

# **GEOGRAPHICAL PROFILING OF ROUTES BASED ON SECURITY AND SURVEILLANCE**

**A PROJECT REPORT**

*Submitted by,*

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*Under the guidance of,*

**Dr. Dakhole Dipali Khushalrao**  
**Assistant Professor**

*in partial fulfillment for the award of the degree*

*of*

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING(CYBER SECURITY)**

**At**



**PRESIDENCY UNIVERSITY**

**BENGALURU**

**JANUARY 2024**

# **PRESIDENCY UNIVERSITY**

## **SCHOOL OF COMPUTER SCIENCE ENGINEERING**

### **CERTIFICATE**

This is to certify that the Project report “**GEOGRAPHICAL PROFILING OF ROUTES BASED ON SECURITY AND SURVEILLANCE** ” being submitted by TUTIKA KEERTHANA SAI, AKULA E REVENTH, VALLISHETTI ANUSHA, M. SRINIVASA REDDY bearing roll number(s) 202011LCC0002,20201CCS0066,20201CCS0127,20201CCS0135 in partial fulfillment of requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering (CYBER SECURITY) is a bonafide work carried out under my supervision.

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# **PRESIDENCY UNIVERSITY**

## **SCHOOL OF COMPUTER SCIENCE ENGINEERING**

### **DECLARATION**

We hereby declare that the work, which is being presented in the project report entitled **“GEOGRAPHICAL PROFILING OF ROUTES BASED ON SECURITY AND SURVEILLANCE ”** in partial fulfillment for the award of Degree of **Bachelor of Technology in Computer Science and Engineering(Cyber Security)**, is a record of our own investigations carried under the guidance of **Dr. Dakhole Dipali Khushalrao, Assistant Professor, School of Computer Science Engineering, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

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## **ABSTRACT**

The Android app Geographical Profiling was created to give users a way to discover new locations and obtain a clear picture of them, regardless of whether they are in a high-, low-, or medium-level zone. The program is divided into two modules: the admin module and the record-creation module. The admin module enables the creation of records on specific areas, regardless of whether they are located in crime zones. The second module is called User, where users can register, log in, enter their source and destination, and view locations in between. The primary purpose of this program is to provide users with a clear view of aerial records by displaying locations in red, orange, and green colors.

## ACKNOWLEDGEMENT

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# **CHAPTER-1**

## **INTRODUCTION**

### **1.1 Security**

In order to maximize security measures, a thorough examination of the topography, infrastructure, and possible threats is required for the geographical profile of routes used for surveillance and security. By carefully positioning surveillance equipment and people along important routes, this strategy reduces vulnerabilities and discourages illegal activity, both of which improve resource deployment. Proactive emergency response plans can be facilitated by security personnel anticipating and mitigating potential dangers by utilizing past crime data and patterns. Geographical profiling is a complete and proactive method for improving total security and surveillance capabilities because of its dynamic character, which guarantees constant adaptability to changing security risks.

### **1.2 Application**

For security and surveillance purposes, geographic profiling of routes entails evaluating and analyzing the topography, infrastructure, and possible threats in order to maximize the use of security resources. Law enforcement, monitoring systems, and other security measures can all function more effectively as a result of this process. When using geographic profiling for security and surveillance, keep the following points in mind as you proceed

### **Crime Hot-spots**

Find trends and hot-spots by analyzing past crime data. By using this

information, surveillance efforts can be focused on regions with greater crime rates or on particular kinds of criminal activity.

### **Infrastructure for communication**

Evaluate the area's communication networks' dependability and availability. Coordination and real-time monitoring of security personnel require a strong communication infrastructure.

### **Analysis of Threats**

Determine the hazards and possible threats that are unique to the area. This entails being aware of possible terrorist threats, criminal activity tactics, and other security-related issues.

### **Frequently Updated**

Creating a geographic profile is an ongoing process. Update and modify the security and surveillance plans on a regular basis in response to evolving threats, environmental changes, and changes in the surrounding area.

## **1.3 Application Title**

"Strategic Security Route Planning: Enhancing Surveillance Through Geographical Profiling"

## **CHAPTER-2**

### **LITERATURE SURVEY**

#### **2.1 Application for e-Tourism**

More and more, the modern citizen resorts to access to information for his professional activity, social activity or leisure. For this, is essential the use of devices with computational power, such as smartphones. The tourism sector is a sector of great social and economic importance and is one of the sectors where there has been a growth in the use of mobile applications to support several activities. In this sector, mobile applications can be useful for tourists in general, but also for those who have some kind of disability or restriction. For these, mobile applications can help to obtain the information and recommendation of points of interest that are in accordance with their interests and are suitable to their restrictions. This paper describes the development of a mobile application for presentation and personalized recommendation of points of interest for inclusive tourism. The goal is an application to run on smartphone with Android OS able to provide the user with information compatible with their own profile. This application stands out by allowing an automatic filtering of information, considering the location and profile of the user, and providing him with more personalized information, relevant and appropriate to his situation, and thus contributing to a better inclusion. This paper describes the most relevant aspects of the development of the application.

#### **2.2 Smart City Traveller**

Smart City Traveller by the name indicated smartly makes it way in analysing user's likes and dislikes and the time period the user is willing to explore a place

and gives him with Amazing results in the form where utilisation of time is maximum. This system is basically used to help a traveller new to a city or anyone who wants to explore a city in the given time period, the system makes use of the preferences of the user to get all the locations and places with all their information to sort and give a plan to the user. Thus we have used certain algorithms and google maps API to create this application.

### **2.3 Tourguru**

The paper discusses a tour guide mobile application which uses cloud computing, machine learning and Augmented Reality (AR) to give the user an amazing experience on tourism. This application would guide users through an appropriate route to a traveler's destination while suggesting recommended attractions through the route. Tourists would also be given the opportunity to listen to a narration about certain monuments while they are walking or driving through the suggested route. Additionally, one from the available two of the AR features can be useful when a tourist wants to find which direction a certain attraction is. This feature would be especially useful on a high vantage point allowing the user to enjoy several attractions from the same place all the while receiving interesting facts about them. Also, it would contain various details about that said attraction. Other feature of AR is on 3D object modelling that helps the user to get the experience of Point of Interest (POI).

### **2.4 Mobile Application for Tourist's Personal Travelling Management in Kuala Lumpur**

In 2012, Kuala Lumpur (KL) was the world's 6th most gone by city by universal

visitors. In 2011, KL was granted "Asia's Driving City Break Goal" by the World Travel Grants. In line with this, the Kuala Lumpur City Hall (KLCH) has started a few programs to encourage goad its development within the worldwide tourism segment. However, there is no any specific application that focuses on Kuala Lumpur for tourists in order to contributes economically. GOKL has been chosen because tourism is the sector that contributes most to national development. Every day the tourism industry in Malaysia is growing and more tourists visit our country especially in the capital, Kuala Lumpur. The project focuses on the proposal of an android system for the use of travelers who travel Kuala Lumpur city. The proposal system makes it easy for tourists to search for tourist spots located in the city of Kuala Lumpur and allow tourists to make a proper visiting schedule. In addition, tourists can able to add the places in saved or wish list folder for future engagement as proposal system requirement.

### **2.1.5 Intelligent mobile based tourist assistance system**

The tourism industry is a fast growing sector in today's world that has penetrated itself in digital domain. Tourists are unable to fetch necessary information that could be required at the time of emergency due to absence or inappropriate mobile network connectivity. Moreover, tourists are often lost and many casualties are recorded because they could not be tracked and help could not reach them in time. The proposed project works aim to provide an economically viable, sustainable and a user-friendly solution to these problems. This project work aims at developing a module along with an app for tourists which would provide them all the required information about nearby places, directions to reach them along with the emergency contact numbers. The information is provided by the kiosk being installed at different places via BLE Technology. App VOYAGER is an user-friendly interface between user and kiosk that enables tracking of tourists thus saving many lives.

## **2.2 RESEARCH GAPS OF EXISTING METHODS**

Exploring topics that require additional research and development could be part of identifying research gaps in the context of the Geographical Profiling application. These are some areas for further research

### **1. User Acceptance and trust**

Examine what influences users' confidence in the application's ability to identify crime zones, and consider ways to increase users' acceptance.

### **2. Dynamic Crime Patterns**

Examine how crime patterns change over time and create models or algorithms that can instantly adjust to changing safety conditions.

### **3. Techniques for Maintaining Privacy**

Investigate cutting-edge privacy-protecting methods to satisfy worries about gathering and storing private user information while keeping crime mapping's efficacy.

### **4.Strategies for Engaging the Community**

Determine practical methods to encourage ongoing community participation in updating and confirming

### **5.Effect on Urban Policy**

Evaluate the application's real influence on urban policies and evaluate how

much it affects law enforcement and city planning decision-making.

## **6.Cross-Disciplinary Collaboration**

Examine the possible advantages of collaborative efforts between criminologists, urban planners, and technology specialists to improve the capabilities and results of the application.

## **7.Algorithm Fairness and Bias**

Examine any biases in the algorithms that are used to identify crime zones, making sure that this process is equitable for all neighborhoods and demographic groupings.

## **8.Long-Term User Behavior**

Examine how users' actions might alter over time, including how they travel and make decisions, in order to determine how the application will affect community safety in the long run.

## **2.3 OBJECTIVES**

### **Crime Assessment**

Provide users a tool to use a color-coded system (red for high, orange for medium, and green for low) to assess the crime levels in various places. To provide consumers with a thorough and lucid picture of the areas they are investigating, include overhead images of the destinations.



### **Real-time Data**

Make sure that, in order to give consumers accurate and up-to-date information, the crime level data is consistently updated.

### **Map Integration**

Make use of map features so users may efficiently explore locations and see their travels.

### **Compatibility**

Make sure the app is compatible with a range of Android devices so that users can have a consistent experience on screens with varying resolutions and sizes. Accessibility. Build an application with features that are suitable for a range of user needs.

## **CHAPTER-3**

### **PROPOSED MOTHODOLOGY**

A comprehensive strategy, beginning with the acquisition of geographical data, including maps and satellite images, is used in the suggested method for geographical profiling of routes based on security and surveillance. This is followed by a study of historical crime data. To find weaknesses and categorize routes according to security risk categories, risk assessments are then carried out. '

This system allows for a proactive and progressive approach to geographical profiling for enhanced security and surveillance capabilities. Its essential components include dynamic adaption, constant monitoring, response planning, and training for security personnel.

### **3.1 Algorithm**

We have used k-means Algorithm for geographical profiling of routes. K-means is a clustering algorithm that partitions a dataset into K clusters, where each data point belongs to the cluster with the nearest mean. The algorithm iteratively refines the cluster assignments until convergence.

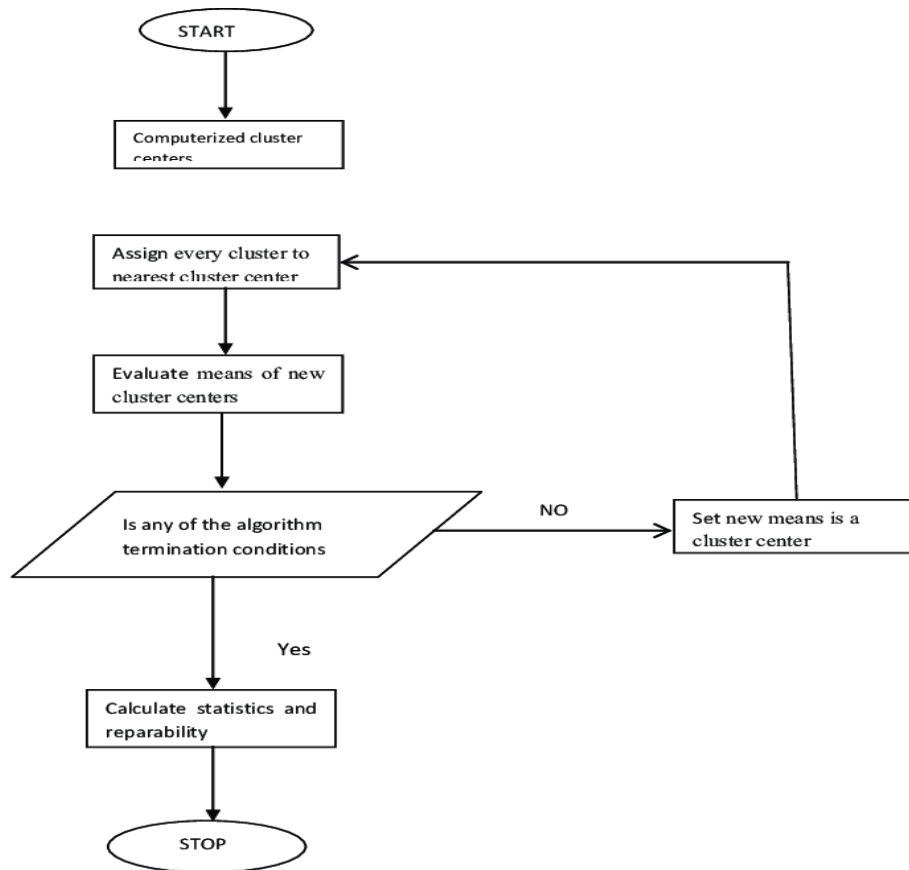


Figure 3.1 (Flow of k-means Algorithm)

## 3.2 Block Diagram

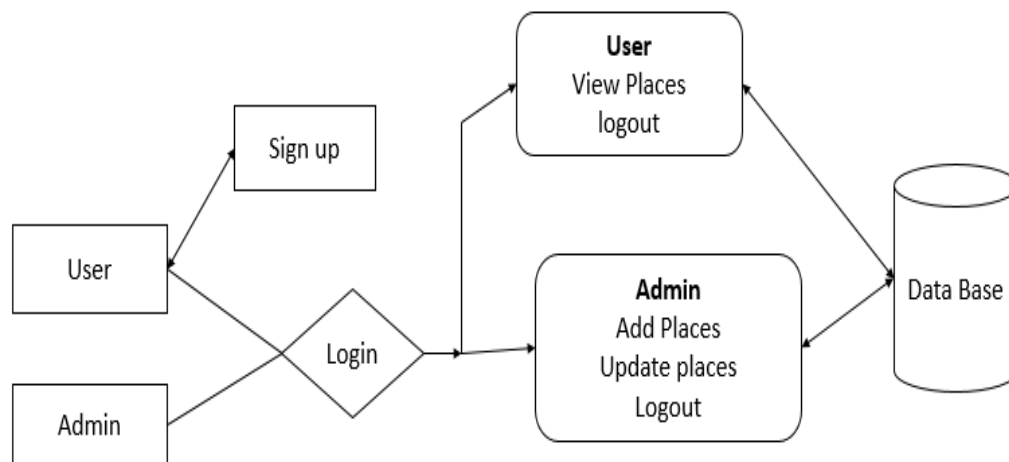


Figure 3.2

## **CHAPTER-4**

### **SYSTEM DESIGN & IMPLEMENTATION**

#### **SYSTEM DESIGN**

##### **4.1 UML DIAGRAMS**

The acronym for Unified Modeling Language is UML. In the realm of object-oriented software engineering, UML is a standardized general-purpose modeling language. The Object Management Group is in charge of overseeing and developing the standard.

The intention is for object-oriented software modeling to be commonly created using UML as a language. A meta-model and a notation make up the two main parts of UML as it exists today. Some kind of procedure or technique might also be added to, or connected with, UML in the future.

The Unified Modeling Language is a standard language used for business modeling and other non-software systems, as well as for defining, visualizing, building, and documenting software system artifacts.

The UML is an assembly of top technical techniques that have

#### **GOALS**

In designing the UML, the following were the main objectives:

1. Give users access to an expressive visual modeling language that is ready for use so they can create and share valuable models.

2. To expand the fundamental ideas, offer tools for specialization and extension.
3. Remain unaffected by certain programming languages and development methodologies.
4. Give the modeling language a formal foundation for comprehension.
5. Promote the market for OO tools to grow.
6. Provide support for concepts related to higher level development, such as components, frameworks, partnerships, and patterns.
7. Combine optimal techniques.

#### **4.1.1 USE CASE DIAGRAM**

As defined by and derived from a Use-case analysis, a use case diagram is a sort of behavioral diagram in the Unified Modeling Language (UML). Its goal is to provide a graphical overview of the functionality that a system offers by showing the actors, their objectives (expressed as use cases), and any inter dependencies among those use cases. A use case diagram's primary objective is to illustrate which actors use the system and for what purposes. Actors' roles throughout the system can be illustrated

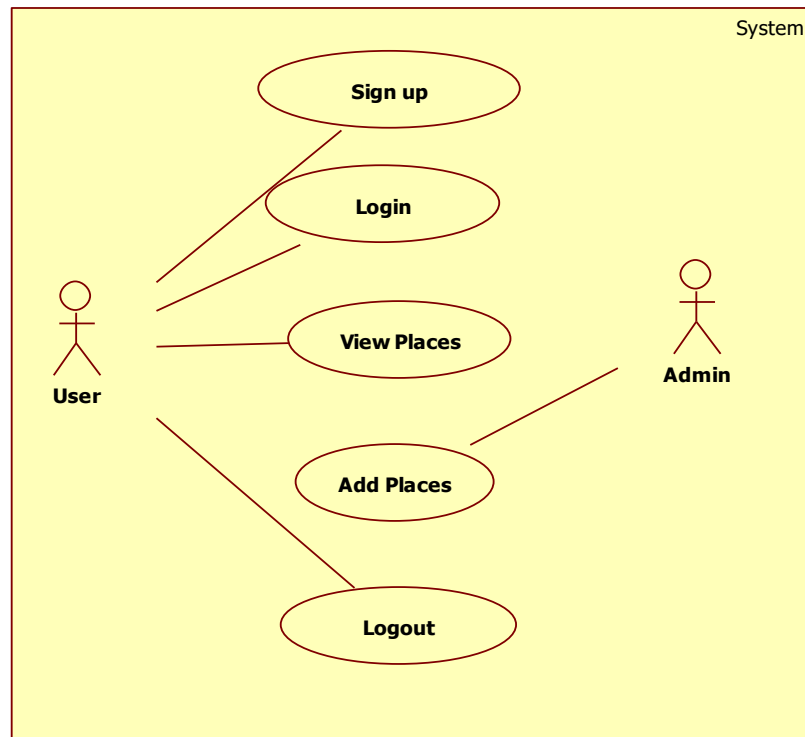


Figure 4.1.1

### 4.1.2 CLASS DIAGRAM

A class diagram in software engineering is a sort of static structure diagram created using the Unified Modeling Language (UML). It shows the classes, attributes, operations (or methods), and links between the classes to represent the structure of the system. Which class holds information is explained.

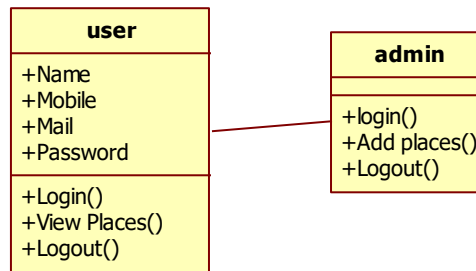


Figure 4.12

### 4.1.3 SEQUENCE DIAGRAM

An example of an interaction diagram in the Unified Modeling Language (UML) is a sequence diagram, which indicates the sequence and manner in which processes interact with one another. It is an example of a message sequence chart construct. Event diagrams, timing diagrams, and event scenarios are other names for sequence diagrams.

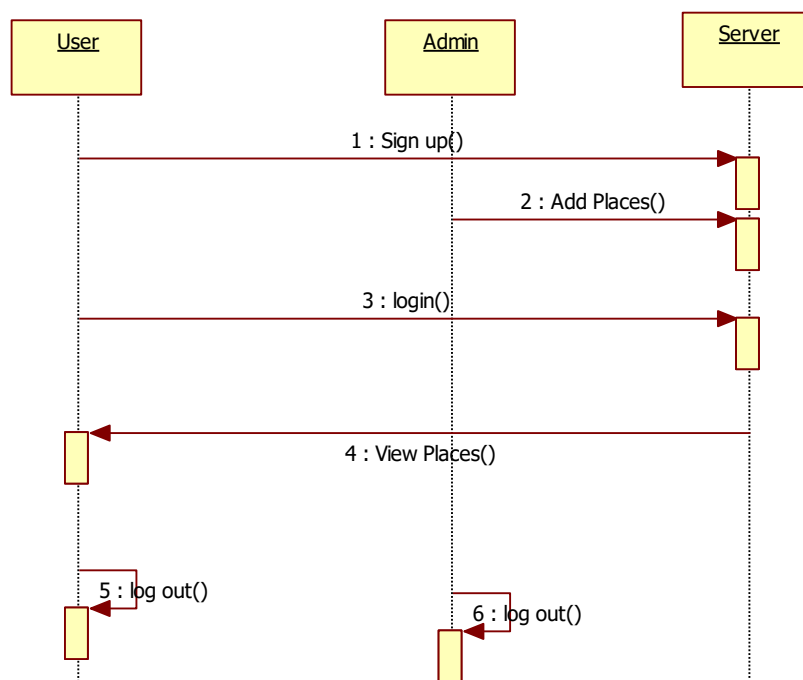


Figure 4.1.3



#### 4.1.4 COLLABORATION DIAGRAM

The method call sequence in the collaboration diagram is denoted, as illustrated below, by a numbering system. The number denotes the order in which the methods are invoked. The collaboration diagram is described using the same order management system. A sequence diagram's method calls are comparable to this one. However, there is one key distinction: the cooperation diagram illustrates the object organization, while the sequence diagram does not.

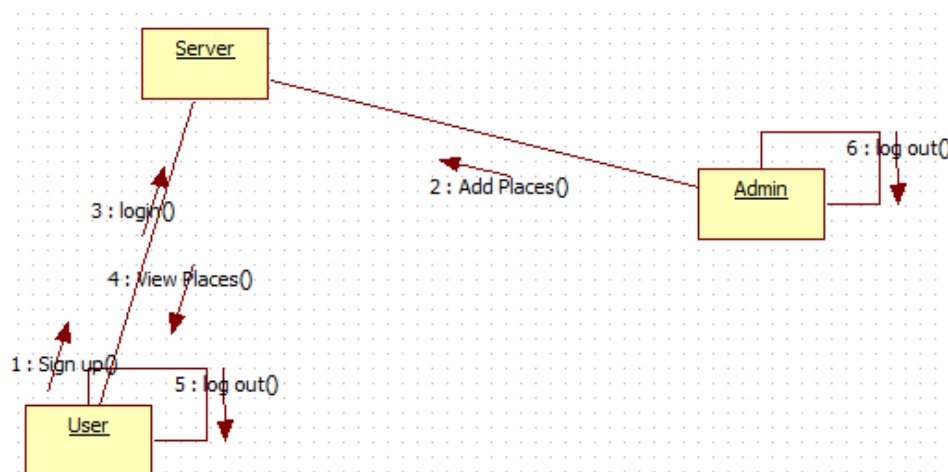


Figure 4.1.4

#### 4.1.5 ACTIVITY DIAGRAM

Activity diagrams are graphical depictions of workflows that allow for choice, iteration, and concurrency. They consist of sequential activities and actions. Activity diagrams in the Unified Modeling Language are a useful tool for describing the sequential business and operational workflows of system components. The whole flow of control is depicted in an activity diagram.

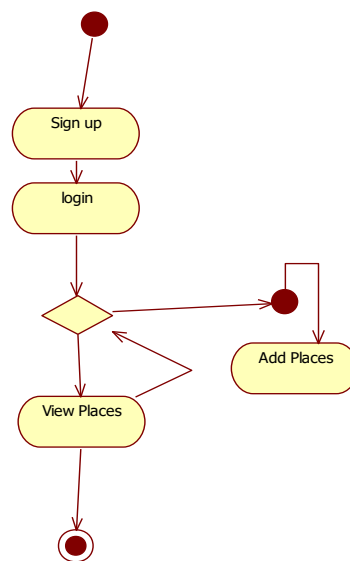


Figure 4.1.5

### 4.1.6 COMPONENT DIAGRAM

A unique type of diagram in the UML is the component diagram. As with all the previous diagrams discussed thus far, the goal is also distinct. While the components needed to create those functionalities are described, the system's functioning is not covered. In light of this, component diagrams are employed to represent the actual parts of a system. Libraries, packages, files, etc. are examples of these components. A static implementation view of a system is another way to characterize component diagrams. The components are arranged as they are at a specific point in time in static implementation. A collection of diagrams is used to describe the overall system, as a single component diagram is unable to do so.

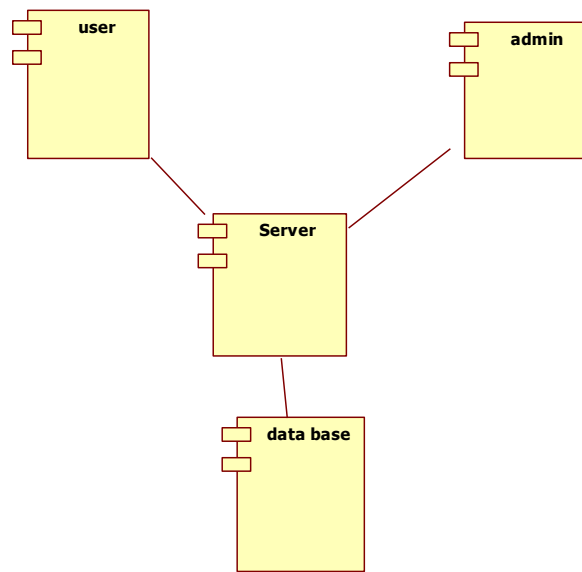


Figure 4.1.6

### 4.1.7 DEPLOYMENT DIAGRAM

An illustration of a system's execution architecture, comprising nodes like software or hardware execution environments and the middleware that connects them, is called a deployment diagram. Typically, deployment diagrams are used to show a system's physical hardware and software. You can use it to comprehend how the hardware will be physically configured for the system. Unlike other UML diagram types, which primarily depict a system's logical components, deployment diagrams assist in modeling a system's physical topology.

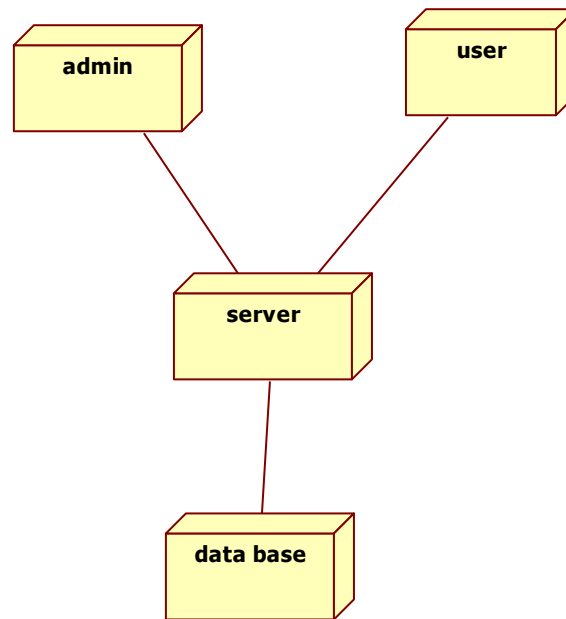


Figure 4.1.7(1)

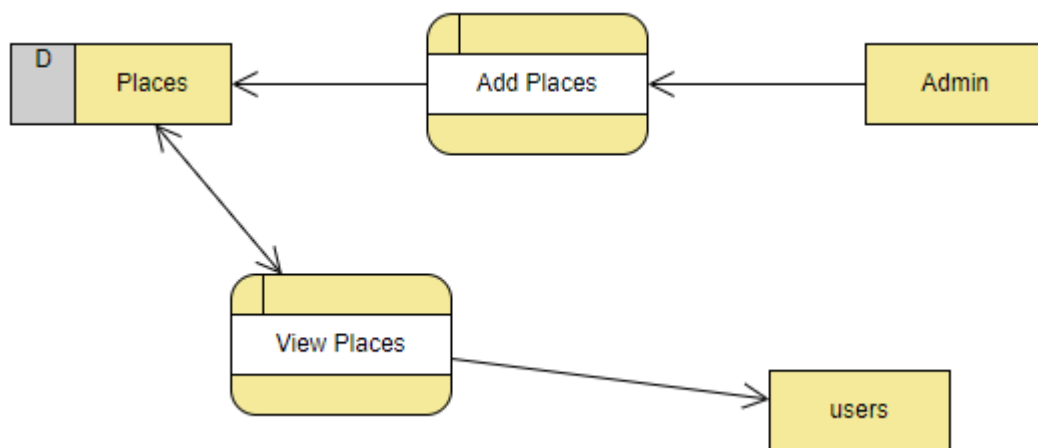


Figure 4.1.7(2)

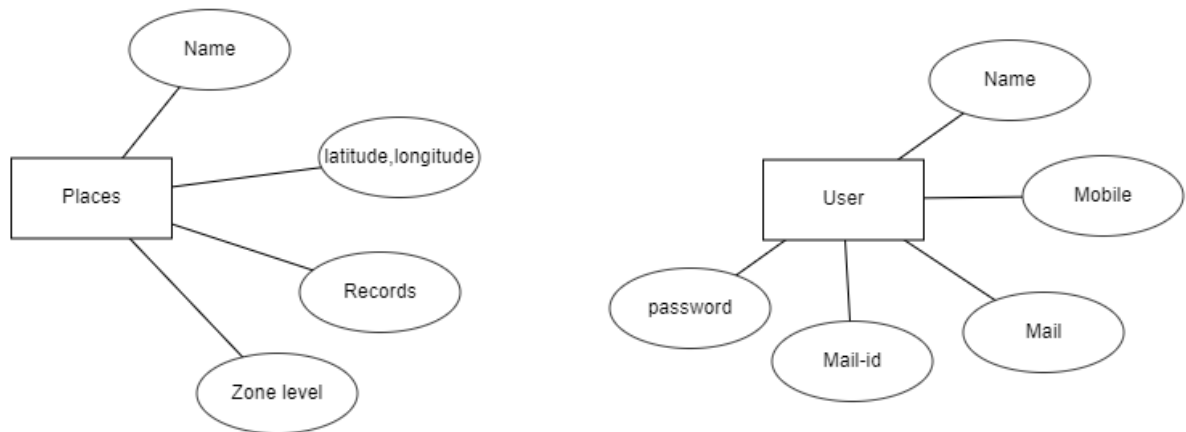


Figure 4.1.7(3)

## 4.4 SYSTEM REQUIREMENTS

### H/W REQUIREMENTS

- Processor - I3/Intel Processor.
- RAM - 8GB (min).
- Hard Disk - 1 TB.
- Key Board - Standard Windows Keyboard.
- Mouse - Two or Three Button Mouse.

### S/W CONFIGURATION

- Operating System : Windows 7.
- Programming : Java
- Server-side Script : PHP
- IDE : Android Studio.
- SDK : Android
- Libraries Used : Volley, Material design.

## **Libraries**

Android includes a set of C/C++ libraries used by various components of the Android system. These capabilities are exposed to developers through the Android application framework. Some of the core libraries are listed below:

- **System C library** - a BSD-derived implementation of the standard C system library (lib c), tuned for embedded Linux-based devices
- **Media Libraries** - based on Packet Video's Open Core; the libraries support playback and recording of many popular audio and video formats, as well as static image files, including MPEG4, H.264, MP3, AAC, AMR, JPG, and PNG
- **Surface Manager** - manages access to the display subsystem and seamlessly composites 2D and 3D graphic layers from multiple applications
- **LibWebCore** - a modern web browser engine which powers both the Android browser and an embedded web view
- **SGL** - the underlying 2D graphics engine
- **3D libraries** - an implementation based on OpenGL ES 1.0 API s; the libraries use either hardware 3D acceleration (where available) or the included, highly optimized 3D software rasterize
- **Free Type** - bitmap and vector font rendering
- **SQLite** - a powerful and lightweight relational database engine available to all applications

## **4.5 ARCHITECTURE**

### **1. Overview of the Project**

The goal is to create a system that uses security and geographic data to identify safe and effective routes.

### **Important characteristics**

- Route optimization with security considerations
- updates on security threats in real time.
- interface that is easy to use for feedback and input.

## **2. Data Sources**

Combine information from multiple sources, such as geographic data from GPS, GIS, and maps, information on security gleaned from incident reports, crime statistics, and databases used by law enforcement, real-time information, including social network feeds, traffic reports, and weather updates.

## **4. Processing and Integration of Data**

Provide a strong layer of data processing to integrate and clean data.

Put in place systems for updating data in real time.

Make that the integrated dataset is accurate and consistent.

## **5. Spatial Database**

To store and retrieve geographic data more effectively, use a spatial database.

## **6. Pre-processing and Feature Extraction**

Prepare geographic data by using pre-processing methods to improve and clean it. Take note of pertinent details such as road kinds, traffic patterns, and landmarks.

## **7. Machine Learning Module**

Use historical data to train models of machine learning for security risk assessment. Apply algorithms for predictive analytic, anomaly detection, and

clustering.

### **8.Route Optimization Engine**

Create a route optimization engine by utilizing A\* or Dijkstra's methods.

Routes should be optimized based on geography and security forecasts.

### **9.User Interface (UI)**

Design an easy-to-use UI so that users may enter preferences.

Show suggested routes and the most recent security upgrades.

Present maps and security ratings in graphical form.

### **10.Alerting System**

To inform users of security threats or modifications to their selected routes, put in place an alerting system.



## **CHAPTER-5**

### **RESULTS AND DISCUSSIONS**

#### **1. User Engagement**

Increased user engagement due to the user-friendly interface, sign-up, and login features.

The ease of use encourages more users to actively participate, contributing to a growing community.

#### **2. Crime Zone Identification**

Successful identification and mapping of crime-prone areas through the Admin module.

This data empowers authorities to implement targeted interventions and enhance public safety.

#### **3. Improved Urban Planning**

Integration of data into urban planning for optimized city layouts.

The application contributes to smarter urban development, prioritizing safety in city design.

#### **4. Efficient Travel Planning**

Users experience more efficient route planning based on safety considerations.

This leads to safer commutes and a sense of security for individuals navigating different areas.

#### **5. Data-Driven Decision Making**

Authorities make informed decisions on resource allocation and crime prevention.

The application becomes a valuable tool for evidence-based policy making in law enforcement and city management.

## 6. Community Awareness

Increased community awareness about the safety levels of various locations.

This promotes a shared responsibility for safety and encourages collective efforts to improve neighborhood security.

In summary, successful implementation and ongoing success of the Geographical Profiling application depend on factors like accurate data, user engagement, privacy considerations, and collaboration between users and administrators.

## 5.1 SCREENSHOTS

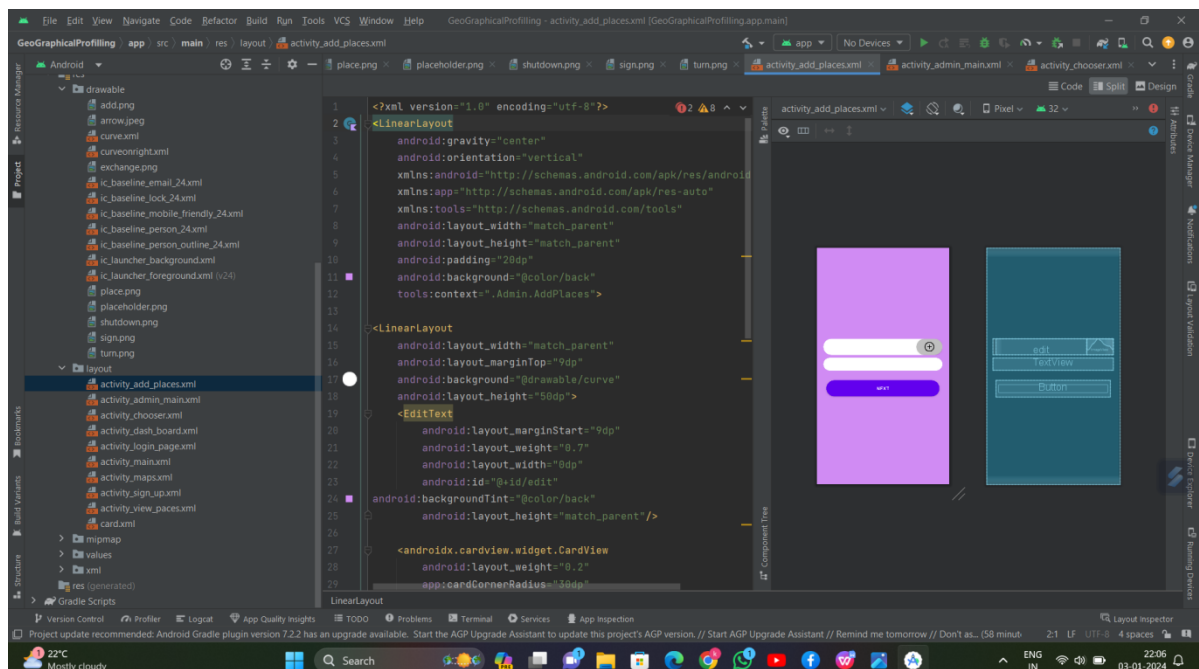


Figure 5.1.1(Add Places page)



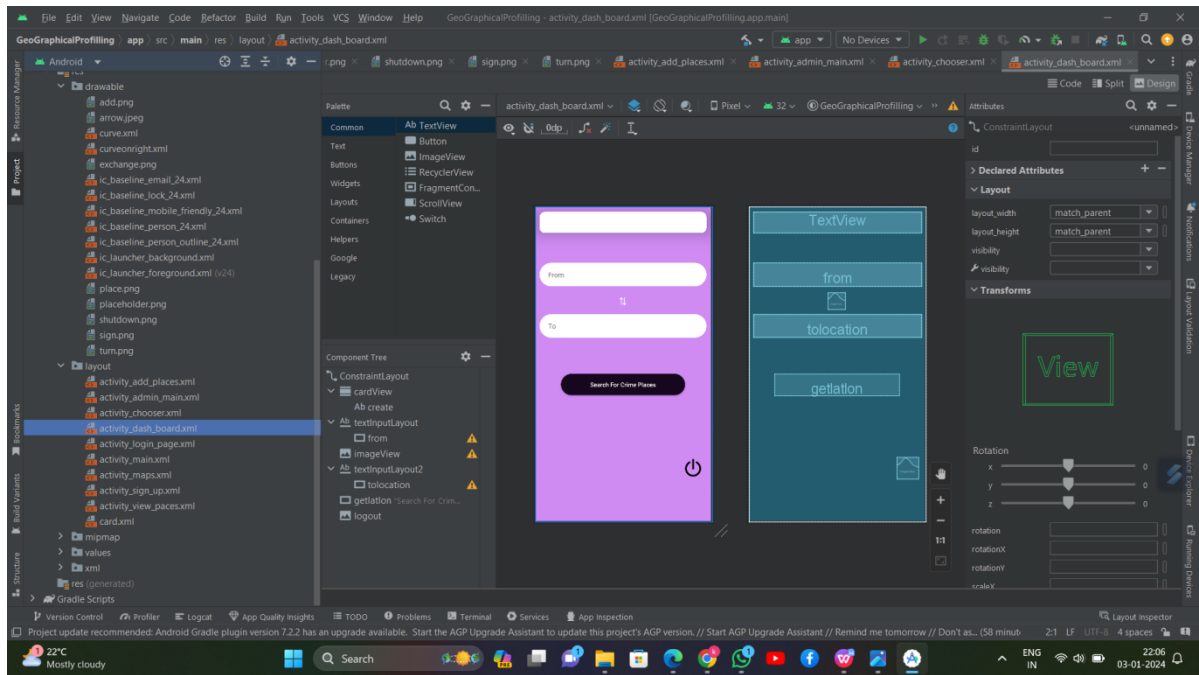


Figure 5.1.4(Main page)

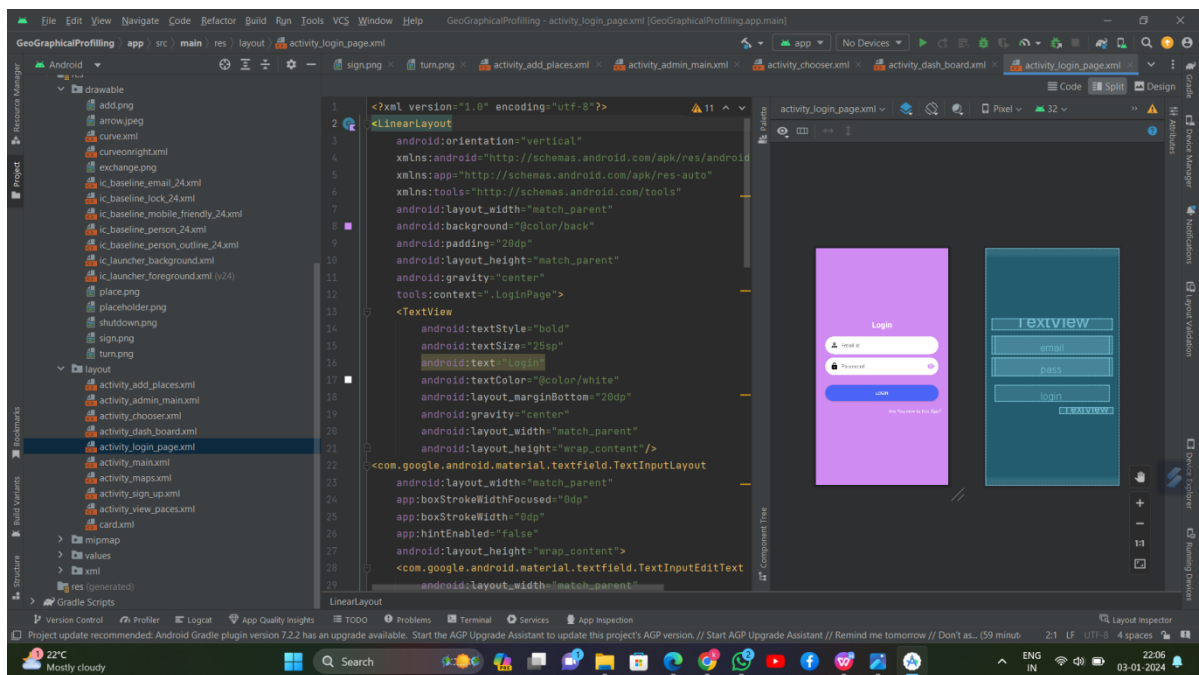


Figure 5.1.5(Login page)

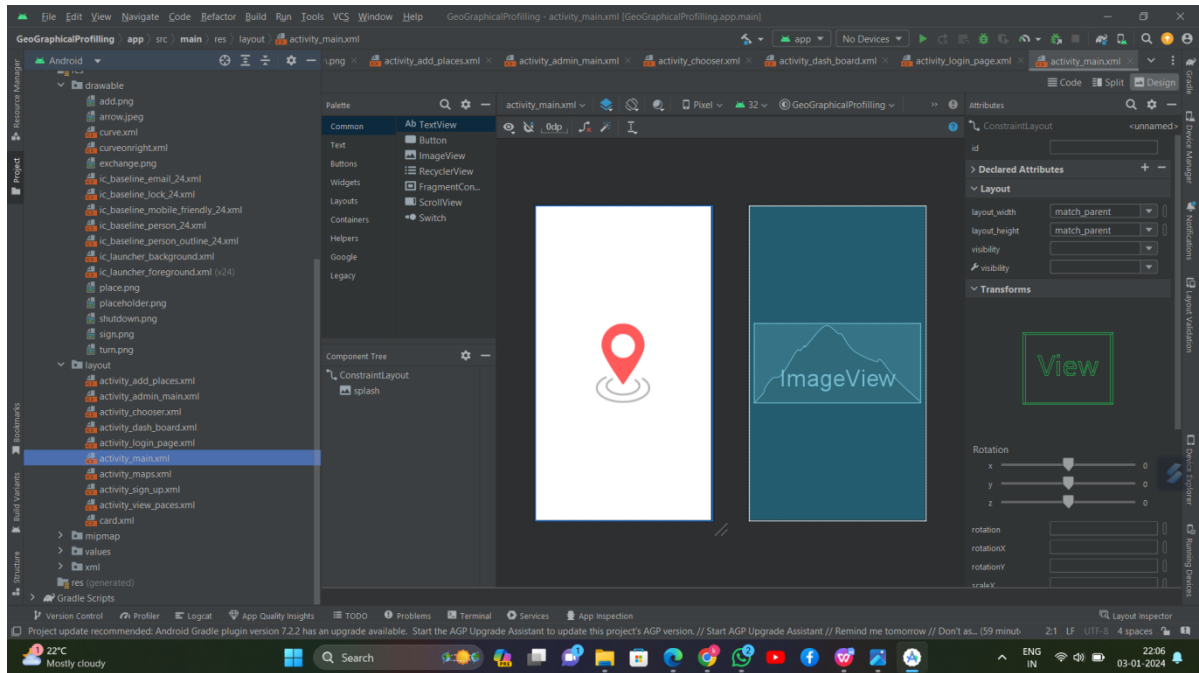


Figure 5.1.6(Showing Routes between source and destination)

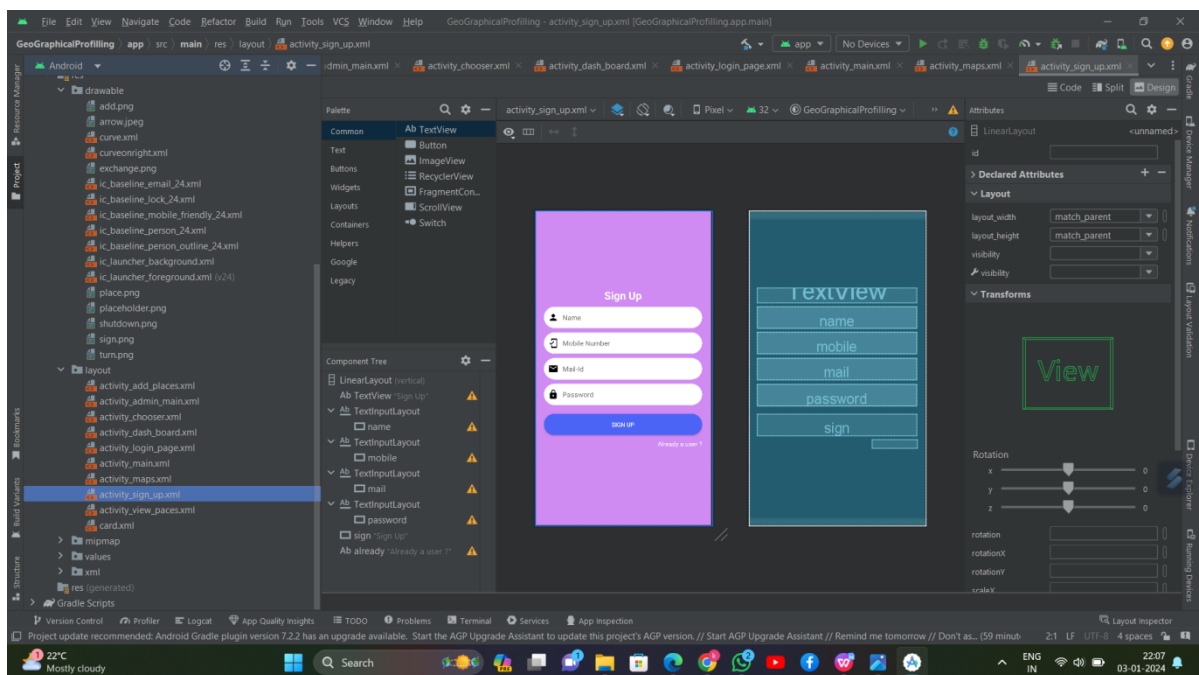


Figure 5.1.7(Sign up page)

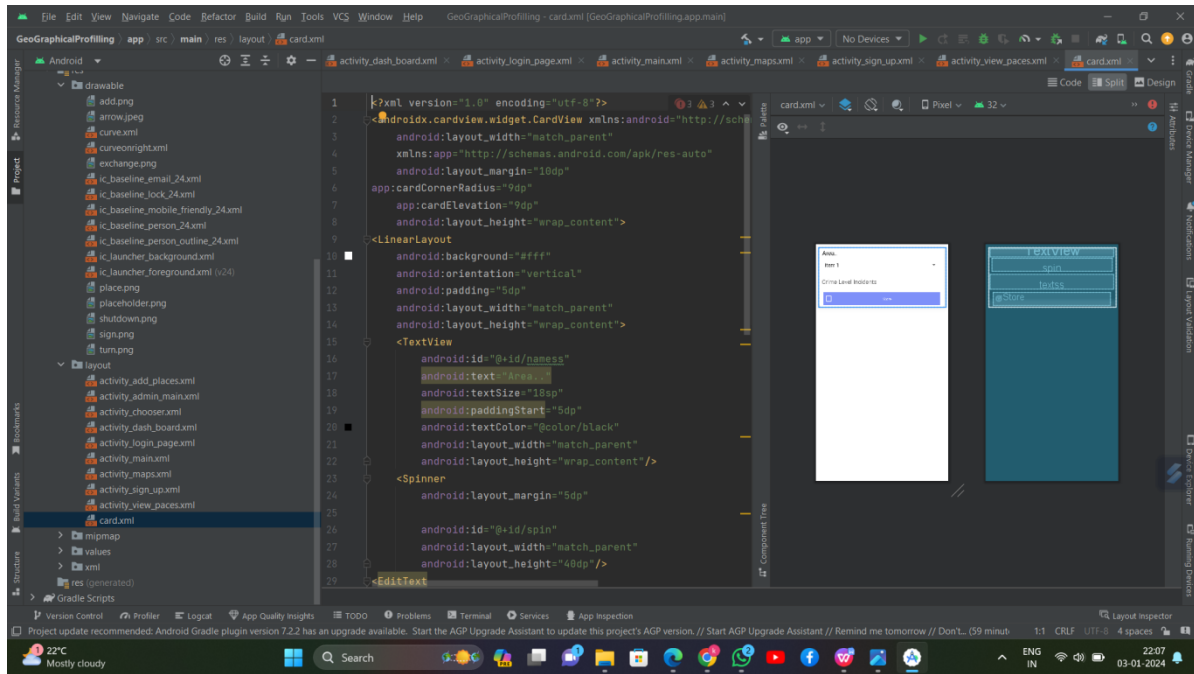


Figure 5.1.8(Adding Places Description page)

## **CHAPTER-6**

### **CONCLUSION AND FUTURE SCOPE**

#### **CONCLUSION**

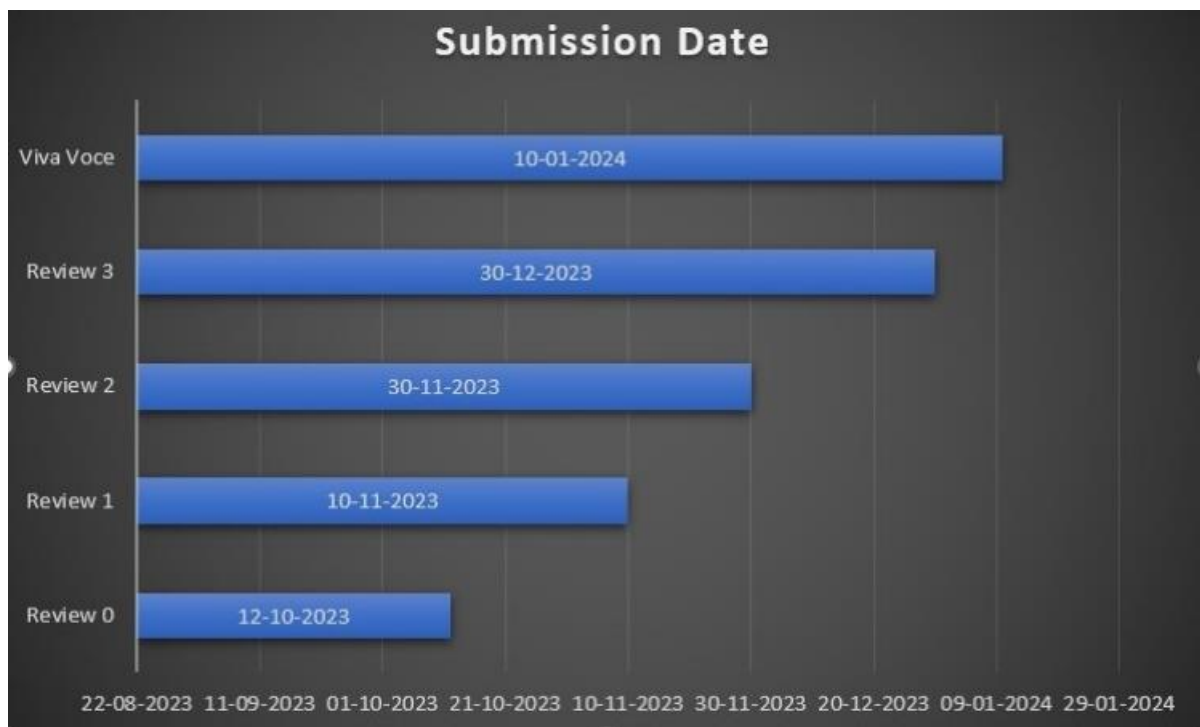
As one of the most significant aspects of modern life is travel, it is imperative that adequate preparation be made in advance with regard to safety protocols. When it comes to vacation preparation, most people who don't use the newest technology spend a lot of time. Thus, a travel app such as Geographic Profiling App truly helps visitors make the most of their limited time while traveling and also enjoy themselves.

#### **FUTURE SCOPE**

The Geographical Profiling of Routes initiative has a lot of potential to promote smart transportation and urban planning in the future. For even more development, real-time data streams from several sources, such traffic cameras, social media feeds, and Internet of Things devices, might be integrated to improve the precision of security and surveillance evaluations. Predictive analytic-based proactive route recommendations could be made possible by improving machine learning algorithms to dynamically adjust to changing security situations. Furthermore, working together with local law enforcement and authorities may make it easier to incorporate crime prediction models, which would result in route profiling systems that are more responsive and reliable. A comprehensive approach to route optimization could be fostered by broadening the project's scope to include environmental elements, weather, and socioeconomic data. At the end of the day,

## TIMELINE FOR EXECUTION OF PROJECT (GANTT CHART)

Phase	REVIEW	Timeline
1.Title Finalization with Supervisor.	Review-0	16-10-23
2. Problem Definition/Novelty	Review-1	08-11-23
3. 50% implementation details	Review-2	28-11-23
4. 100% implementation details	Review-3	27-12-23
5. Demonstration	Final viva	10-01-24





## **REFERENCES**

- [1]Application for e-Tourism: Intelligent Mobile Tourist Guide; Alexander Smirnov; Alexey Kashevnik; Andrew Ponomarev; Maksim Shchekotov; Kirill Kulakov, 16 July 2015
- [2]Smart City Traveller; Harshil Joshi, Shivani Chavan, Rinkal Patel, Abdullah Patel, May - 2019
- [3]Tourguru: Tour Guide Mobile Application for Tourists, M.S.B.W.T.M.P.S.B. Thennakoon; R.D.T.N. Rajarathna; S.P.B. Jayawickrama; M.P.D.S.M. Kumara, 07 December 2019
- [4]Mobile Application for Tourist's Personal Travelling Management in Kuala Lumpur; Nur Huda Mat Yusoff; Arulselvi Isvaramurty; Husniza Razalli, 07 October 2019
- [5]Intelligent Mobile Based Tourist Assistance System; Rittwik Sood. 09 April 2017

## **APPENDIX-A**

### **PSUEDOCODE**

```
package com.example.geographicalprofilling

import android.content.Intent
import android.os.Bundle
import android.widget.ImageView
import androidx.appcompat.app.AppCompatActivity
import com.example.geographicalprofilling.Admin.Admin_MainActivity
import com.example.geographicalprofilling.User.DashBoard

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        val image=findViewById<ImageView>(R.id.splash)
        image.alpha=0f
        val type=getSharedPreferences("user",
MODE_PRIVATE).getString("type","")
        image.animate().alpha(1f).setDuration(1000).withEndAction {
            finishAffinity()
            when (type) {
                "user" -> {
                    startActivity(Intent(this,DashBoard::class.java))
                }
                "admin" -> {
```

```
        startActivity(Intent(this,Admin_MainActivity::class.java))
    }
    else -> {
        startActivity(Intent(this, LoginPage::class.java))
    }
}
overridePendingTransition(androidx.appcompat.R.anim.abc_fade_in,
    androidx.appcompat.R.anim.abc_fade_out)

}

}

}
```

## APPENDIX – B

### ACCEPTANCE CERTIFICATES



## PUBLICATION CERTIFICATES









**The Project work carried out here is mapped to SDG-4 Quality Education.**

A Quality Education project's geographic profiling of routes entails a strategic review of educational needs in various regions, identifying places with restricted access to infrastructure and educational resources.

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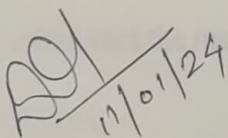
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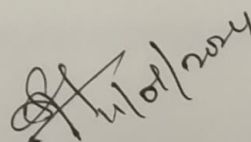
## SCHOOL OF COMPUTER SCIENCE ENGINEERING

### CERTIFICATE

This is to certify that the Project report “**GEOGRAPHICAL PROFILING OF ROUTES BASED ON SECURITY AND SURVEILLANCE**” being submitted by TUTIKA KEERTHANA SAI, AKULA E REVENTH, VALLISHETTI ANUSHA, M. SRINIVASA REDDY bearing roll number(s) 202011LCC0002, 20201CCS0066, 20201CCS0127, 20201CCS0135 in partial fulfillment of requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering (CYBER SECURITY) is a bonafide work carried out under my supervision.

  
11/01/24

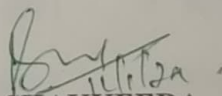
**Dr. Dakhole Dipali Khushalrao**  
Assistant Professor  
School of CSE&IS  
Presidency University

  
11/01/2024

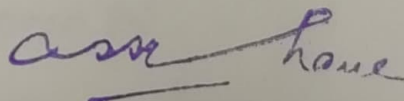
**Dr. S.P. Anandaraj**  
Professor & HoD  
School of CSE&IS  
Presidency University



**Dr. C. KALAIARASAN**  
Associate Dean  
School of CSE&IS  
Presidency University

  
11/01/24

**Dr. L. SHAKKEERA**  
Associate Dean  
School of CSE&IS  
Presidency University

  
sameer

**Dr. Md. SAMEERUDDIN KHAN**  
Dean  
School of CSE&IS  
Presidency University

# PRESIDENCY UNIVERSITY

## SCHOOL OF COMPUTER SCIENCE ENGINEERING

### DECLARATION

We hereby declare that the work, which is being presented in the project report entitled "GEOGRAPHICAL PROFILING OF ROUTES BASED ON SECURITY AND SURVEILLANCE" in partial fulfillment for the award of Degree of Bachelor of Technology in Computer Science and Engineering(Cyber Security), is a record of our own investigations carried under the guidance of Dr. Dakhole Dipali Khushalrao, Assistant Professor, School of Computer Science Engineering, Presidency University, Bengaluru.

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

Tutika Keerthana Sai 20211LCC0002

T. Keerthana Sai

Vallishetti Anusha 20201CCS0127

V. Anusha

Akula E Reventh 20201CCS0066

E. Reventh

M Srinivasa Reddy 20201CCS0135

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