

Map Data Explorer

Final Year Project

Session 2018-2022

A project submitted in partial fulfillment of the degree of

BS in Computer Science



Department of Computer Science

Faculty of Computer Science & Information Technology

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FYP ID	FYP-BCSM-F21-026			
Project Group Members				
Sr.#	Reg. #	Student Name	Email ID	*Signature
(i)	Bcsm-f18-345	Hafiz Ahmar	Bcsm-f18-345@superior.edu,pk	
(ii)	Bcsm-f18-458	Harris Shahid	Bcsm-f18-458@superior.edu,pk	

*The candidates confirm that the work submitted is their own and appropriate credit has been given where reference has been made to work of others

Plagiarism Free Certificate

This is to certify that, I Hafiz Ahmar S/O of M.Yousaf, group leader of FYP under registration no Bcsm-f18-345 at Computer Science Department, The Superior University, Lahore. I declare that my FYP report is checked by my supervisor.

Date: _____ Name of Group Leader: Hafiz Ahmar Signature: _____

Name of Supervisor: Muhammad Jameel Co-Supervisor: Saleem Mustafa

Designation: Lecturer Designation: As

Signature: _____ Signature: _____

HoD: Dr. Irfan ud din

Signature: _____

APPROVAL

PROJECT SUPERVISOR

Comments: _____

Name: _____

Date: _____ Signature: _____

PROJECT MANAGER

Comments: _____

Date: _____ Signature: _____

HEAD OF THE DEPARTMENT

Comments: _____

Date: _____ Signature: _____

Dedication

This work is dedicated to my

Dedicate this project to God Almighty my creator, my strong pillar, my source of inspiration, Wisdom, knowledge and understanding. He has been the source of my strength throughout this Program and on His wings only have I soared. I also dedicate this work to my teacher who has encouraged me all the way and whose encouragement has made sure that I Give it all it takes to finish that which I have started. Thank you. My love for you all can never be quant you quantified. God blesses.

Acknowledgements

I am really thankful to my supervisor who has

First of all, we would like to express our heartfelt thanks to” ALLAH Almighty” for this opportunity, which he rendered to us and gives the physical strength and pleasant mind to complete this project work report. We thank Sir Jameel and my project guide for the correct guidance and advice. We also thank our department staff, who all encourage and satisfy our needs to finish this project work. We extent our thanks and gratitude to our parents, Friends and those who helped us directly and indirectly for the successful completion of this project work.

Executive Summary

Map data explorer is a hybrid application. Map data explorer is just like a map application but with very efficient and many more functionalities like basemap, overlays, coordinate search and many more. In this application, we can convert vector tiles to raster tiles. We can load catalog, add geojson. We can use our location. We can calculate distance between two coordinates.

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Chapter 1

Introduction

Chapter 1: Introduction

Map Data Explorer is an app where we can use different basemaps, openlayers, coordinate search and many more. In this application, we can convert vector to raster tile. We can load catalog, add GeoJson, coordinate converter, vector converter, generate catalog and vector to raster tiles and many more features. We can use our location. We can calculate distance between two coordinates. We can explore different map data and can upload different formats files like GeoJson, mbtiles, gpkg, kml, csv, gx etc.

1.1. Background

First, the research topics are established based on the demand for research, unanswered issues, and researcher interest. The study's target audience and research topics may be identified based on these variables. Most of the time, the target population is sizable, making it hard to speak with every individual.

1.2. Motivations and Challenges

People may easily compute area to determine the real area of a location using Map Data Explorer. Only a good analytic approach will allow for a rigorous evaluation of map data explorer findings. These reasons drove us to choose sample size, response rate, and analytic methods for this study instead of other variables. Better statistical evidence may be obtained for every survey by using a properly specified sample of a certain size. With the right sample size, different data patterns may be recognized and results can be generalized.

1.3. Goals and Objectives

1. To provide easy learning system.
2. To reduce learning hassle and get the service comfortably.
3. To remove communication system between customer and user
4. Planned strategy towards working: - The working in the organization will be carefully planned and structured. In data stores, the information will be appropriately stored, facilitating both its storage and retrieval
Accuracy: The accuracy in the proposed system will be high. All operation would be done correctly and it ensures that whatever information is coming from the customer is accurate.
5. Because of the aforementioned factors, the suggested system will be highly reliable.

Because there will be proper information storage going forward, the system's reliability will enhance. Immediate retrieval of information The main objective of proposed system is to provide for a quick and efficient retrieval of information.

6. **Immediate storage of information:** - we can store the largest amount of information.

1.4. Literature Review/Existing Solutions

We cannot calculate area measure cannot add basemap, overlays, and many more things.

But in map data explorer we design the all type of things like basemap, overlays, area measurement etc.

1.5. Gap Analysis

Map Data Explorer are available in techmavengeo. They provide special customer facilitate. Existing map is not generic. We provide the customer should choose depend upon them on interest.

1.6. Proposed Solution

Need to calculate distance between two coordinates. Need to use different basemaps and overlays for view the earth. Need a coordinate converter for converting base coordinate system to target coordinate system. Need to use geo data file for conversion to GeoJson. Load catalog and GeoJson. Need to load tiles and download data.

1.7. Project Plan

The implementation of our system we will purpose solution to the people is that.

- Our system consists of app-based services.
- All system consists of automatic through the proper method.
- People do not suffer any extra times for arrangement.
- Peoples do not use any extra map for Calculation.
- People not waiting for lack of resources and other things.
- All services provided in a single place.

1.7.1. Work Breakdown Structure

1. Requirement Gathering

- a. Technical specification
- b. Restricted areas
- c. Available solutions

2. Establish Design

a. Application

- i. Design elements
- ii. Banner
- iii. Footer
- iv. Logo
- v. Font usage
- vi. Icons
- vii. Content
- viii. Header

3. Database Module

Design Database

ERD

CRUD Operation

Normalize Data

4. Documentation

SRS

SDS

User Documentation

5. Testing

Performance Testing

Load Testing

Security Testing

Unit Testing

Integration Testing

System Testings

Chapter 2

Software Requirements Specifications

Chapter 2: Software Requirements Specifications

2.1. Introductions

2.1.1. Purpose

Map Data Explorer an application where we can use different basemaps, openlayers, coordinate search and many more. In this application, we can convert vector to raster tile. We can load catalog, add GeoJson, coordinate cinverter, vector converter, generate catalog and vector to raster tiles and many more features. We can use our location.

- Requirements elicitations
- Requirements analysis and negotiations
- Requirements specifications
- System modelings
- Requirements validations
- Requirements managements

2.1.2. Document Conventions

Our coworker and I have been able to gather the key user classes and the various needs and categorise them following the feasibility study, a thorough grasp of the project's functions, and a look at the tools that will be required to create and implement the application.

2.1.3. Intended Audience and Reading Suggestions

This article is useful for all of the different categories of readers, including

- Map scope
- Map perspective

- Map feature
- User classes and attributes
- Operating environment
- Implementation and design limitations
- Dependencies and presumptions
- Needs for external interfaces
- System features
- Functionals and non-functional requirements

Audience	Use
Development	This document will serve as their reference for requirement, design, and documentation.
Client	They can ensure by reading this document that this product met their needs or not.
Managers	Manager will read this document for check all constraints. For example, time and cost are in limit or not.
Testers	They will use this document to test the implementation according to requirements.
Documentation Writer	They will use this document during the documentation of the project. It will be really helpful for them.

2.1.4. Product Scope

Need to calculate distance between two coordinates. Need to use different basemaps and overlays for view the earth. Need a coordinate converter for converting base coordinate system to target coordinate system. Need to use geo data file for conversion to GeoJson. Load catalog and GeoJson. Need to load tiles and download data.

- Search

- BaseMap
- Overlays
- GPS location
- Area measurement

2.1.5. References

List any additional papers or Web sites to which this SRS references. These might be use case documents, contracts, standards, system requirements specifications, user interface style guides, or a document outlining the vision and scope. Give enough details about each reference, such as the title, author, version number, date, and location so that the reader may access a copy of it.

2.2. Overall Descriptions

2.2.1. Products Perspectives

Knowledge-oriented metrics are those that focus on tracking the process in order to assess, foresee, or keep an eye on a particular aspect of the process.

Achievement-oriented metrics are those that are frequently focused on measuring a specific component of the product, frequently connected to a general indicator of the product's quality.

Algorithmic cost modelling has received the majority of attention in the cost estimating discipline. To estimate the output in this process, expenses are examined using mathematical formulae that correlate costs or inputs with metrics. A formal model's formulas are developed by the examination of historical data. By calibrating the model to your unique development environment, which essentially includes modifying the weightings of the metrics feasibility, you may increase the model's accuracy.

2.2.2. Products Functions

Functions that the product must carry out or enable the user to carry out. only a high-level overview (such as a bullet list) is required here since details will be supplied in Section 3. Organize the functions such that any SRS reader may comprehend them. A top-level data flow diagram or object class diagram, which depicts the main groupings of linked needs and their relationships, is frequently successful.

2.2.3. User Classes and Characteristics

User
+UserID: int +Username: String +User Password: String

Object	Description
User	<p>Parent class for the blind individual and their relatives is the abstract user class (remote helper).</p> <p>Attributes</p> <p>User ID: The database's unique identification number for each user.</p> <p>User Name: User's login name</p> <p>Password for the user to log in</p>

2.2.4. Operating Environment

This system will operate in mobile with minimum version android version 7 & iOS version 13 for their different versions also.

The processor should be 1.7GHz or greater.

Ram should be greater than 1GB.

2.2.5. Designs and Implementations Constraints

List the application tools that will be utilized for the front and back ends of the upcoming system.

It's important to explain why these tools are used. Identify what the needs for tool support are, and what the limits are, by looking at the following:

- The development processes. What kind of tool assistance is necessary for productive work? For instance, since testing will occur often during the project if the firm chooses to use an iterative development method, it is vital to automate the tests.

- Target system (s).
- The chosen programming language or languages.
- Current instruments. Determine if any currently in use, effective tools can be maintained.
- The scope of the development undertaking. More or less effectively, tools serve massive organizations.
- Time and financial restrictions

2.2.6. User Documentation

We will give some documentation by use this user can understand how to use this app. We will also give the tutorials videos that how to use the application.

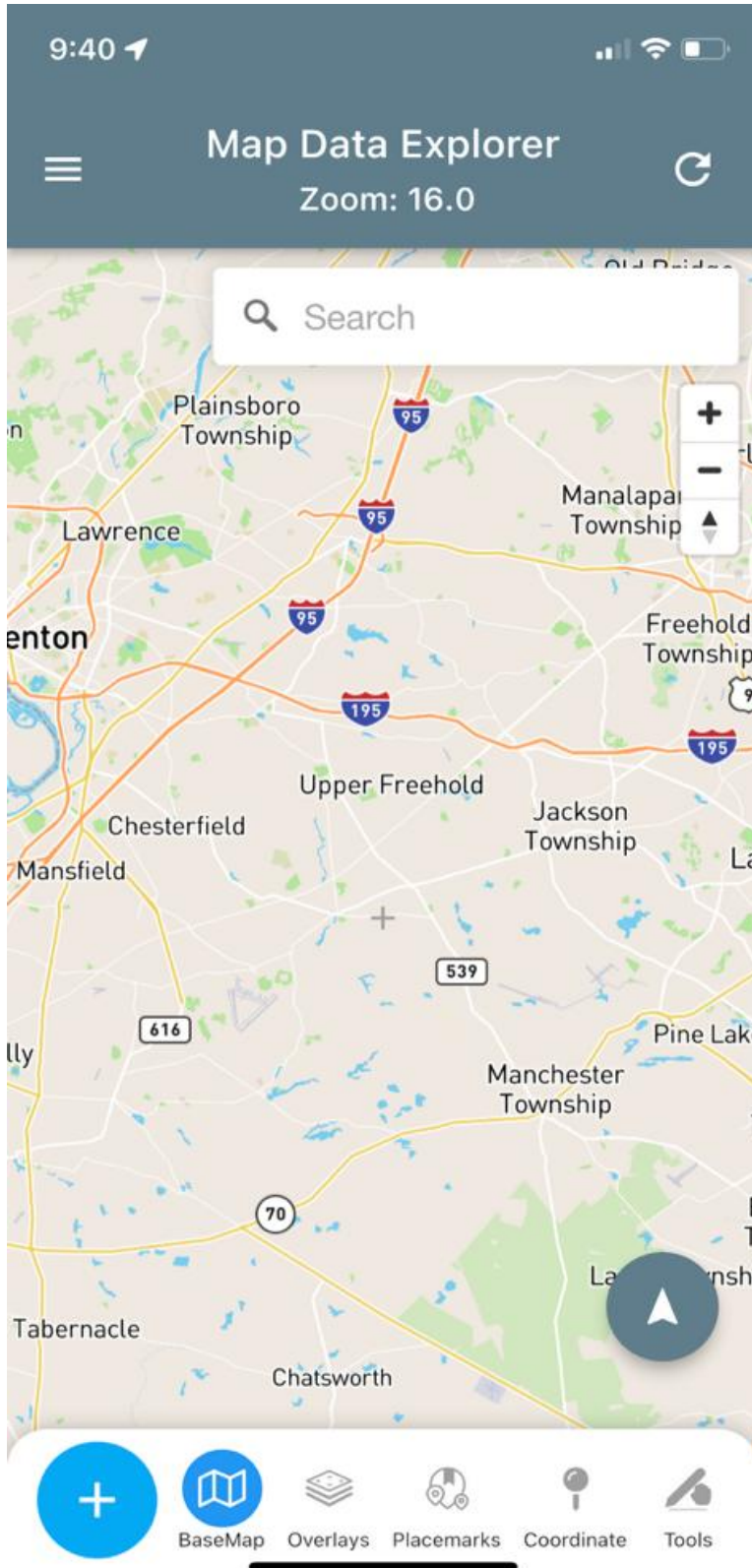
2.2.7. Assumption and Dependencies

The following presumptions underlie this project:

- Android and iOS mobile applications.
- The application would function on the requisite hardware while running on the appropriate device.
- To particularly meet functional or non-functional needs as necessary, we may employ some third-party components.
- Only if the necessary time and resources are available will optional project components be realized.

2.3. Externals Interfaces Requirement

2.3.1. User Interface



2.3.2. Hardware Interface

Hardware requirement at user end is very simple and application can also run on hardware that can run simple mobile.

Recommended hardware:

Mobile	Processor	Ram	Hard Space
Android & iOS	1.7 GHz	1GB	1GB

2.3.3. Software Interfaces

Programming language	Dart
Tools	Android Studio and SQflite
Operating System	Android & iOS
Technology	Flutter
Database	SQL Server, SQflite

2.3.4. Communications Interfaces

LAN protocol and TCP/IP.

2.4. System Features

2.4.1.1. Functional Requirements:

Function requirements for this feature are following

App do verify user.

App does de-activate user account.

App does add basemap.

App does add Overlays.

App does 3D Buildings.

App does add geoJSON, catalogs.

System does calculate area measurement, line measurement and draw tools.

App does add placemark.

2.5. Nonfunctional Requirement

2.5.1. Performance Requirements

1. **Response time:** In the home page loaded in 5 seconds.
2. **Availability:** This app will be available 99.99% of the time.
3. **Capacity:** Maximum throughput that can be achieved with acceptable response time and availability.

2.5.2. Safety Requirements

1. Don't be register as a fake account.
2. All basemaps store and retrieve correctly.
3. Communication between user and customer will easily and sure.
4. Personal data of user and customer cannot be leaked.

2.5.3. Securities Requirement

An item that defines functional activity that enforces security is known as a functional security requirement. It is testable and observable immediately. Functional requirements include those related to data integrity, authentication, erroneous password lockouts, and access control.

1. This software keeps the information of user.
2. User will be registered after verification of user data.
3. Secure login and logout. If renter forget his account credential than he has to get new credential through his sign-up e-mail.

2.5.4. Software Quality Attributes

1. **Usability:** This App easy to use and easy to learn how to operate.
2. **Portability:** This software can be used on different devices like Tablets, mobiles, laptops etc.
3. **Robustness:** This App can handle many problems itself like if user forgets his password so system gives it option to re-write name and user password.
4. **Flexibility:** The functionality of this software can be increased after development because documentation is available.

2.5.5. Business Rules

Each phase can perform well in some certain circumstances. The requirements of end user always keep in mind and at first priority while working on the product. Basic problem for which we find solution remember at the time of development.

2.6. other Requirement

Describe any additional needs that the SRS does not already address. This might include needs for databases, internationalization, compliance with laws, project reuse goals, and so on. Any additional sections that are relevant to the project should be included.

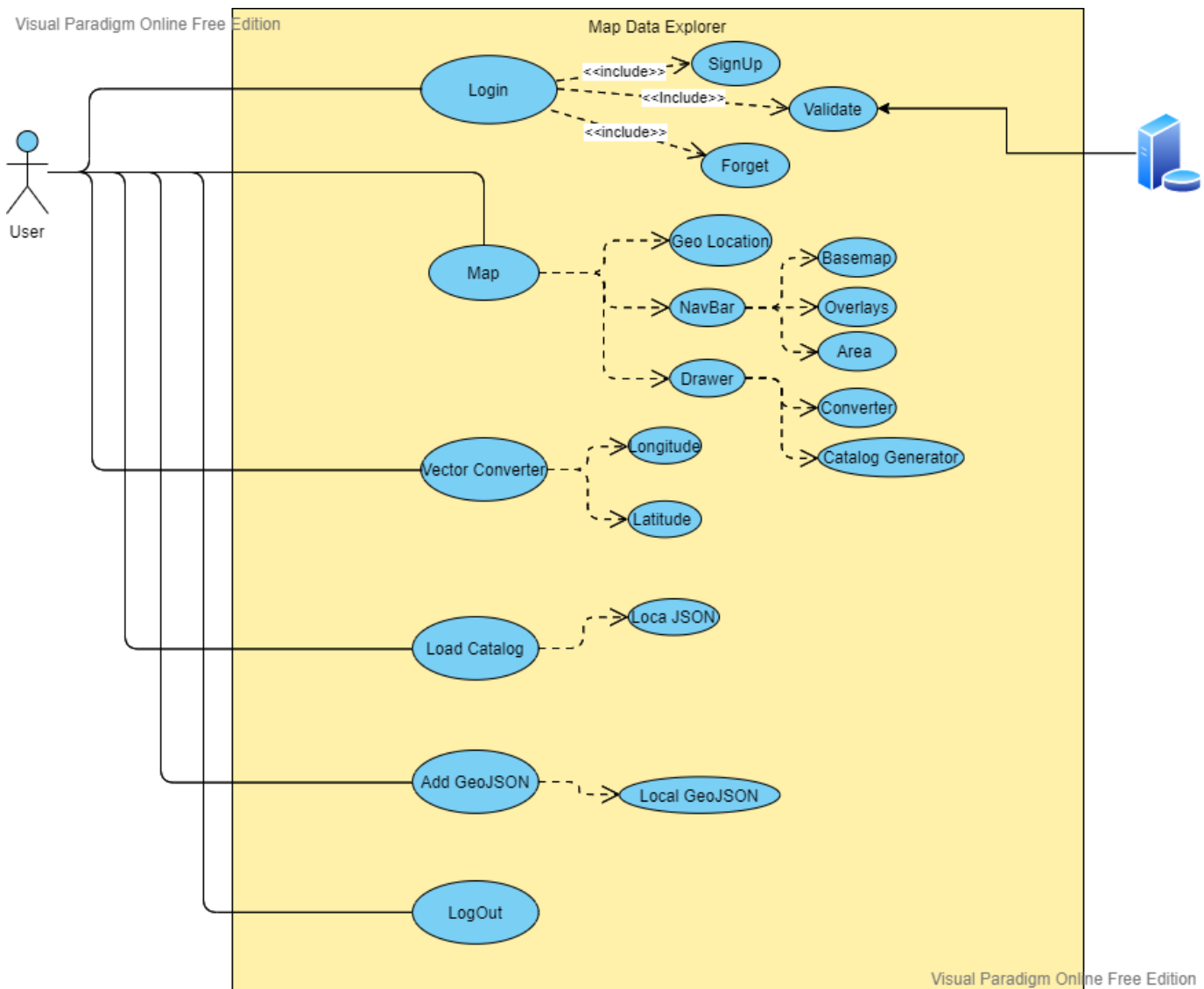
Chapter 3

Use Cases Analysis

Chapter 3: System Analysis's

It is a procedure for gathering and analyzing data, determining the issues, and breaking down a system into its constituent parts. It is a method of resolving issues that enhances the system and guarantees that every part functions effectively to provide its intended function.

3.1. Use Case Model



3.2.

Name	Map
Scope	Map is for explore world with different styles
Level	2
Actor	User
Primary Actor	User
Secondary Actor	Developer, Maintenance
Stake holder and Interests	User
Precondition	User has to login
Postcondition	User can select any kind of basemap and overlays.
Success Scenario	User has to login User has to search places User has to Confirm basemaps to get further views of map User Can Check out their options User can logout
Extensions	Wrong Attempts Wrong Page Selecting

Chapter 4

System Designs

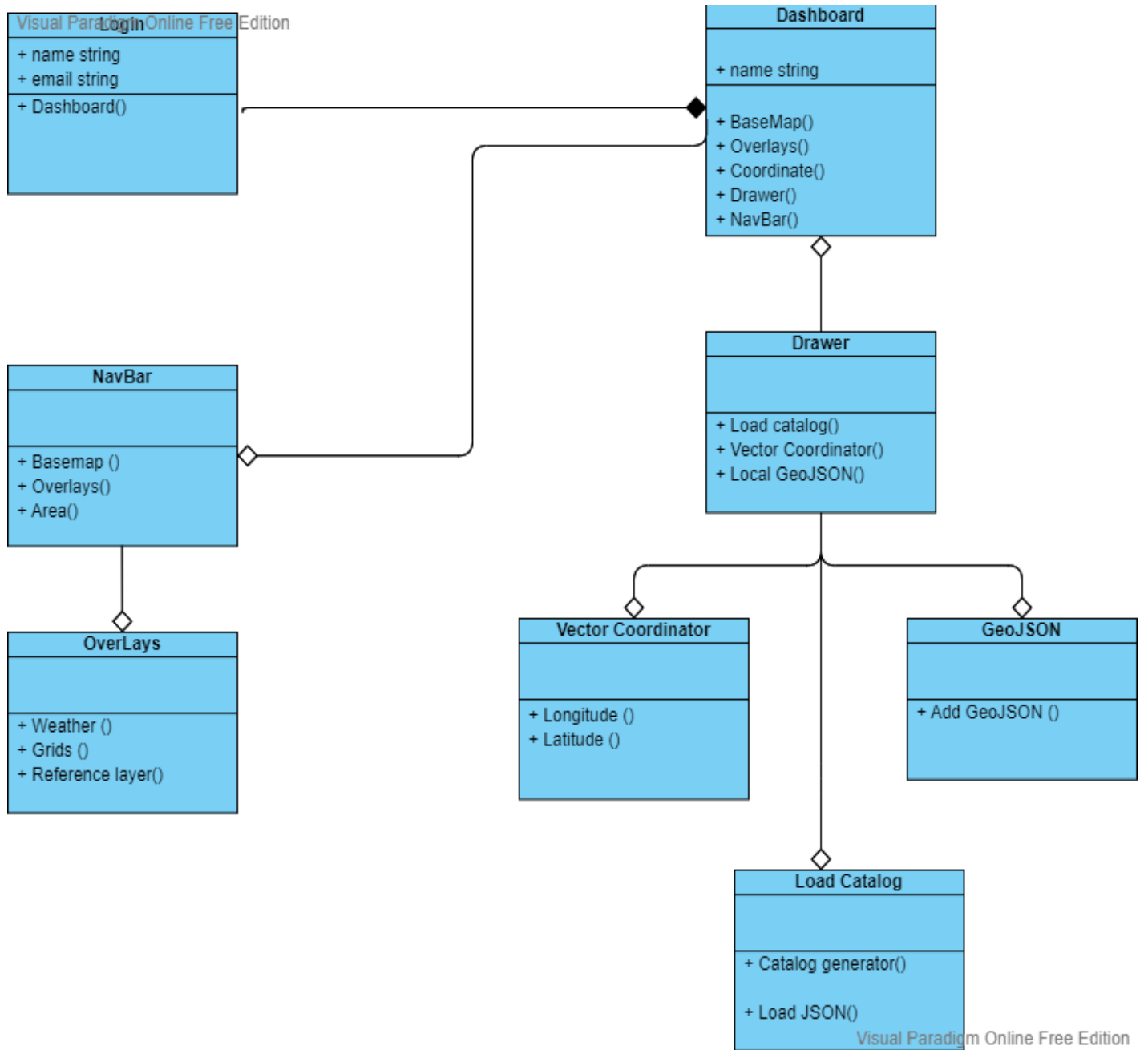
Chapter 4: System Designs

Systems design is the process of designing a system's components, including modules, architecture, components, their interfaces, and data, depending on the requirements that have been given. A business or organization's unique goals and requirements are satisfied through the process of identifying, developing. A well-functioning system necessitates a comprehensive approach. It is necessary to use a bottom-up or top-down method to account for all the system's connected factors. In order to express information and knowledge in a system structure that is governed by a standardized set of rules and definitions, a designer employs modelling languages. Graphical or textual modelling languages can be used to define the designs.

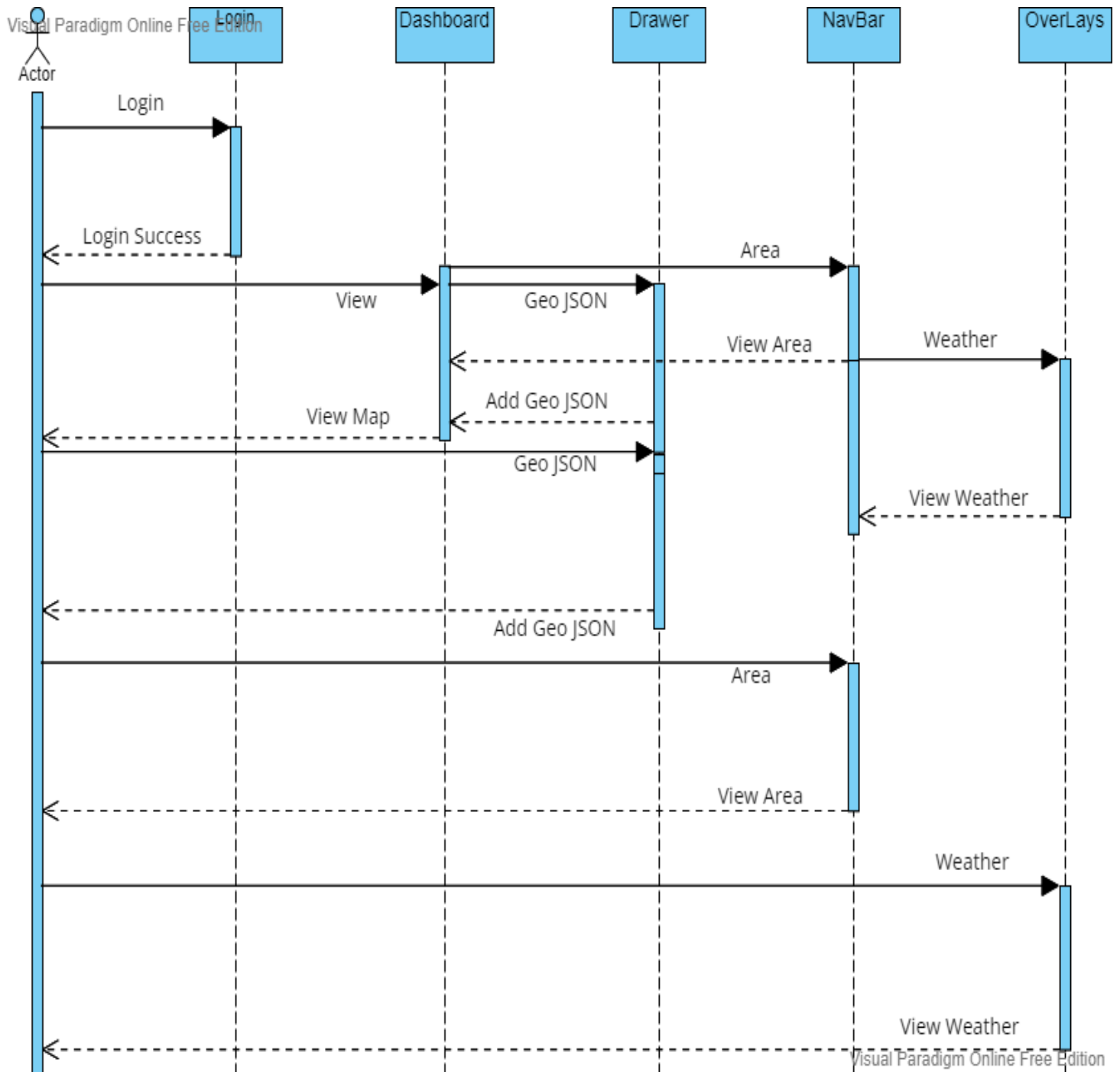
4.1. Entity Relationship Diagrams with data dictionary



4.2. Class Diagram's

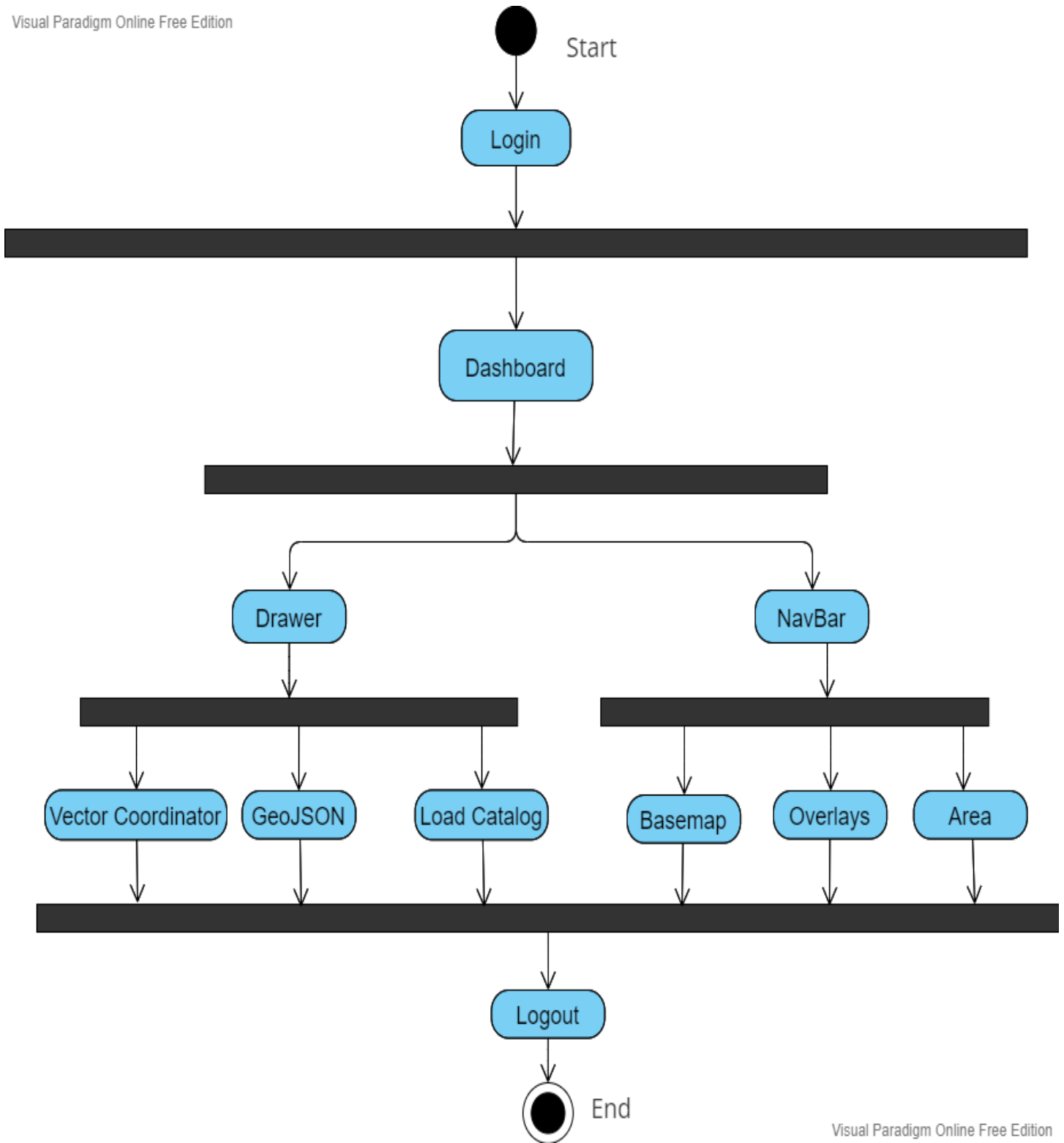


4.3. Sequence / Collaboration Diagram's



4.4. Activity Diagram's

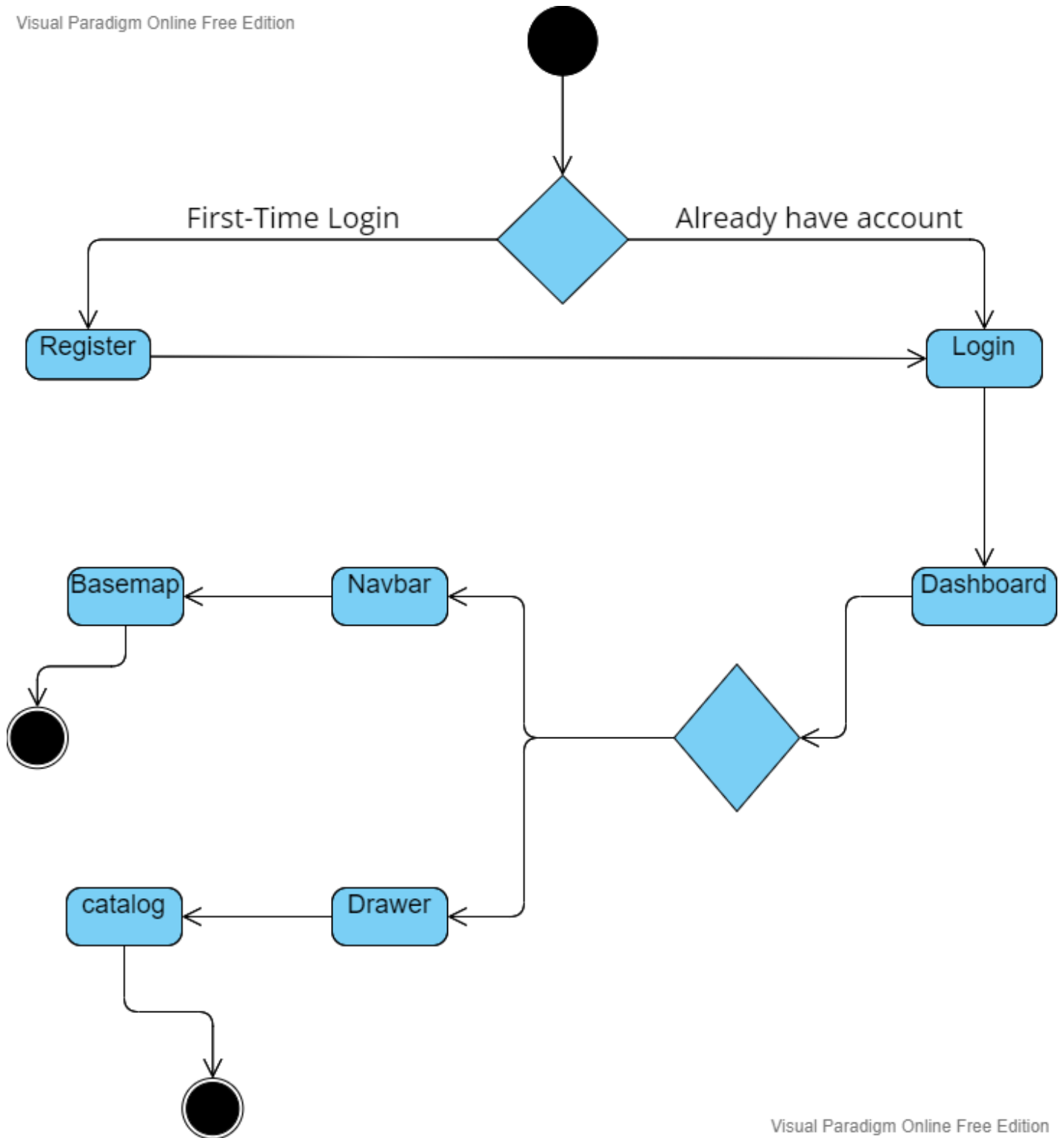
Visual Paradigm Online Free Edition



Visual Paradigm Online Free Edition

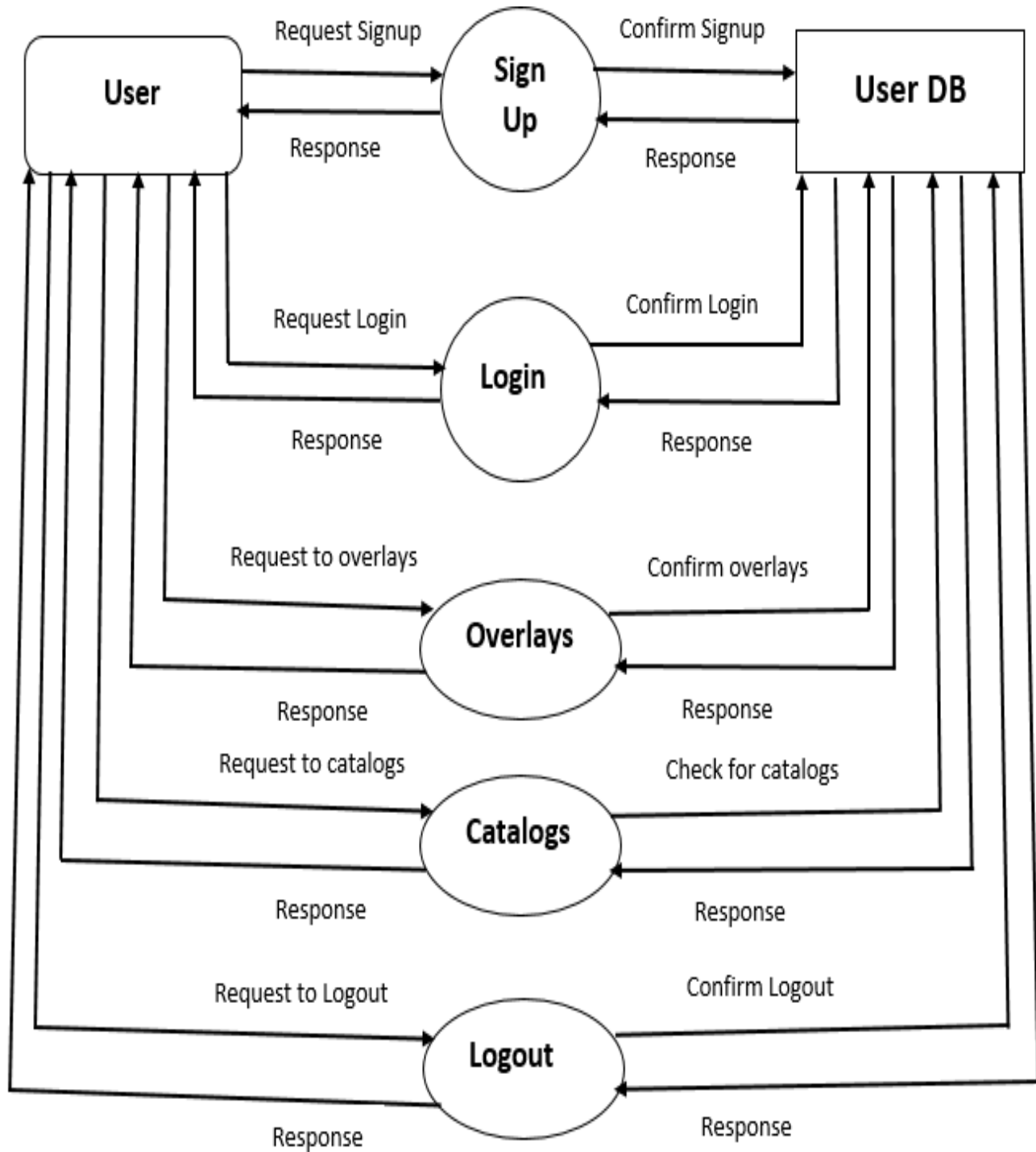
4.5. State Transition Diagram's

Visual Paradigm Online Free Edition



Visual Paradigm Online Free Edition

4.6. Data Flow diagrams



Chapter 5

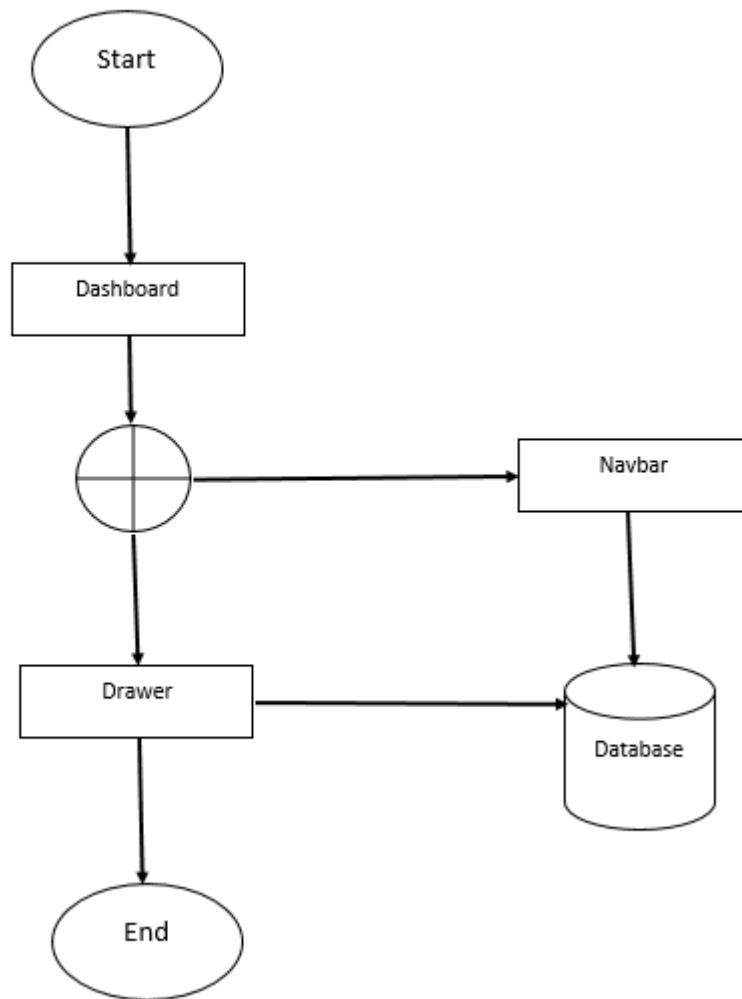
Implementation

Chapter 5: Implementation

This chapter outlines the Super Resolution system's implementation and assessment processes. The development environment, tools, development platform, database used, and degrees of system users are also covered in terms of implementation. In the meanwhile, explanations are provided regarding the testing procedure's nature, participants, and interpretation of the data.

Requirements Gathering & Analysis	<p>All required needs and resources are prepared for analysis at this phase. During analysis, errors and flaws are located and repaired. Following that, the many areas of implementation's feasibilities are developed (including time and cost).</p>
Plannings	<p>On the basis of the evaluated facts and needs, the plan will be manifested in this phase. Each SDLC phase's duration and price will also be determined.</p>
Designs	<p>The database will be designed at this phase, along with the development model. The supervisor will confirm it.</p>
Implementation	<p>Execution in accordance with specifications following the design phase. During and after completion of this phase, V&V will be applied to assess if the system fits the criteria.</p>
Testing's	<p>Testing will be carried out to verify functioning and need. Testing will be done both dynamically and statically. dynamically using testing tools and statically by manually checking each piece of code. Static testing will lessen mistakes that occur during execution and enable us to detect faults that would otherwise be extremely challenging to find.</p>
Deployment	<p>The system will be deployed when tests are completed and no new faults are found. Regression testing will be carried out in the event that problems are found or if changes are made.</p>

5.1. Important Flow Control/Pseudo codes



5.2. Components, Library, Web Service's and stub's

Libraries:

```

import 'package:offlinemapdata/modal/GeoRequestData.dart';
import 'package:offlinemapdata/provider/AoiOfflineDataProvider.dart';
import 'package:offlinemapdata/provider/OfflineClipDataProvider.dart';
import 'package:offlinemapdata/repository/GeoRequestRepository.dart';
import 'package:offlinemapdata/repository/LoginRepository.dart';
import 'package:offlinemapdata/screens/OfflineClipTileListView.dart';
  
```

```
import 'package:offlinemapdata/widgets/main_drawer.dart';
import 'package:provider/provider.dart';
import 'package:adaptive_dialog/adaptive_dialog.dart';
```

Component:

System.ComponentModel: Provides class that are used to implement the behavior of components and controls at design's and execution time. The fundamental classes and interfaces needed to implement attributes, deal with type converters, bind to data sources, and implement licensing components are included in this namespace.

Systems.Web.UI. Designs: Contains classes that may be used to increase Web Forms' design-time support.

Systems.Web.UI. Designs.WebControls: Contains classes that can be used to extend design-time support for Web server controls.

Systems.Web.UI. Designs.WebControls. WebParts: contains classes that give controls inherited from classes in the System design-time support.

Webs.UI.WebControls.WebParts namespace.

Web Services:

System.Configuration: provides classes and interfaces that let you access .NET Framework configuration settings programmatically and handle configuration file problems. (.config files).

System.Web. Configuration: Contains class that are needed to set up ASP.NET configuration

5.3. Deployment Environment

- Browser
- Android
- Firefox

5.4. Tools and Techniques

Tools:

- Android Studio
- VS code
- My SQL
- SQLite

- Firebase
- Languages:
- Flutter, Dart

5.5. Best Practices / Coding Standards

These are the best practices to write the code which we will follow in our project.

- Commenting
- Naming conventions
- We will keep the code simple

5.6. Version Control

Maintaining copies of your code or files at each step of their development is known as version control. A version control system enables us to manage all of our code versions while only displaying one version at once.

We'll utilize GitHub for online survey pages. Git is the most popular contemporary version control system in use today. Git was built as a mature, actively maintained open-source project.

Chapter 6

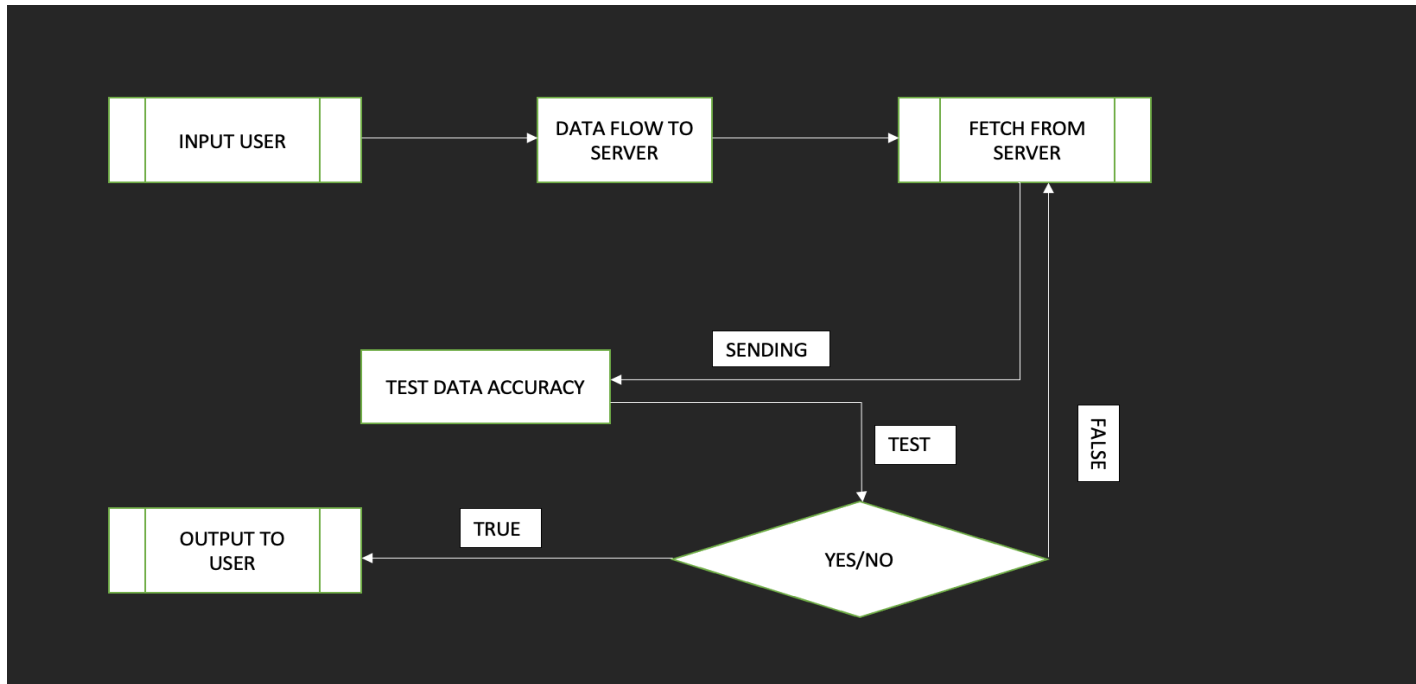
Testing's and Evaluations

Chapter 6: Testing's and Evaluation


6.1. Use Case Testing's

Project name	Map Data Explorer				
Module name	Maps Layer				
Creation Date	30/05/2020				
Test Case ID	Test Case Description	Pre-Condition	Post-Condition	Expected Result	Status
TC-FL-01	Maps Layer can chosen more than one	Must be required internet connection.	user able to view as per their choice layers	Successful open map	Pass
TC-FL-02	User Select Layouts	User have must required internet connection for selecting different types of layouts	After selecte Selecting multiple layouts checks connection	Choosing multiple area apply on map	Pass
TC-FL-03	AOI Maps	User can download their interest of area by selecting AOI then it's not required to use internet connection	Dowload map area and save it into their map screen or file manager	Saving the specific area into Aoi Request	Pass

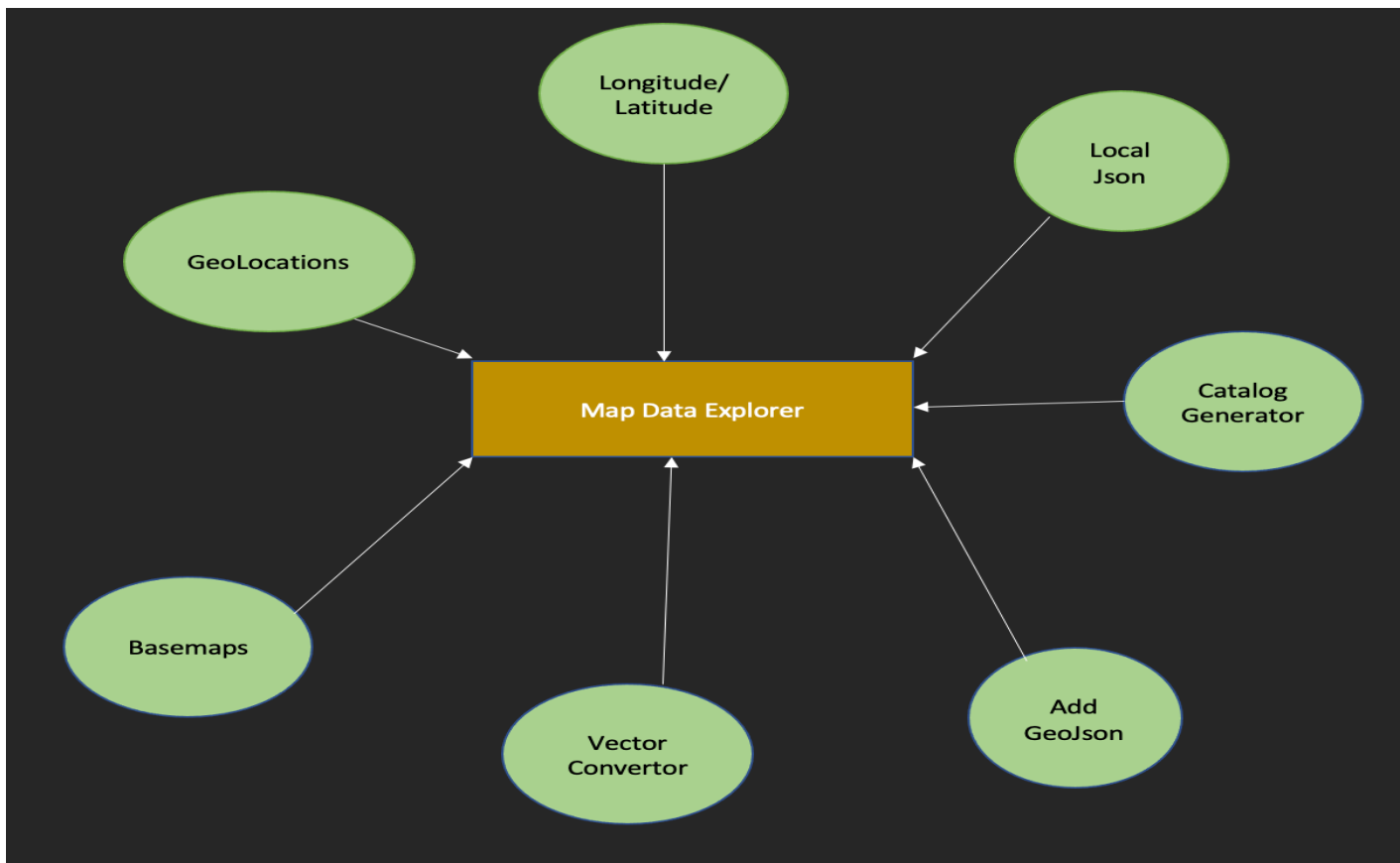
6.2. Data flow testing's



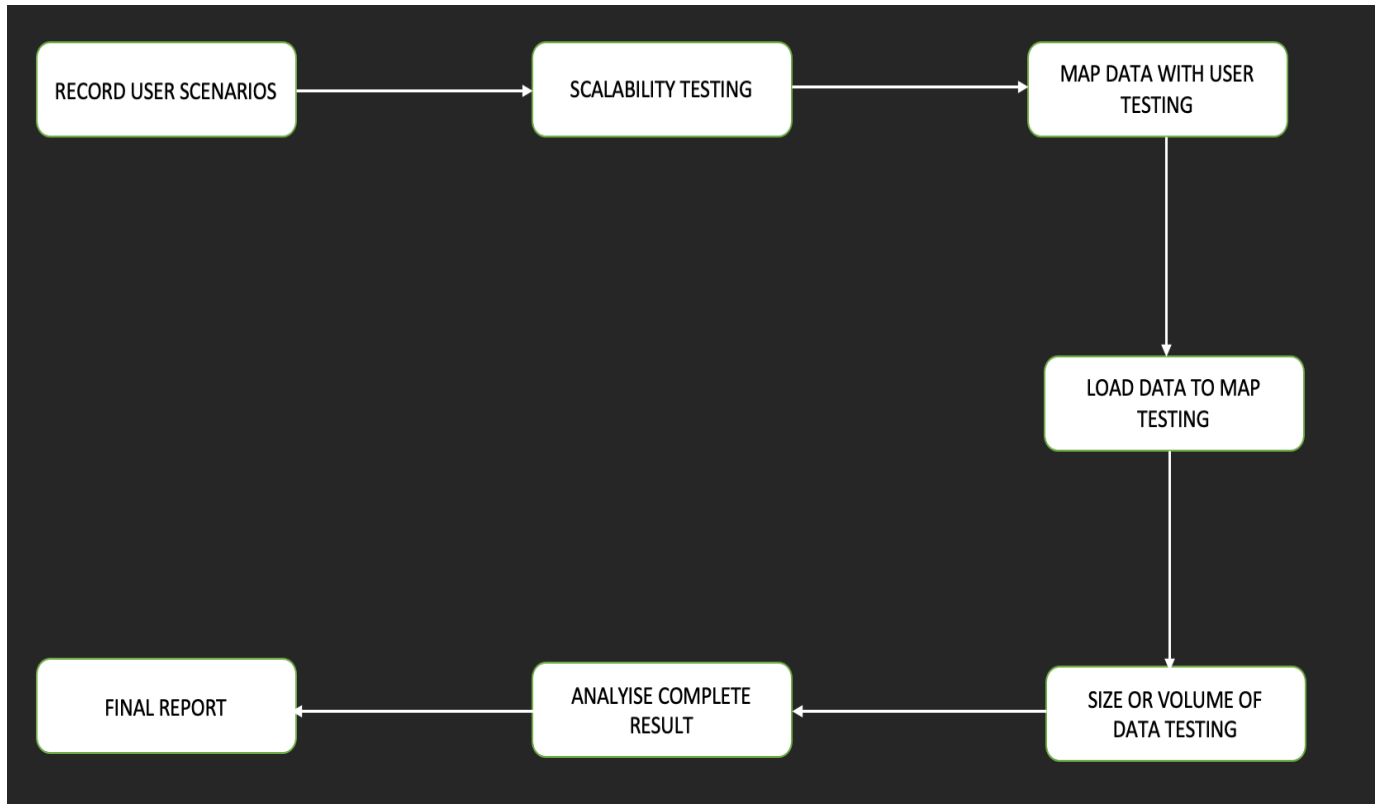
6.3. Units testing's

Name	Location	Details	Outcomes
 mbtiles	Side Navigation Drawer / Load Local Data	sometimes app crashes and show only black screen	Pass
GPKG Tiles	Side Navigation Drawer / Load Local Data	GPKG not loading local data	fail
MapBox	Main map view	Keyboaed keep on popping up when trying to interact with the map	Pass
Tools	Bottom menu	Tools doesn't work after using Side menu drawer -> Load Local Data -> Mbtiles	pass/fail
Tools	Bottom menu	Point , line and area measure show the measured area	Pass
AOI Map Offline	Side menu bar -> AOI MapOffline	Downloading the mbtiles	Pass

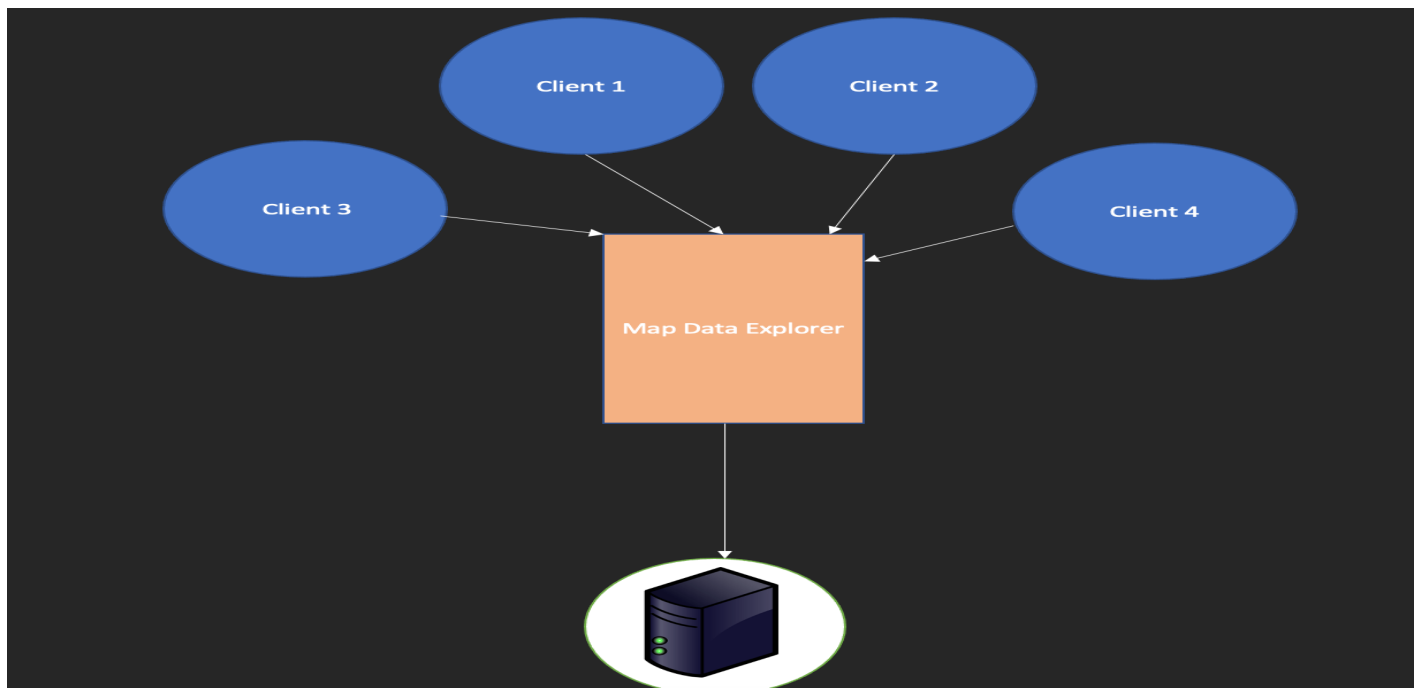
6.4. Integration testing's



6.5. Performance testing's



6.6. Stress Testing



Chapter 7

Summary, Conclusion and Futures Enhancements

Chapter 7: Summary, Conclusion & Futures Enhancements

7.1. Project's Summary

Map data explorer is hybrid applications. Map data explorer is just like a map application but with very efficient and many more functionalities like basemap, overlays, coordinate search and many more. In this application, we can convert vector tiles to raster tiles. We can load catalog, add geojson. We can use our location. We can calculate distance between two coordinates.

7.2. Achievements and Improvements

A map is a specific kind of online graphic that is used for information collecting, exploration, and sharing. The method used to create an idea map is called concept mapping. which presents thoughts, ideas, hypotheses, or questions in a visual manner. Concept maps can display new or existing relationships. They are tools for problem-solving, information processing, and information storage and retrieval. Links connect nodes or cells on a map that each contain a notion, object, theory, or query. The labels on the links include an arrow sign to indicate their orientation. The connections between the nodes are described by labelled links. The relationship's direction is shown by the arrow, which also functions as a phrase.

7.3. Lessons Learnt

First and first, we would want to give Allah (SWT) Almighty our sincere gratitude for this chance. He has granted us it and given us the physical stamina and positive outlook we need to finish this project work report. We appreciate the appropriate direction and advise provided by Sir Jameel and my project guide. We also thank our department staff, who all encourage and satisfy our needs to finish this project work. We extend our appreciation and thanks to our parents, friends, and anybody else who contributed to the successful completion of this project work.

7.4. Future Enhancements/Recommendations

In future enhancement we will add some extra features which will be more helpful to the user interface it will be more user-friendly and more securable rather than now. And also implement the real time processes.

Appendices

A.1. Standees

SUPERIOR UNIVERSITY LAHORE

FYP ID
(FYP-BCSM-F21-026)

DEPARTMENT OF COMPUTER SCIENCE

PROBLEM

- NEED TO CALCULATE DISTANCE BETWEEN TWO COORDINATES
- NEED TO CALCULATE DISTANCE BETWEEN TWO COORDINATES
- NEED A COORDINATE CONVERTER FOR CONVERTING BASE COORDINATE

PROBLEM

- WE WILL USE DIFFERENT BASEMAPS AND OVERLAYS
- WE CAN LOAD CATALOG AND ADD GEOJSON FILES
- WE WILL TRACE LOCATION AND LIVE TRACKING FROM ONE PLACE TO ANOTHER

MUHAMMAD JAMEEL SUMMRA (Supervisor)

AHMAR YOUSAF (Leader)

HARIS SHAHID (Member)

Result

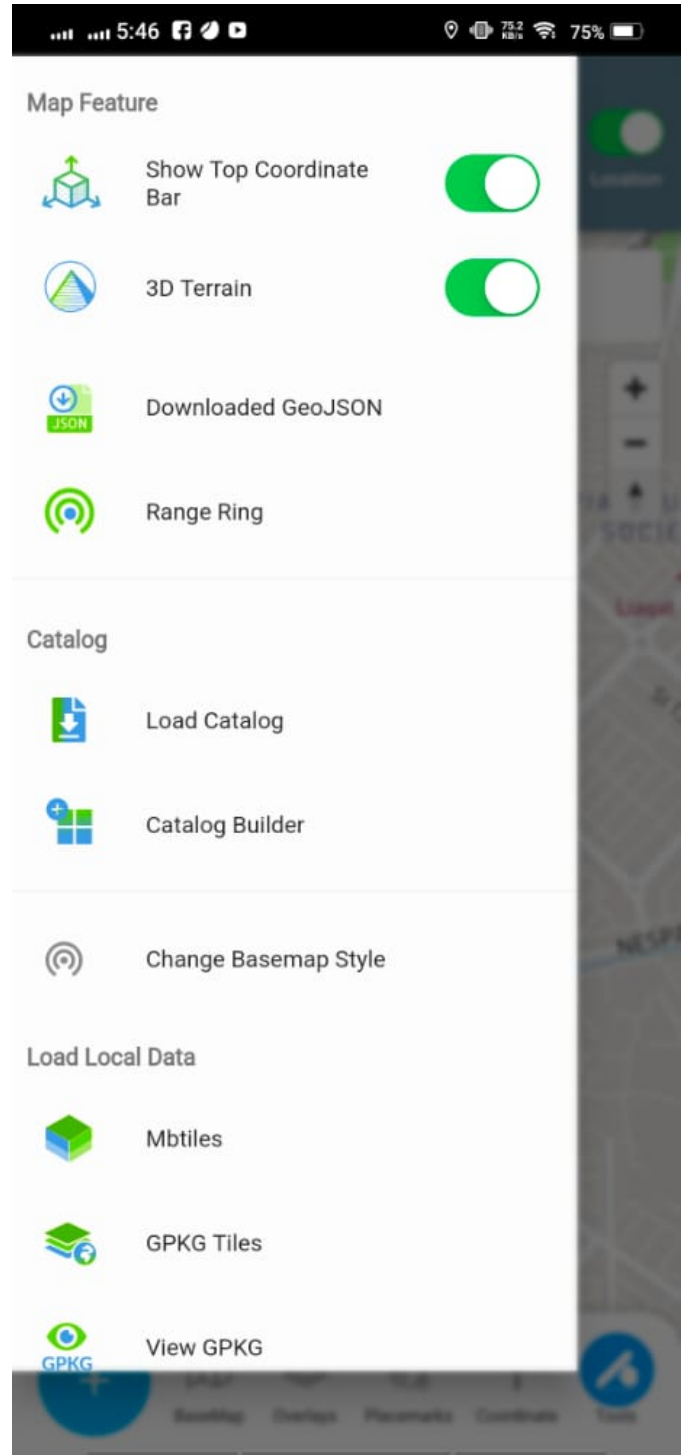
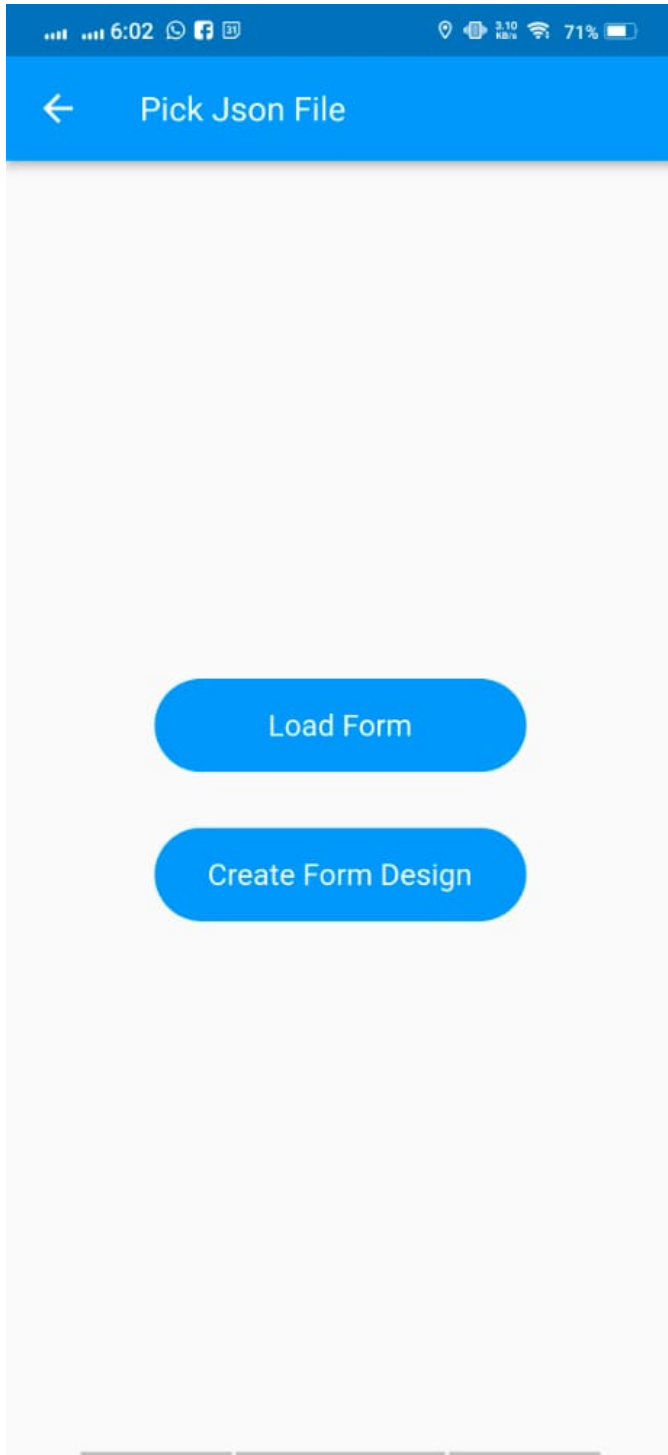
TOOL

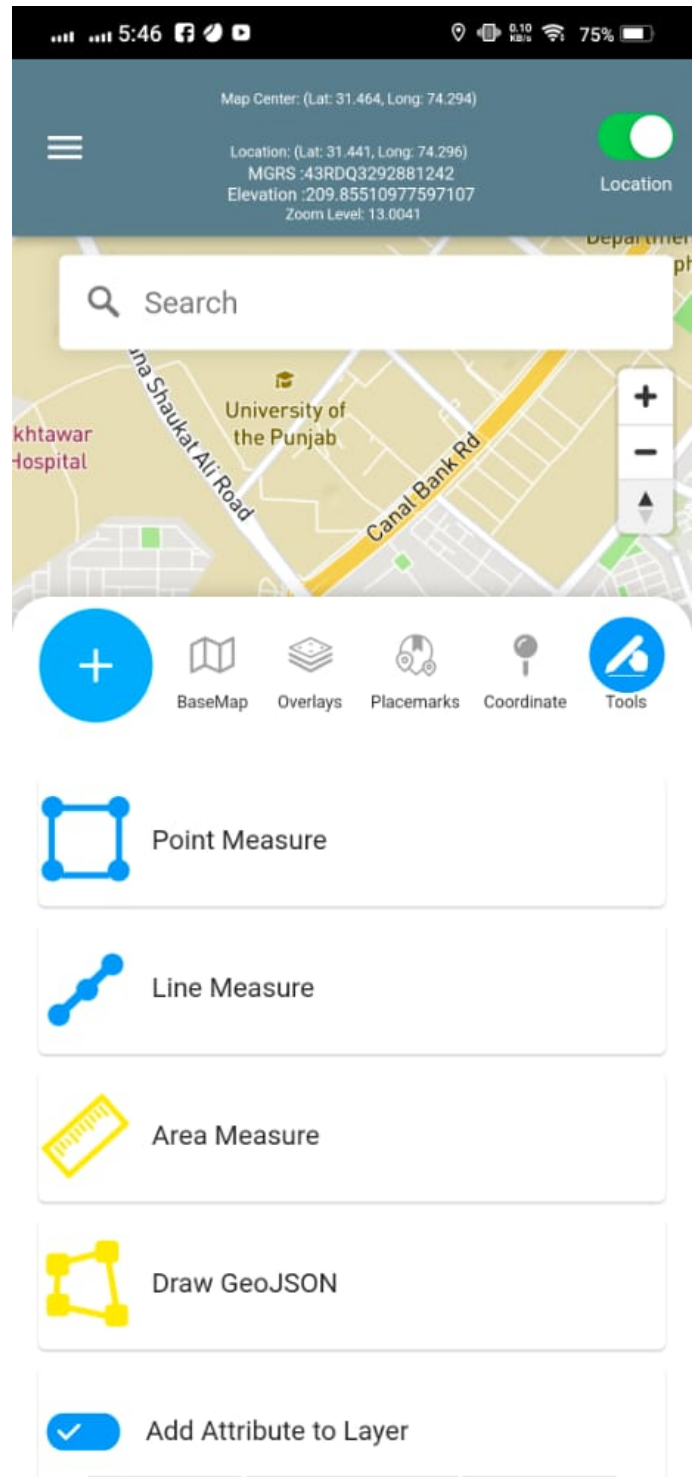
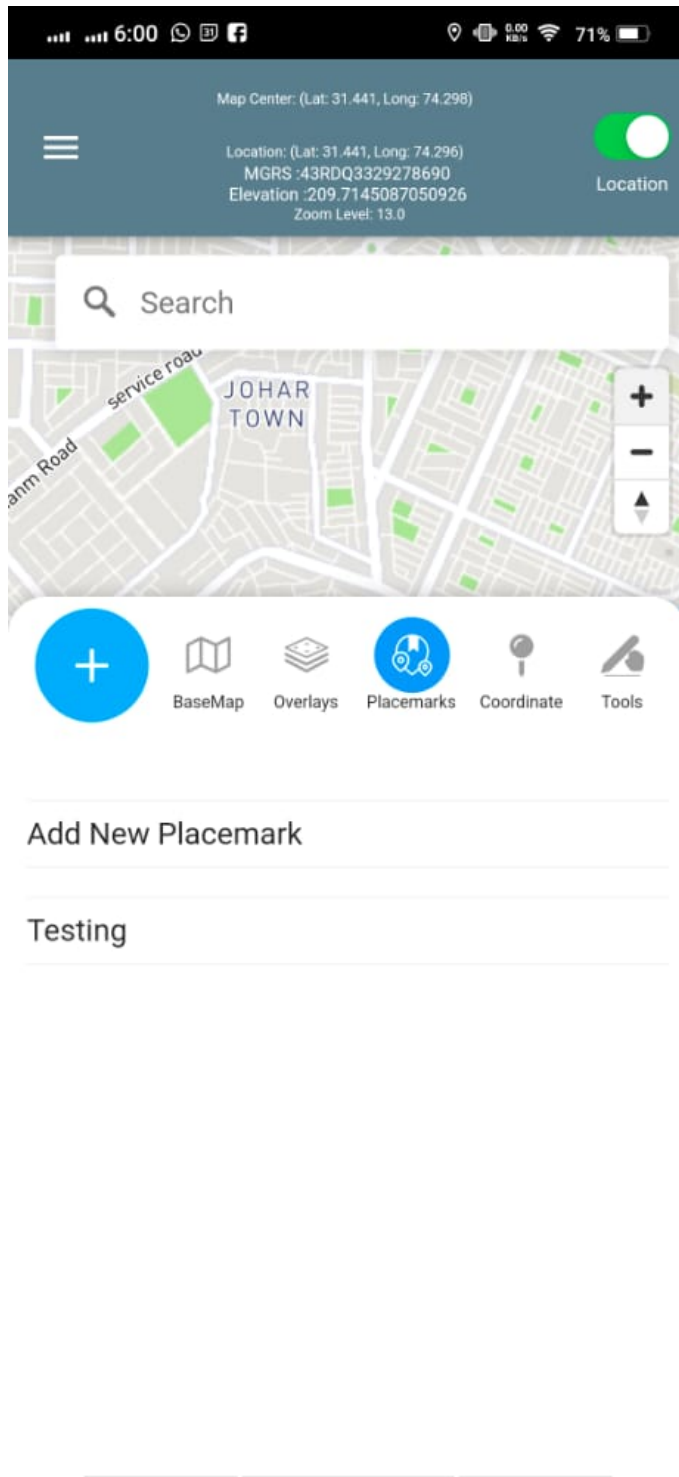
- FLUTTER
- SQLITE

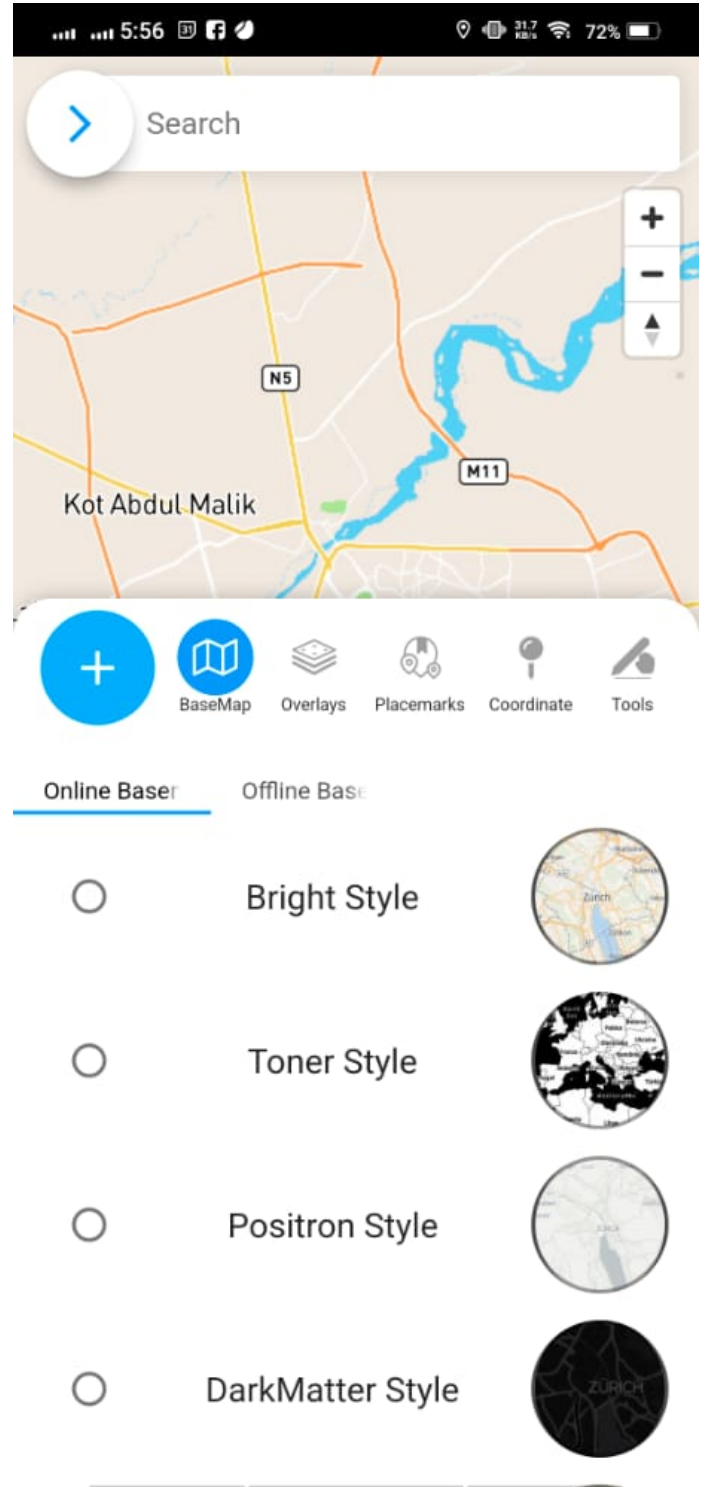
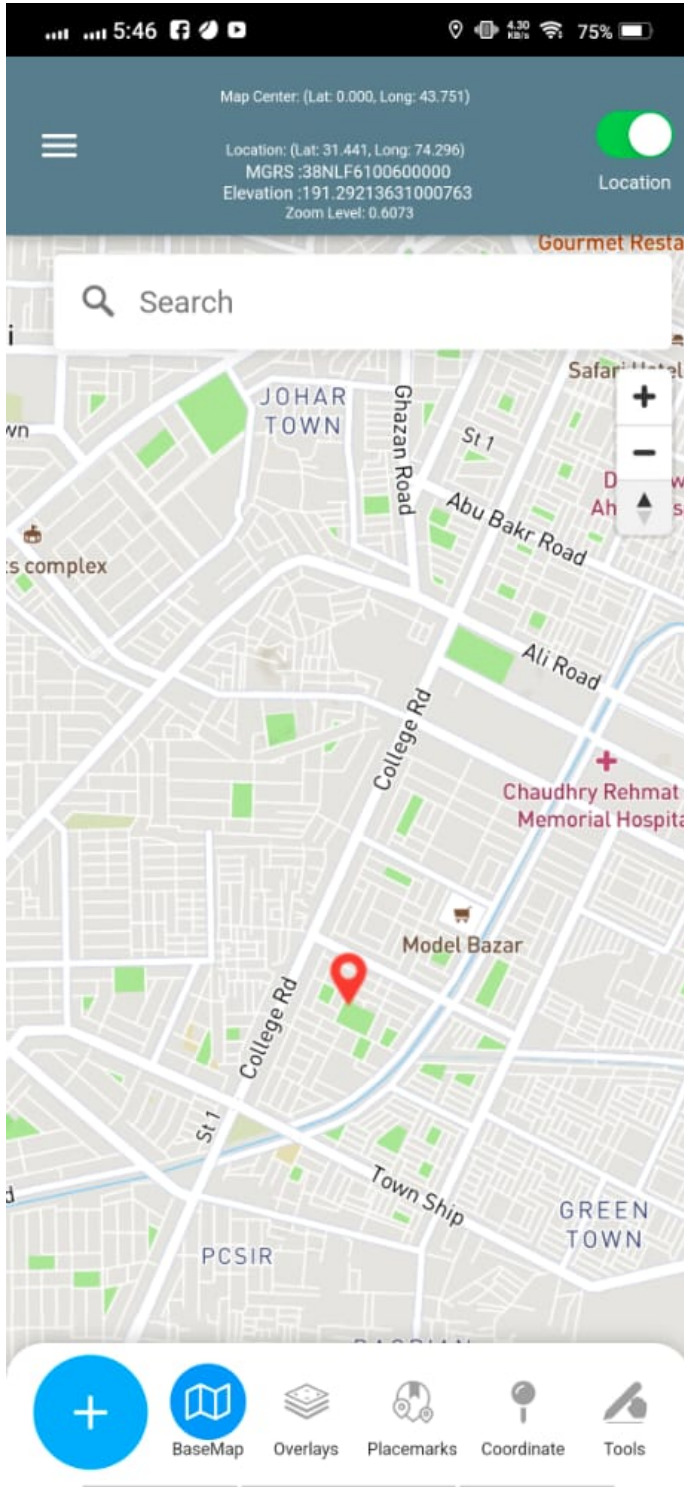
LANGUAGES

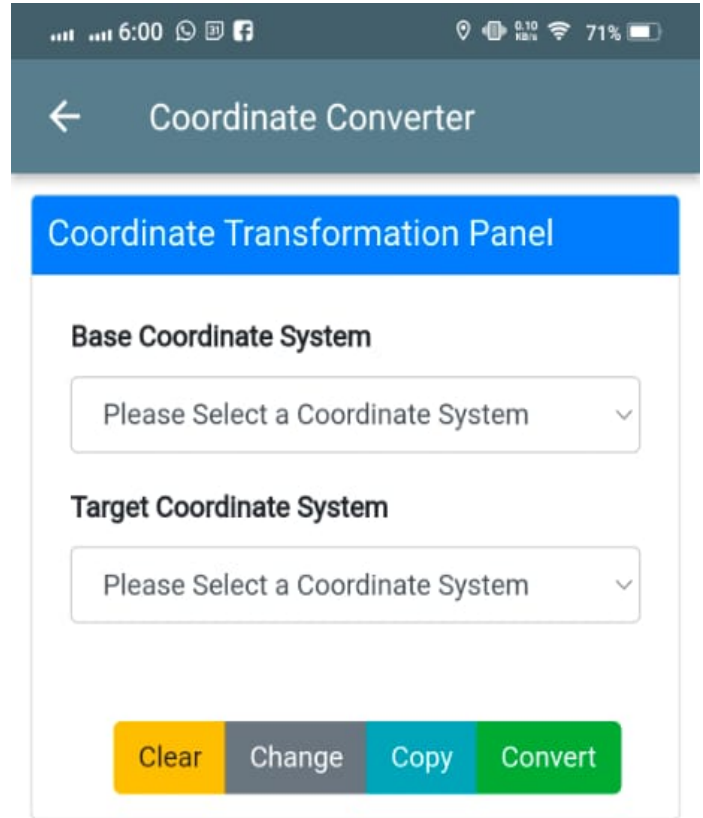
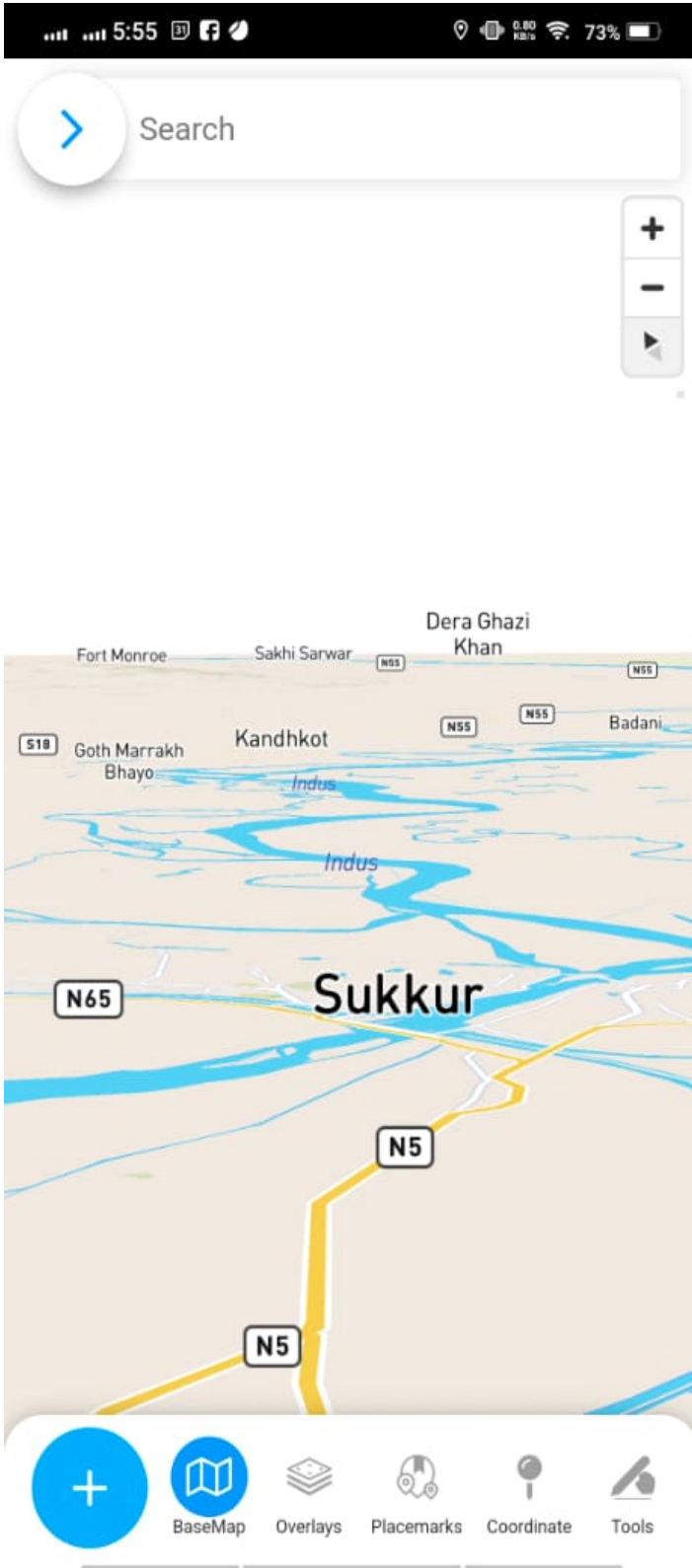
- HTML
- CSS
- JAVASCRIPT

App Screen Shots









Code Screen Shot

```
body: Column(  
  children: [  
    Expanded(  
      child: StreamBuilder<List<AoiRequest>>(  
        stream: AoiRequestBloc.databaseBloc.aoiRequest,  
        builder: (context, snapshot) {  
          if (snapshot.hasData) {  
            var aoiRequestList = snapshot.data;  
            if (aoiRequestList != null && aoiRequestList.length > 0) {  
              return ListView.builder(  
                itemCount: aoiRequestList.length,  
                itemBuilder: (BuildContext context, int index) {  
                  int downloadStatus =  
                    aoiRequestList[index].downloadStatus!;  
                  var downloadStatusString =  
                    AoiDownloadStatus.getDownloadStatus(  
                      aoiRequestList[index].downloadStatus!);  
  
                  var filelocation =  
                    aoiRequestList[index].destinationURL;  
                  return ListTile(  
                    leading: null,  
                    trailing:  
                      downloadStatus == AoiDownloadStatus.Complete  
                        ? InkWell(  
                          onTap: () {
```

```
OfflineClipTileListView.dart x AoiCollectionScreen.dart x ApiBaseHelper.dart x PreStagedUSAStatesDataScr
21
22 Future<dynamic> get(String url, {Map<String, dynamic>? headers}) async {
23   print('Api Get, url $url');
24   var responseJson;
25   try {
26     native_http.NativeResponse response = await native_http.get(
27       url,
28       headers: headers,
29     );
30
31     print(response);
32     print(response.body);
33
34     responseJson = _returnResponse(response);
35   } on SocketException {
36     print('No net');
37     throw FetchDataException('No Internet connection');
38   } catch (e) {
39     print(e);
40   }
41   print('api get recieved!');
42   return responseJson;
43 }
44
45 Future<dynamic> post(String url,
46   {Map<String, String>? headers,
```

```
OfflineClipTileListView.dart x AoiCollectionScreen.dart x ApiBaseHelper.dart x USAStatesDataBloc.dart x
1  import 'dart:async';
2
3  import 'package:flutter/foundation.dart';
4  // import 'package:offlinemapdata/repository/PreStagedDataRepository.dart';
5
6  import '../modal/apiresponses/USStatesResponse.dart';
7  import '../networking/ApiResponse.dart';
8  import '../repository/PreStagedDataRepository.dart';
9
10 class USAStatesDataBloc {
11   USAStatesDataBloc._() {
12     _usaStatesRepository = PreStagedDataRepository();
13   }
14
15   static final USAStatesDataBloc instance = USAStatesDataBloc._();
16
17   PreStagedDataRepository? _usaStatesRepository;
18
19   final StreamController<ApiResponse<List<USStatesResponse>>>
20     _registerDeviceController =
21     StreamController<ApiResponse<List<USStatesResponse>>>.broadcast();
22
23   StreamSink<ApiResponse<List<USStatesResponse>>> get _usaStatesDataSink =>
24     _registerDeviceController.sink;
25
26   Stream<ApiResponse<List<USStatesResponse>>> get usaStatesDataStream =>
```

```
OfflineClipTileListView.dart x AoiCollectionScreen.dart x WMTSCapabilitiesGdata.dart x PreStagedUSSta
1 class WMTSCapabilitiesGdata {
2   Capabilities? capabilities;
3
4   WMTSCapabilitiesGdata({this.capabilities});
5
6   WMTSCapabilitiesGdata.fromJson(Map<String, dynamic> json) {
7     capabilities = json['Capabilities'] != null
8       ? new Capabilities.fromJson(json['Capabilities'])
9       : null;
10  }
11
12  Map<String, dynamic> toJson() {
13    final Map<String, dynamic> data = new Map<String, dynamic>();
14    if (this.capabilities != null) {
15      data['Capabilities'] = this.capabilities!.toJson();
16    }
17    return data;
18  }
19 }
20
21 class Capabilities {
22   String? xsiSchemaLocation;
23   String? version;
24   String? xmlns;
25   String? xmlnsOws;
26   String? xmlnsXlink;
```

```
OfflineClipTileListView.dart x WMTSCapabilitiesGdata.dart x pubspec.yaml x PreStagedUSASState
Flutter commands Pub get Pub up
86     device_info_plus: ^3.2.2
87     share_plus_web: any
88     # adaptive_dialog: ^1.3.0
89     native_http:
90       path: ./native_http-master
91     android_path_provider: ^0.3.0
92     intl_utils: ^2.6.1
93     share_plus: ^4.0.4
94     adaptive_dialog: ^1.5.0+1
95     shared_preferences: ^2.0.13
96     proj4dart: ^2.0.0
97     wkt_parser: ^2.0.0
98     meta: ^1.3.0
99     path_provider_ex: ^1.0.1
100    in_app_purchase: ^3.0.4
101    file_manager: ^1.0.0
102    # flutter_archive: ^5.0.0
103
104    dev_dependencies:
105      flutter_test:
106        sdk: flutter
107
108    # For information on the generic Dart part of this file, see the
109    # following page: https://dart.dev/tools/pub/pubspec
Document 1/1 > dependencies: > adaptive_dialog: > ^1.5.0+1
```

```
OfflineClipTileListView.dart x gpkg_testview.dart x show_local_files.dart x mbtiles_show.dart x
87 Row(
88   mainAxisAlignment: MainAxisAlignment.start,
89   children: [
90     Text('Table Name: ', style: TextStyle(fontWeight: FontWeight.bold, fontSize: 16)),
91     Text(widget.mbtilesLayerList[index]['table'][i]['name']),
92   ],
93 ), // Row
94 InkWell(
95   onTap: (){
96     if(widget.mbtilesLayerList[index]['table'][i]['icon'] == Icons.remove_red_eye_outlined){
97       widget.mbtilesLayerList[index]['table'][i]['icon'] = Icons.visibility_off_outlined;
98
99       webController.evaluateJavascript("GL.removeLayer('gpkg${widget.mbtilesLayerList[index]['tab
100 Navigator.pop(context);
101 Navigator.pop(context);
102   }
103   else if(widget.mbtilesLayerList[index]['table'][i]['icon'] == Icons.visibility_off_outlined){
104     widget.mbtilesLayerList[index]['table'][i]['icon'] = Icons.remove_red_eye_outlined;
105
106     webController.evaluateJavascript("addJPGPNGWEBPLayer('${widget.mbtilesLayerList[index]['tab
107     webController.evaluateJavascript("GL.goToBBOX('${widget.mbtilesLayerList[index]['table'][i][
108
109     Navigator.pop(context);
110     Navigator.pop(context);
111   }
112   setState(() {});
Terminal
```

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