

- State transition Diagram: State transition diagrams. A state transition diagram is used to represent a finite state machine. These are used to model objects which have a finite number of possible states and whose interaction with the outside world can be described by its state changes in response to a finite number of events.

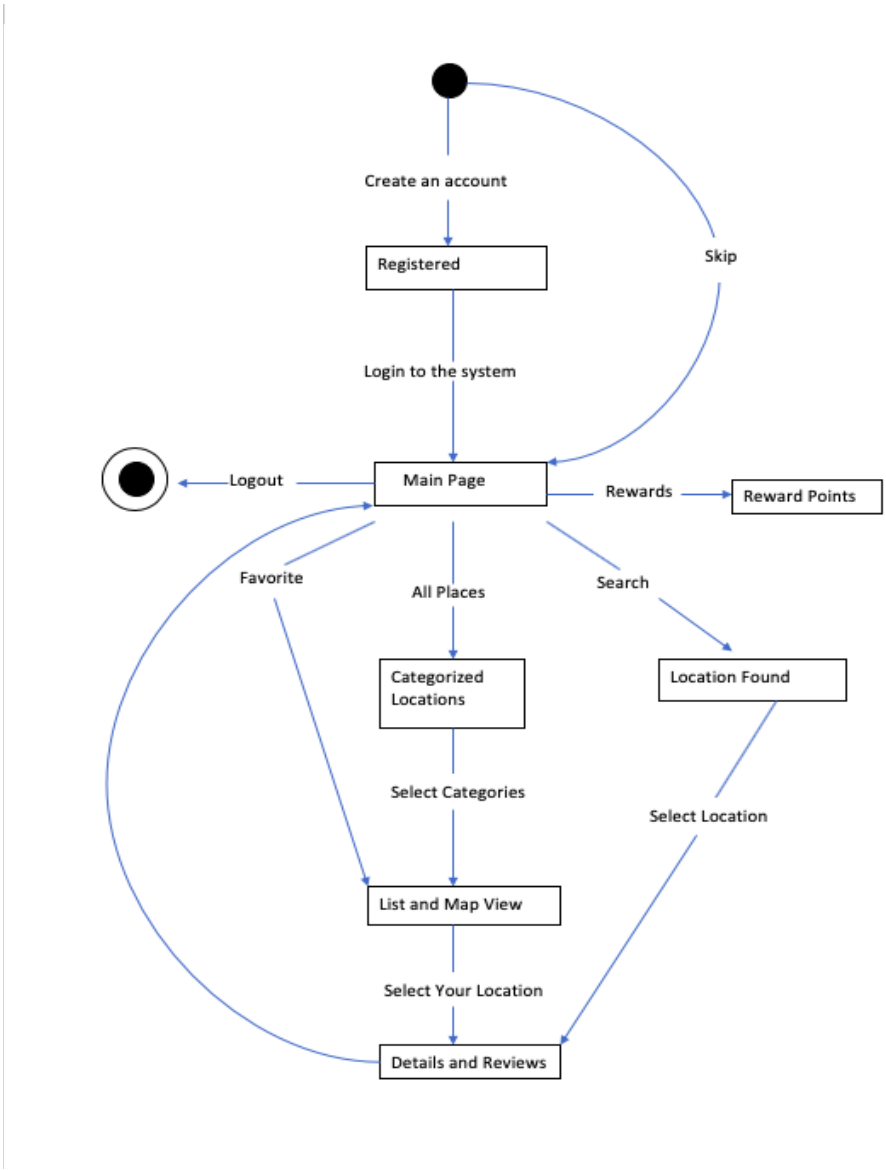

Figure 3.6:StateTransition Diagram

3.5.2 Tools and Technologies Used:

Tools:

- Android Studio: It is the official[7] integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.[8] It is available for download on Windows, macOS and Linux based operating systems or as a subscription-based service in 2020.

  It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development.

  Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage

starting from version 0.8 which was released in June 2014.[11] The first stable build was released in December 2014, starting from version 1.0

On May 7, 2019, Kotlin replaced Java as Google's preferred language for Android app development.[13] Java is still supported, as is C++.

- Firebase: Firebase evolved from Envolve, a prior startup founded by James Tamplin and Andrew Lee in 2011. Envolve provided developers an API that enables the integration of online chat functionality into their websites. After releasing the chat service, Tamplin and Lee found that it was being used to pass application data that were not chat messages. Developers were using Envolve to sync application data such as game state in real time across their users. Tamplin and Lee decided to separate the chat system and the real-time architecture that powered it.[3] They founded Firebase as a separate company in September 2011[4] and it launched to the public in April 2012.

  Firebase's first product was the Firebase Real-time Database, an API that synchronizes application data across iOS, Android, and Web devices, and stores it on Firebase's cloud. The product assists software developers in building real-time, collaborative applications.

  In May 2012, a month after the beta launch, Firebase raised $1.1 million in seed funding from venture capitalists Flybridge Capital Partners, Greylock Partners, Founder Collective, and New Enterprise Associates.[6] In June 2013, the company further raised $5.6 million in Series A funding from Union Square Ventures and Flybridge Capital Partners.[7]

  In 2014, Firebase launched two products. Firebase Hosting[8] and Firebase Authentication.[9] This positioned the company as a mobile backend as a service

  In October 2014, Firebase was acquired by Google.[10] A year later, in October 2015, Google acquired Divshot, an HTML5 web-hosting platform, to merge it with the Firebase team.

Technologies:

- Android: Android is an open source and Linux-based **Operating System** for mobile devices such as smartphones and tablet computers. Android was developed by the *Open Handset Alliance*, led by Google, and other companies.

  Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.

The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 where as the first commercial version, Android 1.0, was released in September 2008.

On June 27, 2012, at the Google I/O conference, Google announced the next Android version, 4.1 **Jelly Bean**. Jelly Bean is an incremental update, with the primary aim of improving the user interface, both in terms of functionality and performance.

The source code for Android is available under free and open source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.

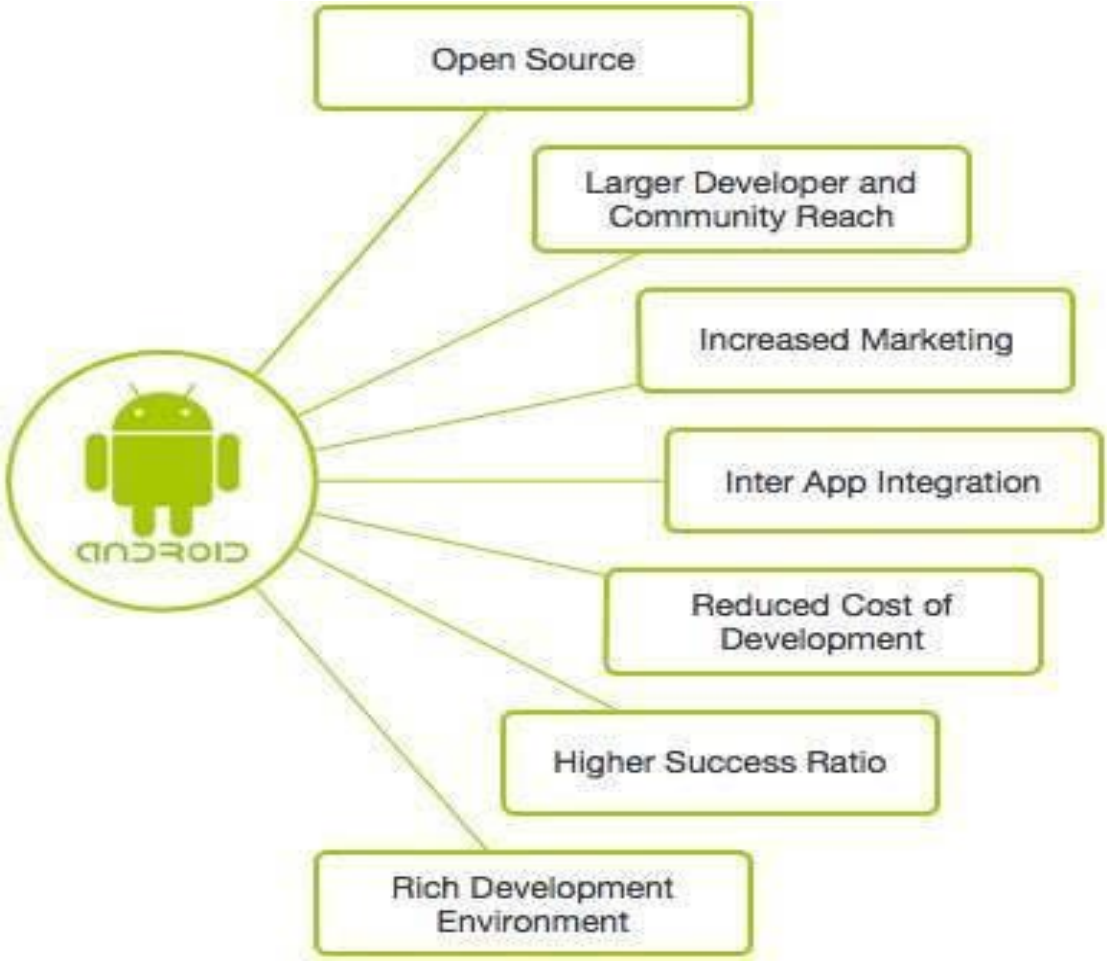

Figure3.7:Why Android

- Flutter: In general, developing a mobile application is a complex and challenging task. There are many frameworks available to develop a mobile application. Android provides a native framework based on Java language and iOS provides a native framework based on Objective-C / Swift language.

  However, to develop an application supporting both the OSs, we need to code in two different languages using two different frameworks. To help overcome this complexity, there exists mobile frameworks supporting both OS. These frameworks range from simple HTML based hybrid mobile application framework (which uses HTML for User Interface and JavaScript for application logic) to complex language specific framework (which do the heavy lifting of converting code to native code). Irrespective of their simplicity or complexity, these frameworks always have many disadvantages, one of the main drawback being their slow performance.

In this scenario, Flutter – a simple and high performance framework based on Dart language, provides high performance by rendering the UI directly in the operating system's canvas rather than through native framework.

Flutter also offers many ready to use widgets (UI) to create a modern application. These widgets are optimized for mobile environment and designing the application using widgets is as simple as designing HTML.

To be specific, Flutter application is itself a widget. Flutter widgets also supports animations and gestures. The application logic is based on reactive programming. Widget may optionally have a state. By changing the state of the widget, Flutter will automatically (reactive programming) compare the widget's state (old and new) and render the widget with only the necessary changes instead of re-rendering the whole widget.

We shall discuss the complete architecture in the coming chapters.

Features of Flutter

Flutter framework offers the following features to developers −

- Modern and reactive framework.
- Uses Dart programming language and it is very easy to learn.
- Fast development.
- Beautiful and fluid user interfaces.
- Huge widget catalog.
- Runs same UI for multiple platforms.
- High performance application.

Advantages of Flutter

Flutter comes with beautiful and customizable widgets for high performance and outstanding mobile application. It fulfills all the custom needs and requirements. Besides these, Flutter offers many more advantages as mentioned below −

- Dart has a large repository of software packages which lets you to extend the capabilities of your application.
- Developers need to write just a single code base for both applications (both Android and iOS platforms). *Flutter* may to be extended to other platform as well in the future.
- Flutter needs lesser testing. Because of its single code base, it is sufficient if we write automated tests once for both the platforms.
- Flutter's simplicity makes it a good candidate for fast development. Its customization capability and extendibility makes it even more powerful.
- With Flutter, developers has full control over the widgets and its layout.

- Flutter offers great developer tools, with amazing hot reload.

Disadvantages of Flutter

Despite its many advantages, flutter has the following drawbacks in it −

- Since it is coded in Dart language, a developer needs to learn new language (though it is easy to learn).
- Modern framework tries to separate logic and UI as much as possible but, in Flutter, user interface and logic is intermixed. We can overcome this using smart coding and using high level module to separate user interface and logic.
- Flutter is yet another framework to create mobile application. Developers are having a hard time in choosing the right development tools in hugely populated segment.
- Dart: Dart was unveiled at the GOTO conference in Aarhus, Denmark, October 10–12, 2011.The project was founded by Lars Bak and Kasper Lund Dart 1.0 was released on November 14th, 2013.

  Dart initially had a mixed reception and the Dart initiative has been criticized by some for fragmenting the web, due to the original plans to include a Dart VM in Chrome. Those plans were dropped in 2015 with the 1.9 release of Dart to focus instead on compiling Dart to JavaScript.

  In August 2018, Dart 2.0 was released, with language changes including a sound type system

  Dart 2.6 introduced a new extension, dart2native. The feature extends native compilation to the Linux, macOS, and Windows desktop platforms. Earlier developers were able to create new tools only using Android or iOS devices. Moreover, with this extension it becomes possible to compose a Dart program into self-contained executables. Thus, according to the company representatives, it's not obligatory now to have Dart SDK installed, the self-contained executables can now start running in a few seconds. The new extension is also integrated with Flutter toolkit, thus making it possible to use the compiler on small services (backend supporting for example).

  Google APIs: Google APIs are application programming interfaces (APIs) developed by Google which allow communication with Google Services and their integration to other services. Examples of these include Search, Gmail, Translate or Google Maps. Third-party apps can use these APIs to take advantage of or extend the functionality of the existing services.

  The APIs provide functionality like analytics, machine learning as a service (the Prediction API) or access to user data (when permission to read the data is given). Another important example is an embedded Google map on a website, which can be achieved using the Static maps API, Places API or Google Earth API.

CHAPTER -4

The APP

4.1 Login and Registration Page:

Login page is the starting functional page with which the user is greeted with when the app is opened. The login screen asks the user to enter email id and password. There is two verifications which has been used to verify the email. In the front end , the format of the email is checked. In the back end , database is checked if the email is already present there or not. If the E-mail is not present the user can simply click on the registration button and create account by entering the required details and creating a new password. The user while registering for the application cannot use the same id again to create a new one. This is also verified by the checking all the email list from the data base.
Also, if the user wants to continue without logging in, they can do so by clicking on the skin button provided on the bottom-right corner. This will bring the user directly on the interface of the application.
Here are the screenshots of both login and registration page respectively :

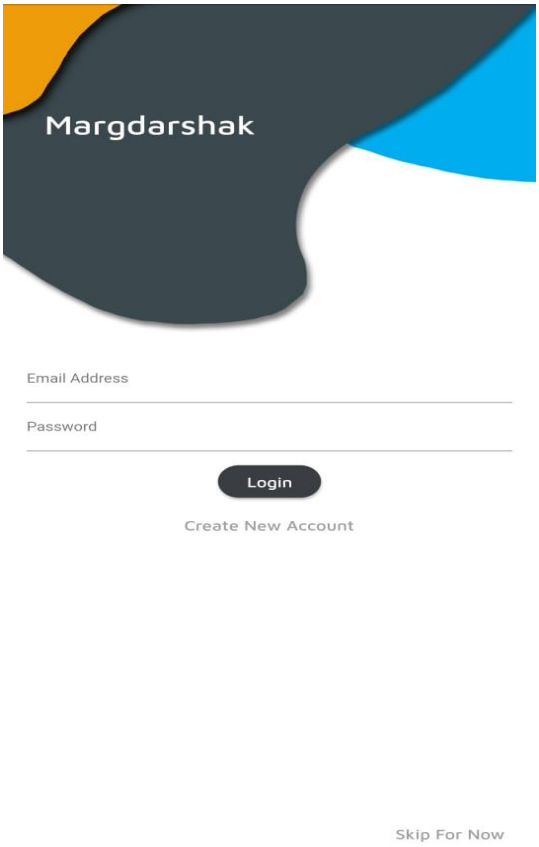

Figure 4.1:Login Page

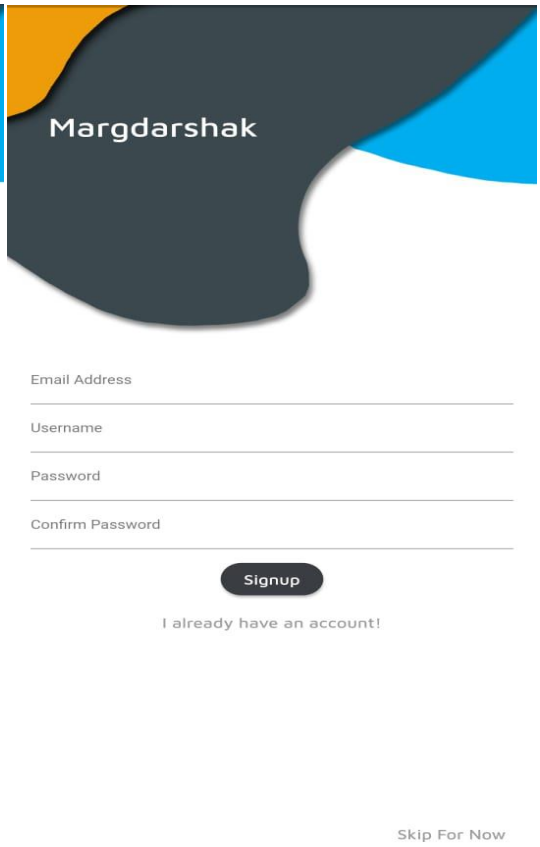

Figure 4.2 Registration Page

4.2 Default Page:

The first page that opens up after logging in or skipping the registration. This page is the main page which contains all the thing in the application and provides the user with different kinds of options. On the bottom, there are four buttons which can show different things on the map within a 20km radius. The user can also manage the rewards and see other things from the side menu. The map by default shows all the areas and user can use that to navigate. There is a button for seeing all the categories that we have put there by default.

BY clicking the buttons, the locations can get marked in the map and the user can click the marks and see more details about them.

Here is the screenshot of the page :

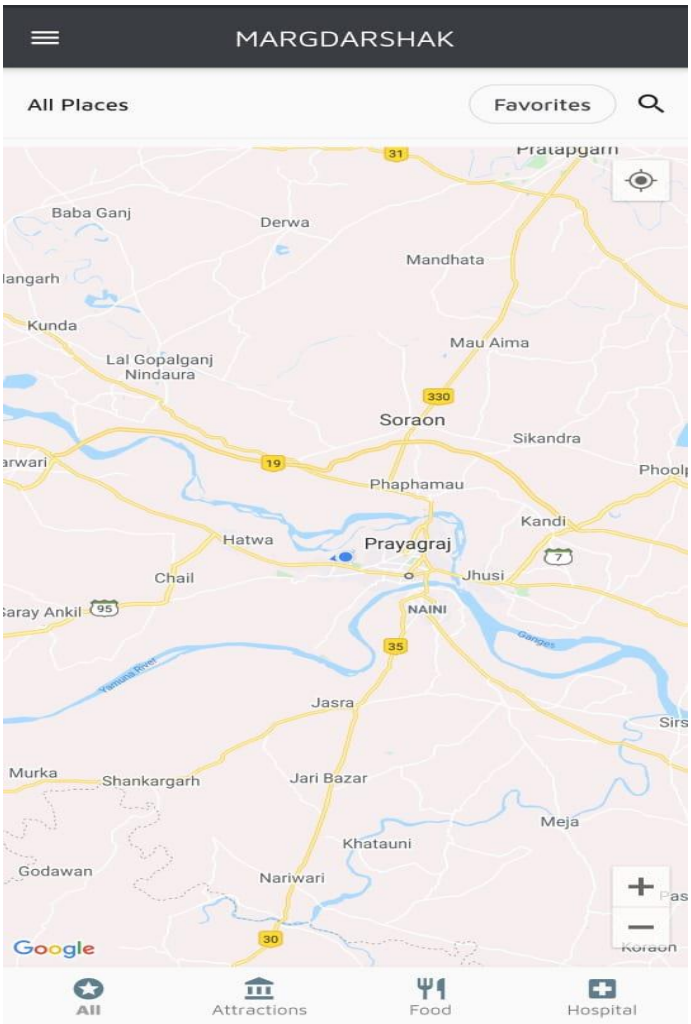

Figure 4.3:Default page

The button has four buttons in it. We have thought about the important stuff that a tourist is likely to search for more and here the four buttons that we have provided is there. There is one for the attractions. This button shows all the places that the tourist might want. There are mostly popular places. Next is the food button. This button searches for all the restaurant in the neighborhood and other places for eating. This is one of the most popular searches and is quite obvious. The third one is the Hospitals. This button is there for emergencies and provides a quick look at all the nearby present hospitals.
The final button is the all button in case you want to see all these places at once.

Users can tap on the markers for knowing the name of the place and on the the name to see more details of it.
Here is the screenshot of the page with all button pressed:

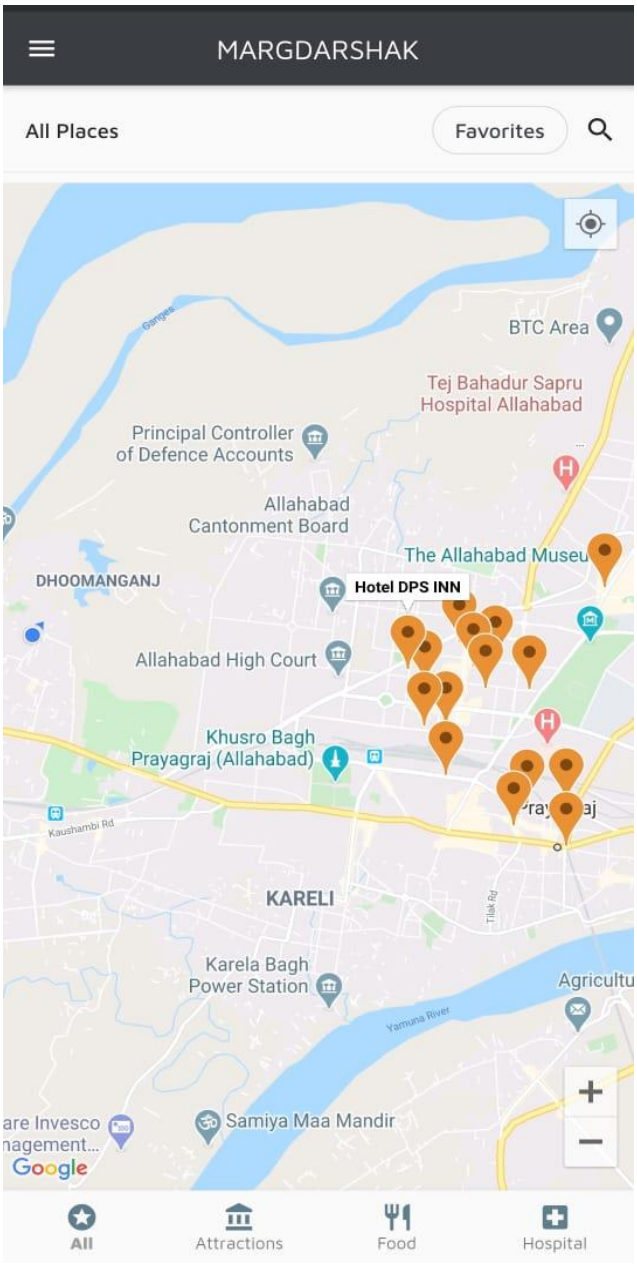

Figure 4.4:All button pressed

4.4 Search Button and All Places

There is a search button on the upper right corner. This button can be pressed to search the map by typing the name of a place or just name of categories.

All places has predefined categories in form of buttons which you can press and see all those places on the map.

Here is a screenshot of each of the buttons being pressed :

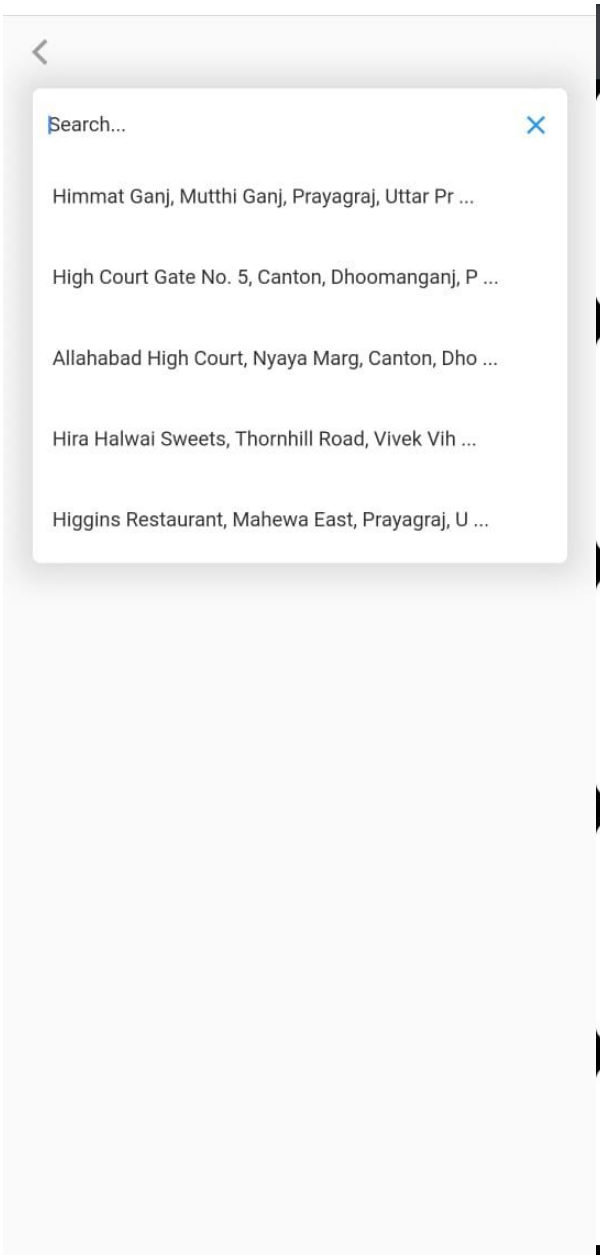

Figure 4.5 Search Button

Figure 4.6 All Places

4.5 Details and Review

You can click on the marker of a place and then click on the name of that place to see more details of that place. The details include the timings , address and reviews of other users. You can also submit your own review only if you have visited that place. The review which you can submit can include photo of that place also.

The details also show in a small window, a map in which you can see the route from your location to that place. The route will be highlighted with blue color. The user can use the maps to figure out the way to that place.

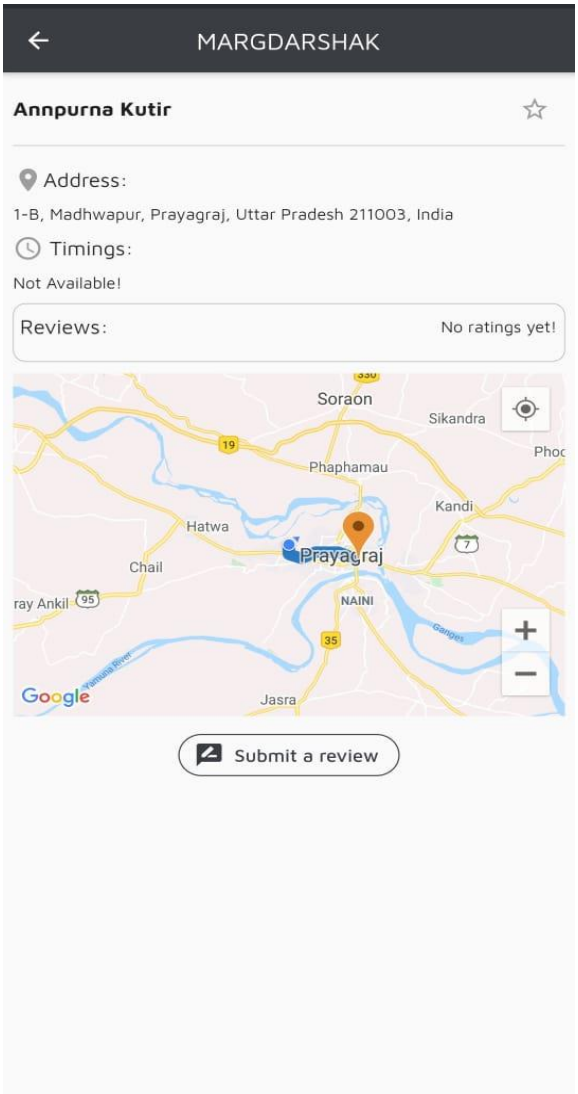

Figure 4.7:Details

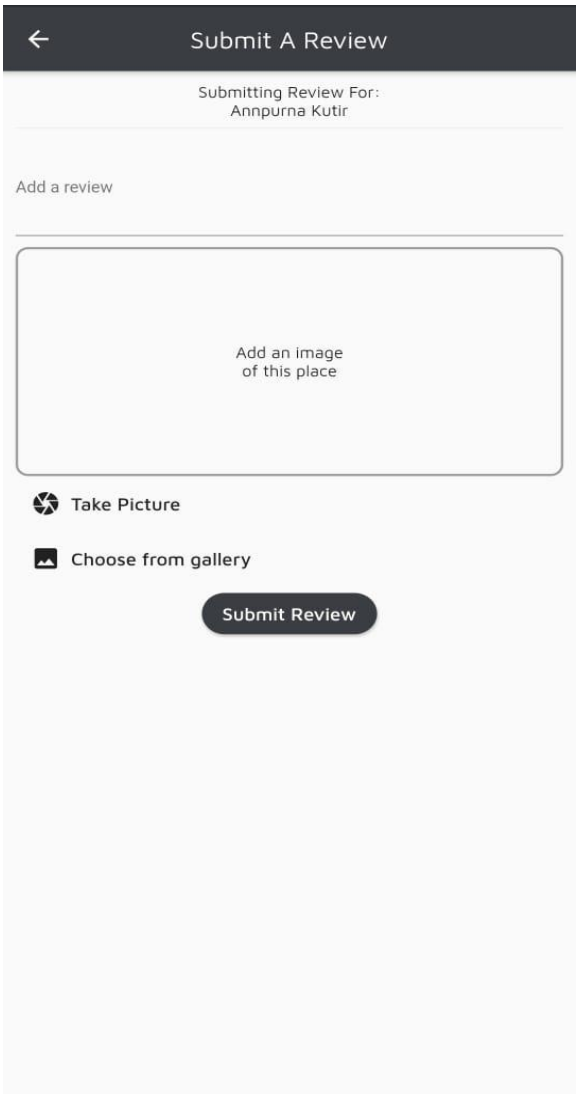

Figure 4.8 :Submit a review

4.6 Favorites

When you see the derails of a place you can mark that place as favorite by clicking on the star on the top right corner. By doing this you will add that app to the favorite category and then can be accessed by the by the favorite button on the default page and see the details of that place easily.

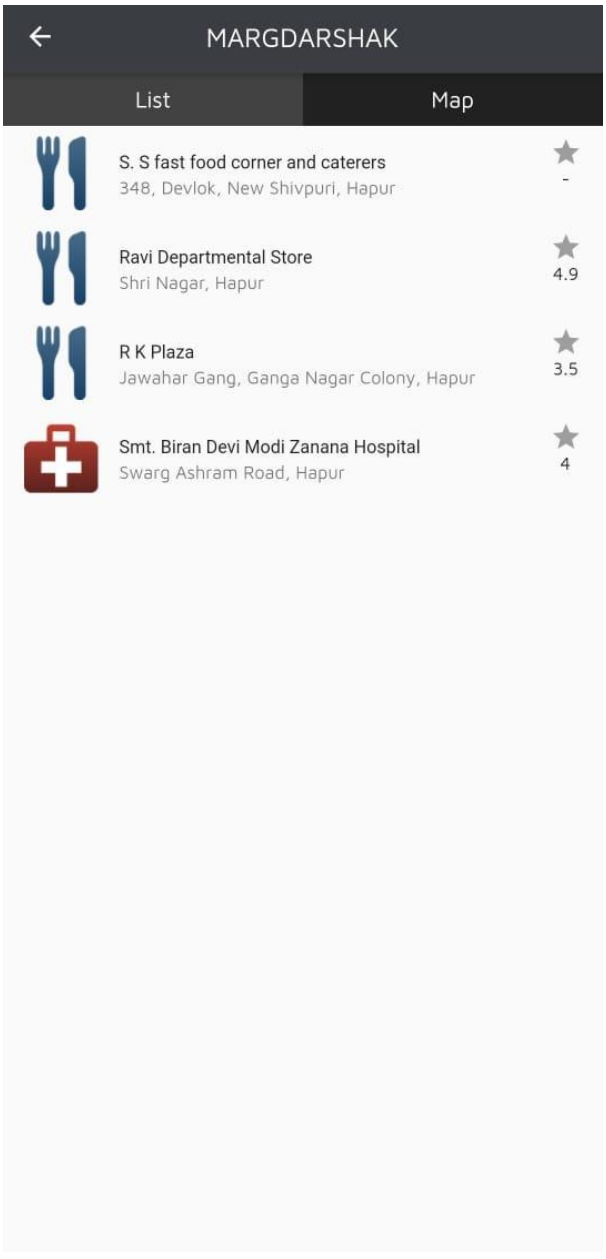

Figure 4.9:Favorite Page

4.7 Rewards:

Rewards is a special thing that we included in the app in which a user will receive for every honest review some points. These points can the later be redeemed. We have implemented this feature so that the user might give us honest and real reviews. The reward can only be given to a user once the user has logged in.

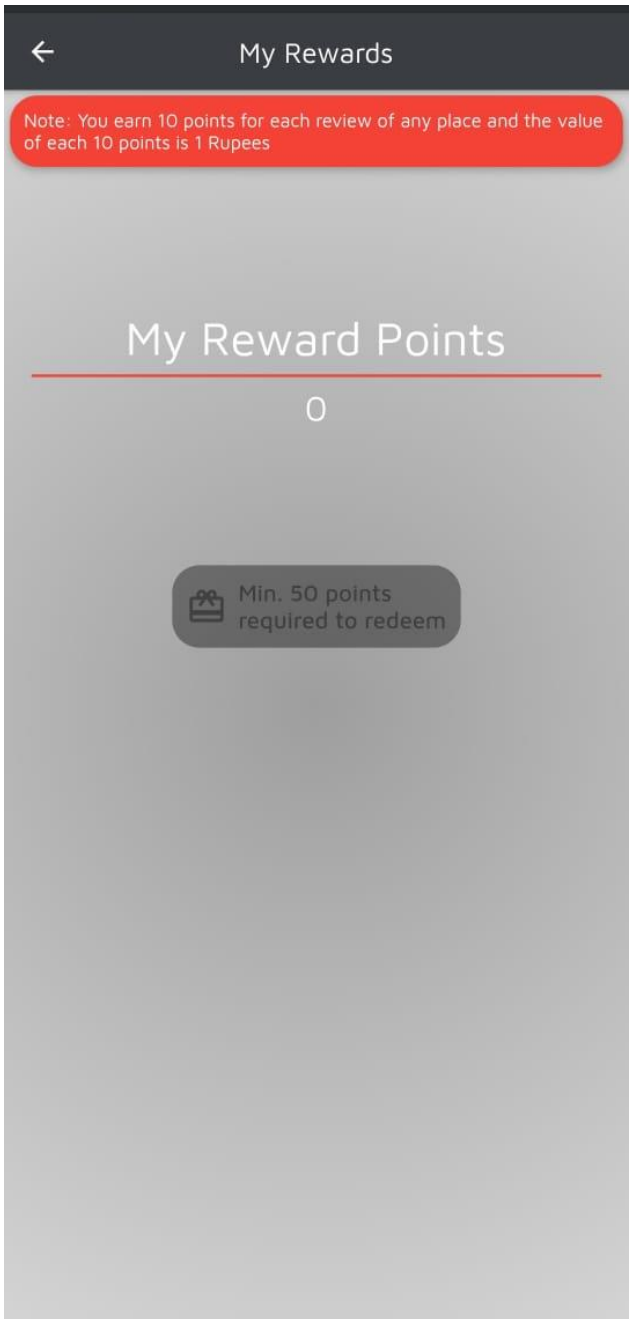

Figure 4.10:Rewards

4.8 Feedback:

The user can see all the reviews that they have given by clicking on this button which is present in the side menu. This can help the user to remember the places which he has reviewed without searching for them again. Also it can help us in the future to develop a profile of the user and recommend him places according to their needs.

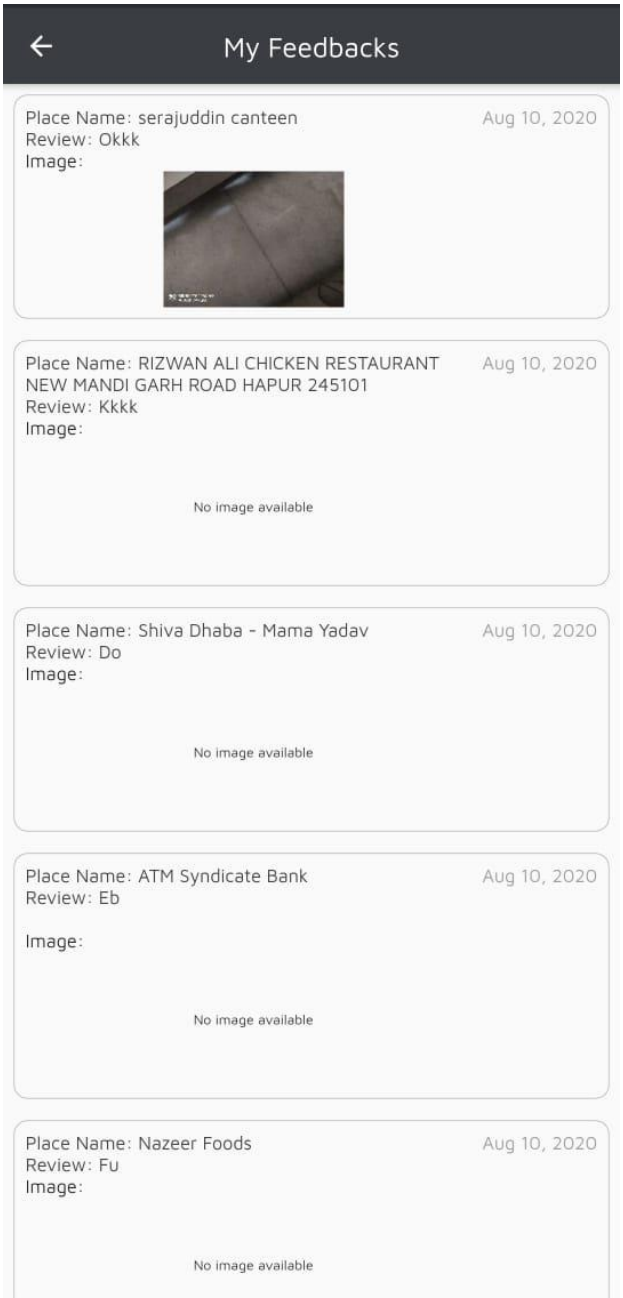

Figure 4.11:Feedback

4.9 Different Views

There are two types of views present in the app for the convince of the user. The views are present in the favorite section and in the categories which are inbuilt in the all places section.

One view is the default view of the map which present the places on the maps with markers.

The second view is the list view which presents all the places in a type of list so that the user can go through them very fast seeing their details at the same time.

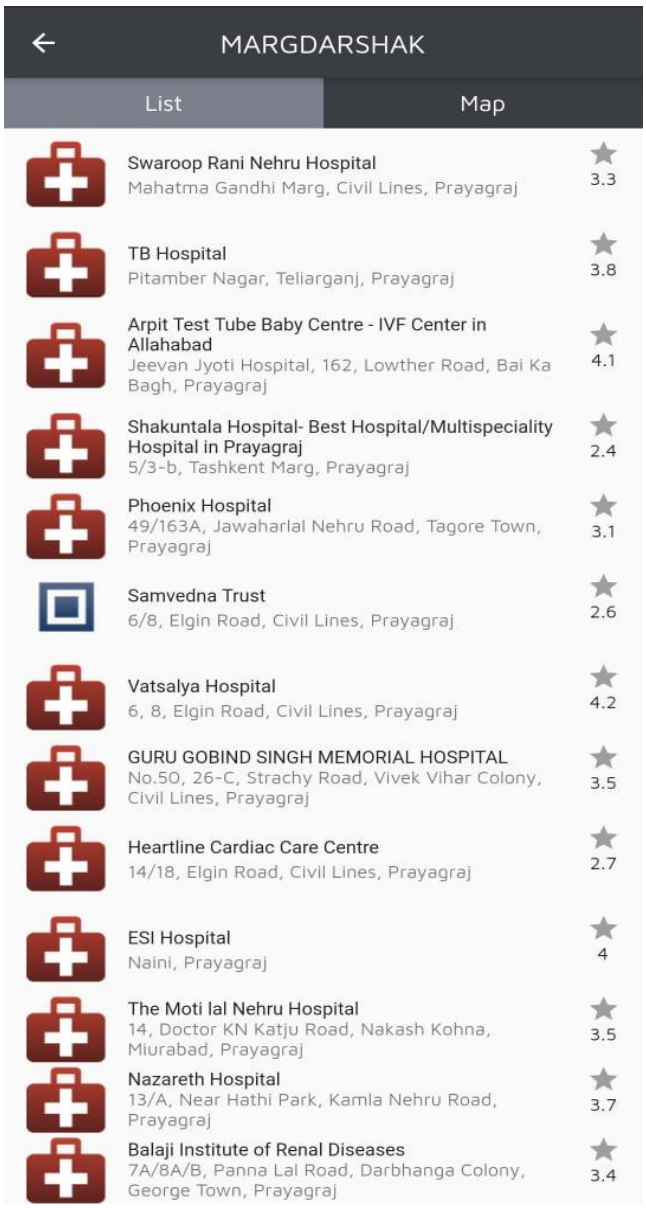

Figure 4.12:List View

4.10 About us and Contact Us

You can read about the app in about us and contact us through the given links of social media and a website on the contact us page.

Figure 4.13:About Us

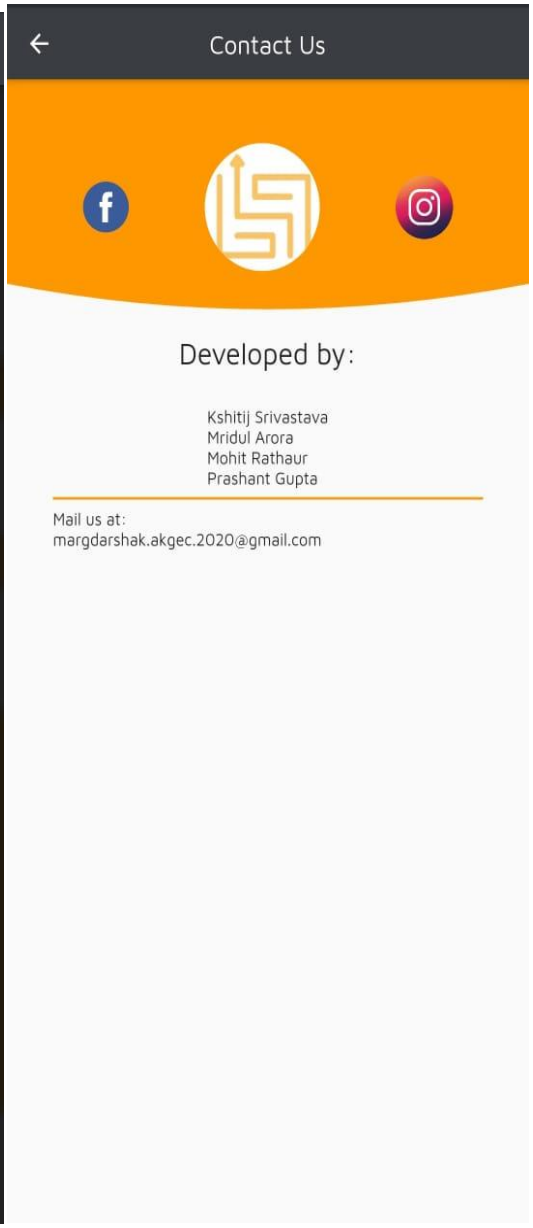

Figure 4.14Contact Us

4.11 Database: The Firebase Realtime Database allows data to be stored securely on Google cloud servers and synchronized in realtime across all clients sharing the same database.

This chapter will introduce the key concepts and capabilities of the Firebase Realtime Database within the context of Android app development. Subsequent chapters will work through the practical application of these concepts.

How Data Stored: Firebase uses what is known as a NoSQL database for storing data in a Realtime Database. As the name suggest this means that data is not stored in the tables and rows found in relational database management systems (RDBMS) such as Oracle Database or Microsoft SQL Server. Nor is the data accessed using Structured Query Language (SQL) statements. Instead, the data is stored in the form of a JSON object. JSON is an acronym for JavaScript Object Notation and it defines a syntax used to transmit data in a format that is both lightweight and easy for both humans and software to read, write and understand.

JSON objects typically consist of a key/value pair, where the key uniquely identifies the object within the database and the value represents the data that is being stored. Multiple JSON objects are structured in the form of a JSON tree.

The following JSON syntax, for example, declares a very simple JSON object:

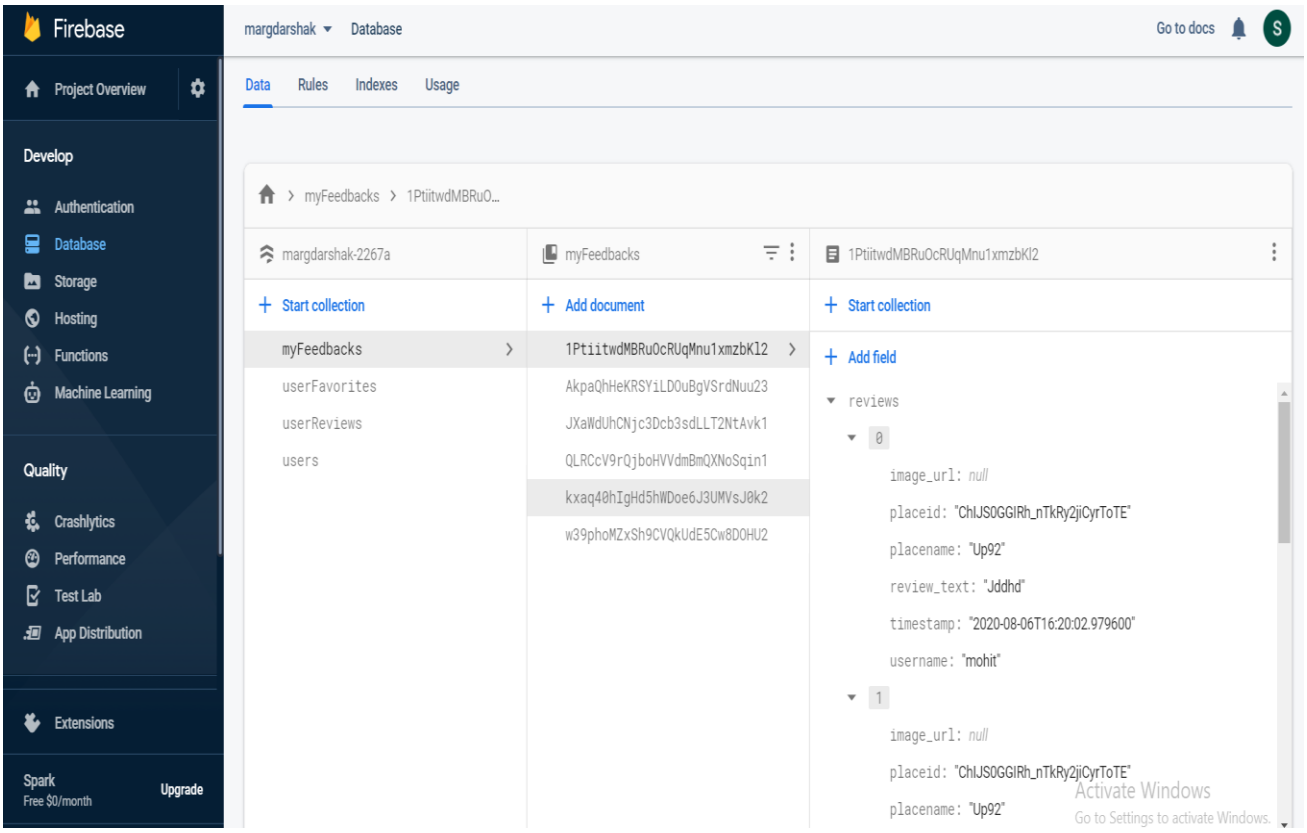

Figure 4.15: Feedbacks Database

CHAPTER 5

REQUIREMENTS

5.1 Development Requirements

5.1.1 Hardware Requirements

- Processor : Duel Core or Higher (Quad Core Recommended)
- RAM: Minimum 4 GB DDR3 or Higher(GB recommended)
- Internal Memory : 50 GB free Space
- Emulator or A physical device for testing

5.2.2 Software specification :

- Operating System : Windows , Linux , Mac OS X
- Software : Android Studio , Atom , Flutter , Dart , JSON , Firebase

5.2 User Requirements:

Margdarshak is a very light app which can be run on the smallest of devices which have very less processing power or RAM. Its is designer using the flutter framework which makes it faster and very light on the CPU. The app supports android version up to 6.0 Marshmallow and will run without any errors.

Chapter 6

CONCLUTION AND FUTURE DEVELOPMENT

6.1 Conclusion

The development of the app has been completed successfully. Almost all the bugs we can find are fixed up. The login system works fine and all the locations can be seen without any errors. This app is made for people who want a guide while travelling without too much confusion. The does only what it is created to do. There are no distractions within the app that can irritate the user. The user also has quick access to various facilities while using the app. The UI of the app is very simple and is designed keeping in mind all the age groups. The design is very simple and every button has its clear purpose.

As the app is developed with flutter, which the latest technology provided by google , it is very snappy and doesn't let the user wait for the result. It is also lightweight so the user need not to worry about memory being consumed. It is a helpful app which can help the user to roam around the city.

6.2 Future Developments

We plan to bring more features in the app in the future like recommendation system which can give the user what they want in the city by maintain a profile of their choices and using various technologies like Machine Learning. We can also add stories for places in which they can post about their current offers or simply welcome the users.

We commit in maintaining the app and keeping it up to date as the days goes by. We plan on taking customer feedback and improving the app as the demand for new feature arises.

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