

An Android Development Project Report

On

Search Nearby Business Using Kotlin

IN ANDROID STUDIO

SUBMITTED BY:

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UNDER



Google Developers

Google Supported Virtual Internship Program

ANDROID BASICS IN KOTLIN

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A mobile app is built where the user can search for his nearby locations based on his requirement. Whenever the user gives input of business type like a hotel, petrol pumps, hospitals, etc. using Place API and as a response we obtain the co-ordinates that are marked on the Google map.

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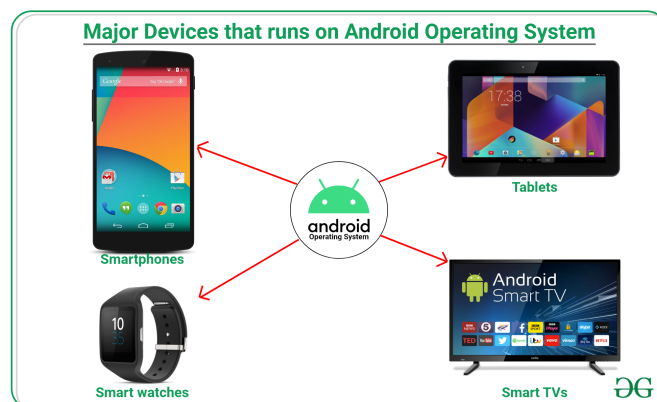
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1.1 INTRODUCTION

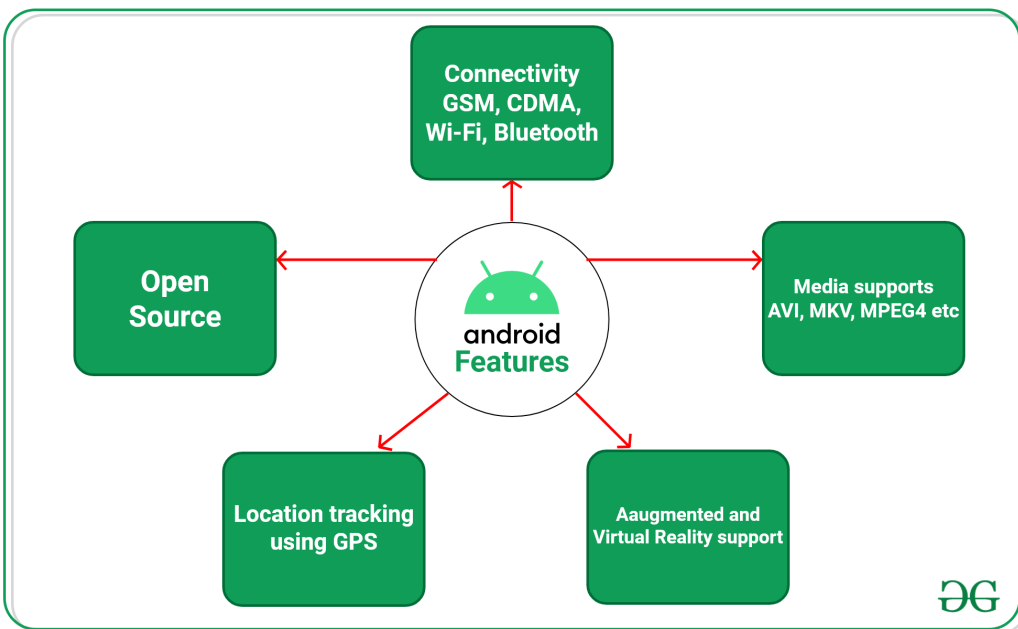
Introduction to Android Development

Android operating system is the largest installed base among various mobile platforms across the globe. Hundreds of millions of mobile devices are powered by Android in more than 190 countries of the world. It conquered around 71% of the global market share by the end of 2021, and this trend is growing bigger every other day. The company named Open Handset Alliance developed Android for the first time that is based on the modified version of the Linux kernel and other open-source software. Google sponsored the project at initial stages and in the year 2005, it acquired the whole company. In September 2008, the first Android-powered device was launched in the market. Android dominates the mobile OS industry because of the long list of features it provides. It's user-friendly, has huge community support, provides a greater extent of customization, and a large number of companies build Android-compatible smartphones. As a result, the market observes a sharp increase in the demand for developing Android mobile applications, and with that companies need smart developers with the right skill set. At first, the purpose of Android was thought of as a mobile operating system. However, with the advancement of code libraries and its popularity among developers of the divergent domain, Android becomes an absolute set of software for all devices like tablets, wearables, set-top boxes, smart TVs, notebooks, etc



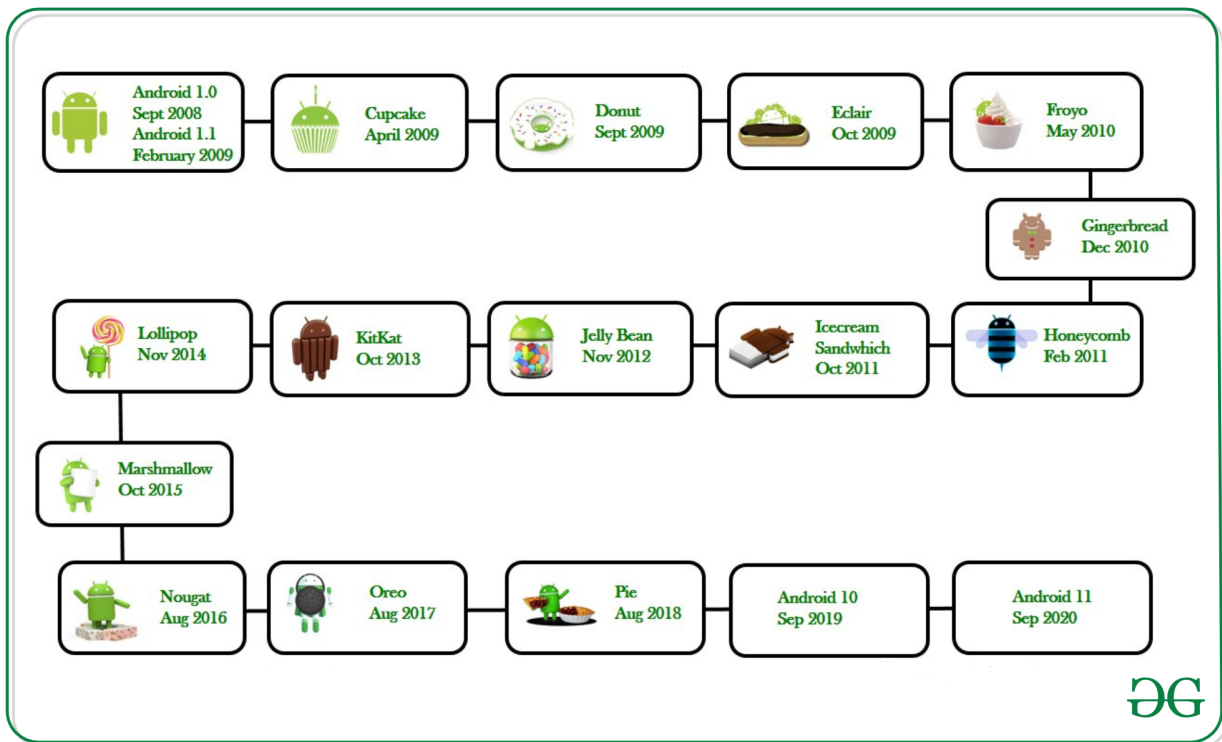
Features of Android

Android is a powerful open-source operating system that open-source provides immense features and some of these are listed below.



- Android Open Source Project so we can customize the OS based on our requirements.
- Android supports different types of connectivity for GSM, CDMA, Wi-Fi, Bluetooth, etc. for telephonic conversation or data transfer.
- Using wifi technology we can pair with other devices while playing games or using other applications.
- It contains multiple APIs to support location-tracking services such as GPS.

- We can manage all data storage-related activities by using the file manager.
- It contains a wide range of media supports like AVI, MKV, FLV, MPEG4, etc. to play or record a variety of audio/video.
- It also supports different image formats like JPEG, PNG, GIF, BMP, MP3, etc.
- It supports multimedia hardware control to perform playback or recording using a camera and microphone.
- Android has an integrated open-source WebKit layout-based web browser to support User Interfaces like HTML5, and CSS3.
- Android supports multi-tasking means we can run multiple applications at a time and can switch between them.
- It provides support for virtual reality or 2D/3D Graphics.
- Android Versions
- Google first publicly announced Android in November 2007 but was released on 23 SEPTEMBER 2008 to be exact. The first device to bring Android into the market was the HTC Dream with the version Android 1.0. Since then, Google released a lot of android versions such as Apple Pie, Banana Bread, Cupcake, Donut, Éclair, Froyo, Gingerbread, Jellybeans, Kitkat, Lollipop, marshmallow, Nougat, Oreo, etc. with extra functionalities and new features.



The following table shows the version details of android which is released by Google from 2007 to date.

| Code Name | Version | API level | Release date |
|-------------|---------------------|-----------|--------------------|
| – | Android 1.0 | 1 | September 23, 2008 |
| – | Android 1.1 | 2 | February 9, 2009 |
| Cupcake | Android 1.5 | 3 | April 30, 2009 |
| Donut | Android 1.6 | 4 | September 15, 2009 |
| Eclair | Android 2.0 – 2.1 | 5-7 | October 26, 2009 |
| Froyo | Android 2.2 – 2.2.3 | 8 | May 20, 2010 |
| Gingerbread | Android 2.3 – 2.3.4 | 9-10 | December 6, 2010 |

| | | | |
|--------------------|-----------------------|---------|-------------------|
| Honeycomb | Android 3.0.x – 3.2.x | 11 – 13 | February 22, 2011 |
| Ice Cream Sandwich | Android 4.0 – 4.0.4 | 14 – 15 | October 18, 2011 |
| Jelly Bean | Android 4.1 – 4.1.2 | 16 – 18 | July 9, 2012 |
| Kitkat | Android 4.4 – 4.4.4 | 19 | July 9, 2012 |
| Lollipop | Android 5.0 – 5.1 | 21 – 22 | October 17, 2014 |
| Marshmallow | Android 6.0 – 6.0.1 | 23 | October 5, 2015 |
| Nougat | Android 7.0 – 7.1 | 24 – 25 | August 22, 2016 |
| Oreo | Android 8.0 | 26 | August 21, 2017 |
| Pie | Android 9.0 | 27 | August 6, 2018 |
| Android Q | Android 10.0 | 29 | September 3, 2019 |
| Android 11 | Android 11.0 | 30 | September 8, 2020 |

| | | | |
|-----------|---------------------|-------|-----------------|
| Snow Cone | Android 12.0 – 12.1 | 31-32 | October 4, 2021 |
| Tiramisu | Android 13 | | UPCOMING |

Programming Languages used in Developing Android Applications

1. Java
2. Kotlin

Developing the Android Application using Kotlin is preferred by Google, as Kotlin is made an official language for Android Development, which is developed and maintained by JetBrains. Previously before Java is considered the official language for Android Development. Kotlin is made official for Android Development in Google I/O 2017.

The Android is an open-source Operating system and hence possesses a vast community for support.

The design of the Android Application has guidelines from Google, which becomes easier for developers to produce more intuitive user applications.

Fragmentation gives more power to Android Applications. This means the application can run two activities on a single screen.

Releasing the Android application in the Google play store is easier when it is compared to other platforms.

Disadvantages of Android Development

Fragmentation provides a very intuitive approach to user experience but it has some drawbacks, where the development team needs time to adjust to the various screen sizes of mobile smartphones that are now available in the market and invoke the particular features in the application.

The Android devices might vary broadly. So the testing of the application becomes more difficult.

As the development and testing consume more time, the cost of the application may increase, depending on the application's complexity and features

What does Kotlin code look like?

```
KOTLIN

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        ...
        fab.setOnClickListener { view ->
            Snackbar.make(view, "Hello $name", Snackbar.LENGTH_LONG).show()
        }
    }
}
```

Nullable and NonNull types help reduce NullPointerExceptions

Use lambdas for concise event handling code

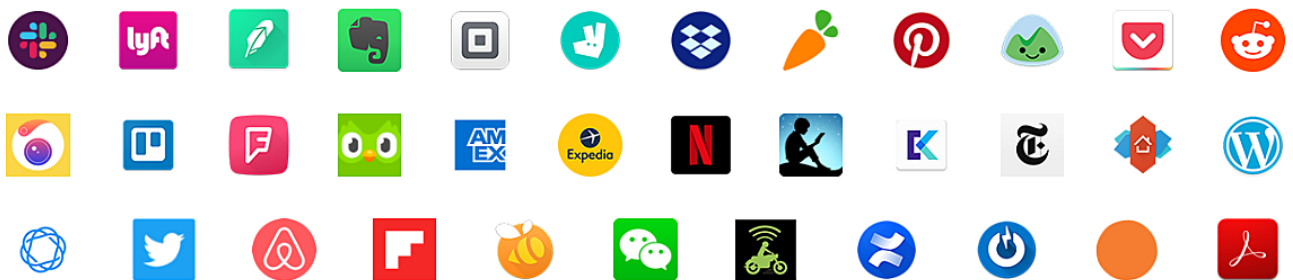
Use template expressions in strings to avoid concatenation

Semicolons are optional

Apps built with Kotlin

Many apps are already built with Kotlin—from the hottest startups to Fortune 500 companies. Learn how Kotlin has helped their teams become more productive and write higher quality apps.

EX.



2. LITERATURE SURVE.

2.1 Existing problem

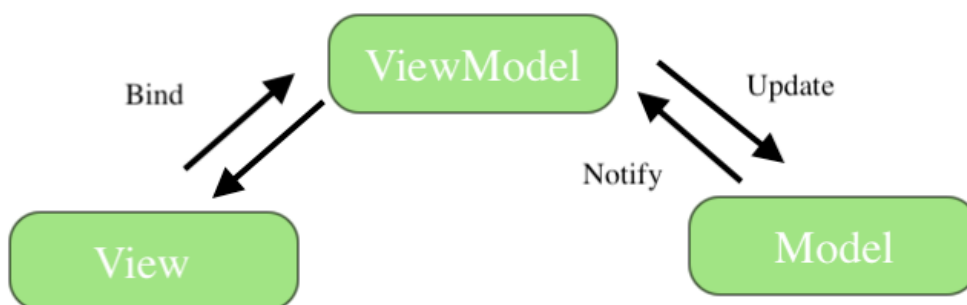
An Android Application To Search Nearby Business Using Kotlin

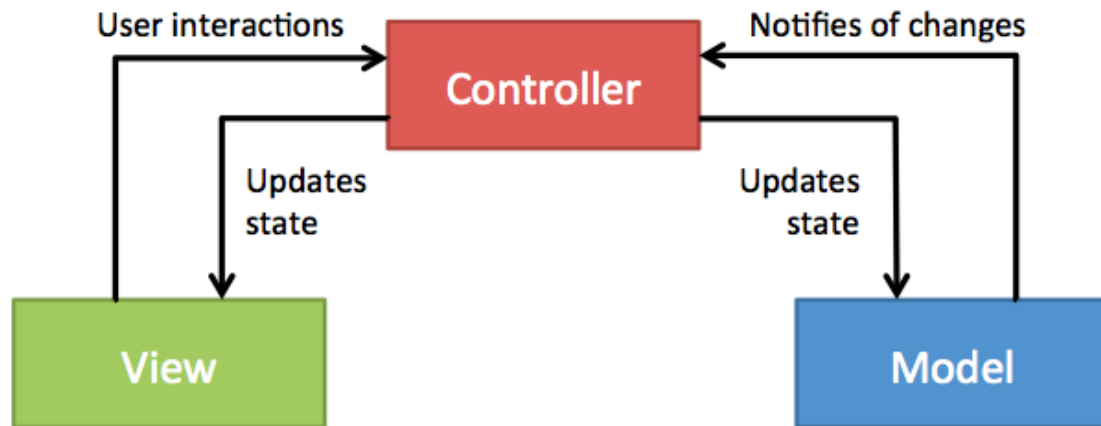
2.2 Proposed solution

A mobile app is built where the user can search for his nearby locations based on his requirement. Whenever the user gives input of business type like a hotel, petrol pumps, hospitals, etc. using Place API and as a response we obtain the co-ordinates that are marked on the Google map.

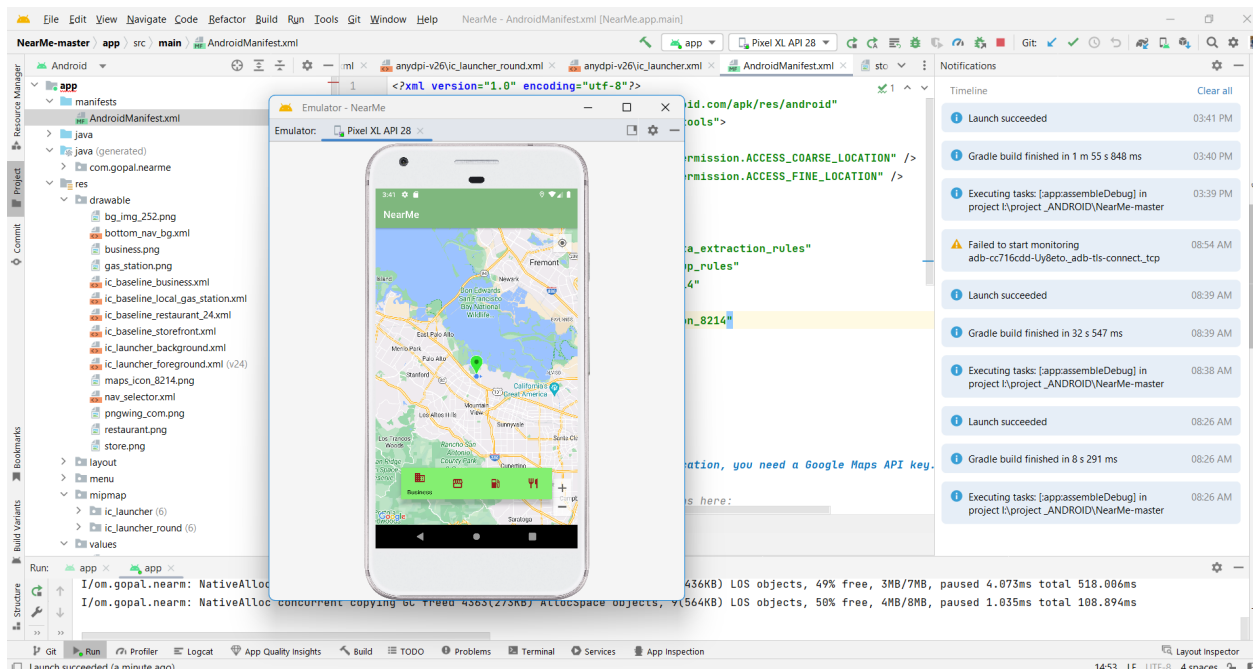
3.THEORITICAL ANALYSIS.

3.1 Block diagram





3.2 Hardware / Software designing



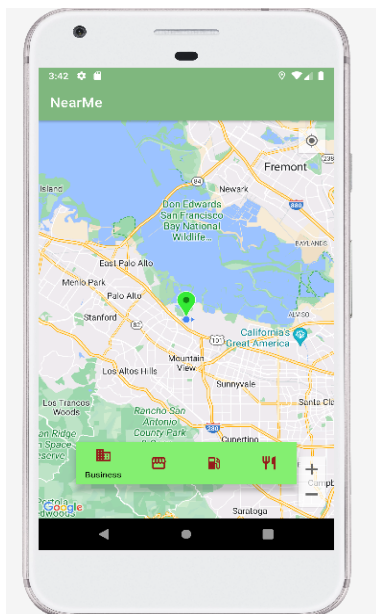
Software designing View

Learn to use Google Maps Platform Maps and Places APIs to build a local business search, which geolocates the user and shows interesting places nearby. The app integrates geolocation, Place Details, Place Photos, and more.

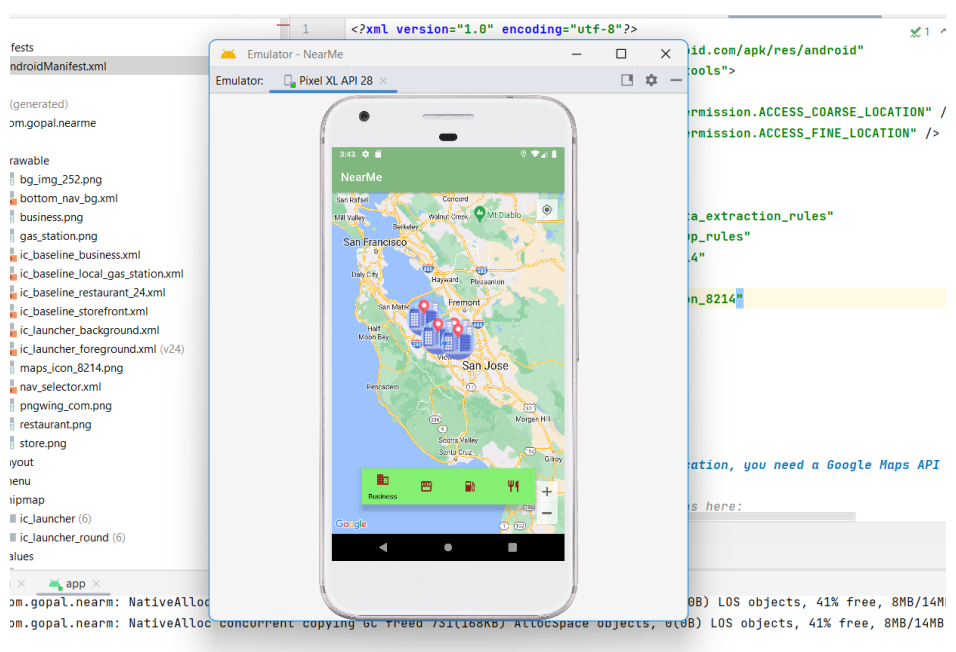
Prerequisites

- Basic knowledge of HTML, CSS, and JavaScript
- A project with a billing account (follow instructions in the next step if you don't have this).
- For the enablement step below, you will need to enable **Maps JavaScript API** and **Places API**.
- An API key for the project above.

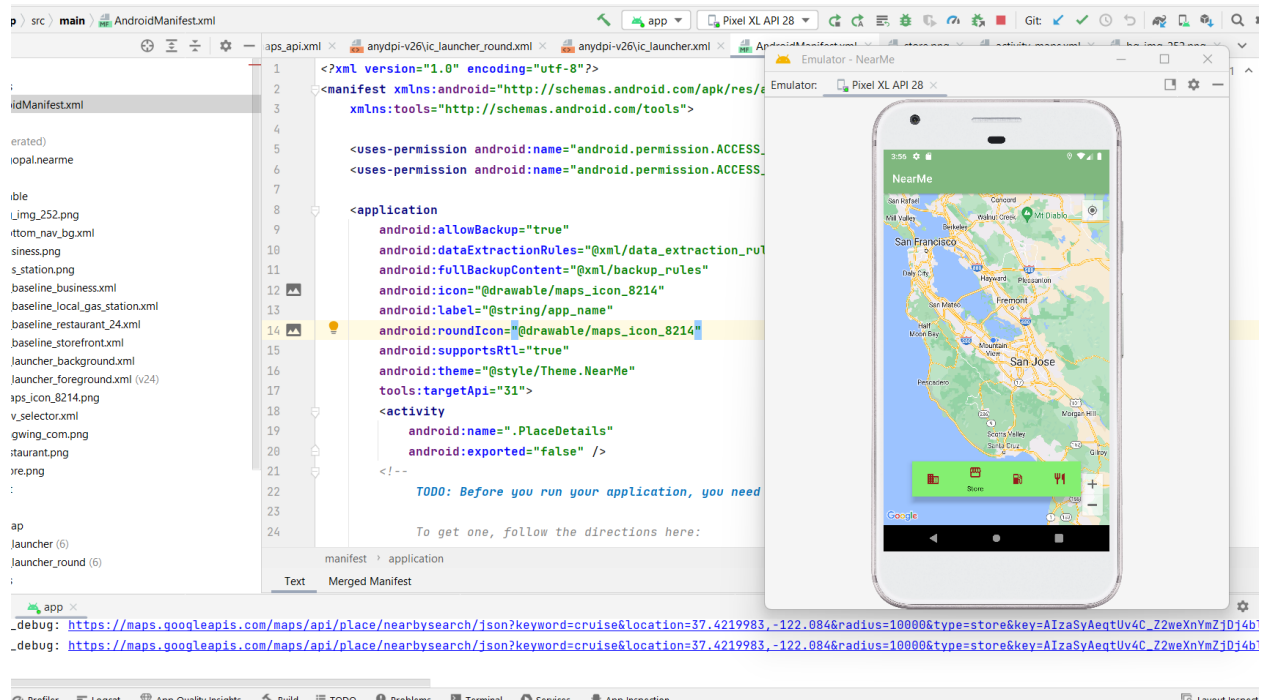
4.EXPERIMENTAL INVESTIGATIONS.



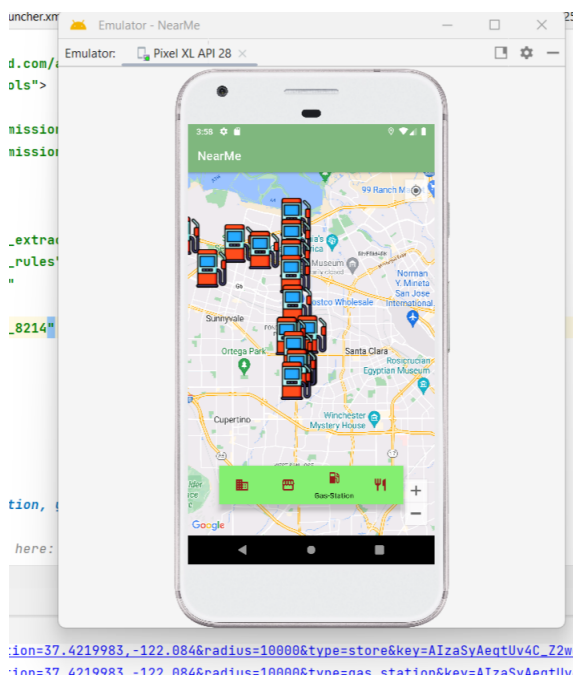
Mobile View



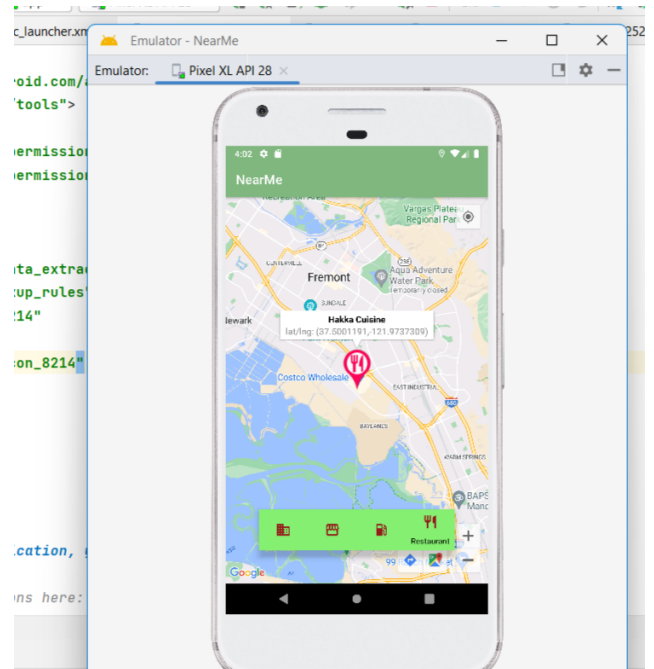
Finding Near business view



Store View

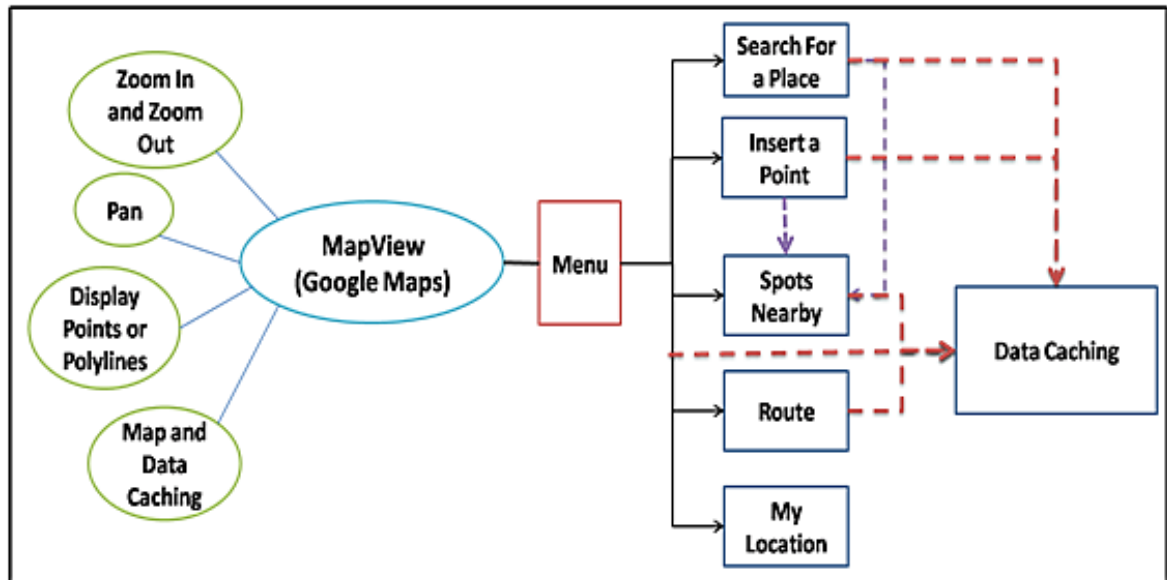


GAS STATION VIEW

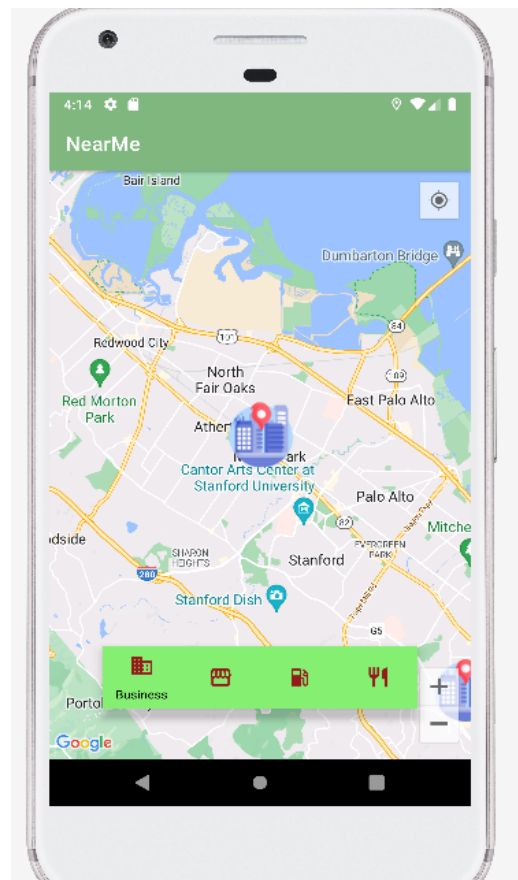


RESTAURANT VIEW

5 . FLOWCHART



6.RESUL , APPLICATIONS.



7.CONCLUSION AND FUTURE SCOPE.

This Near me Finding application will help to find the near restaurant hotel ,business and store thus application very helpful to users they find your near places .

7.1 Future Scope

This application helps to find the using google maps API of finding a location in Future adding by Admin. panal In Future we can also add scheduled reminder places and saving facility in app or saving and secure user data according to requirement of user .

8.URLs & Account Ids

GitHub URL: <https://github.com/smartinternz02/SPSGP-80479-Virtual-Internship---Android-Application-Development-Using-Kotlin>

project source code link <https://github.com/CODERPRADEEPVISHWAKARMA/FindingNearMe>

Smart Internz Registered ID: prog.pradeepvishwakarma@gmail.com

Demo Link: <https://www.youtube.com/embed/klpU1UcBQHw>

9.Acknowledgements

I have taken much efforts in this project. However, it would not have been possible

without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to SMARTINTERNZ (Experiential Learning & Remote Externship Platform to bring academia & industry very close for a common goal of talent creation) for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project. I would like to express my gratitude towards member of (Smart Internz) for their kind co-operation and encouragement which help me in completion of this project.

I would like to express my special gratitude and thanks to industry persons for giving me such attention and time.

My thanks and appreciations also go to people who have willingly helped me out with their abilities.

9.1 Reflection Notes

I thoroughly enjoyed my internship and had a very valuable experience under my belt. I know this will help when looking for jobs and needing references.

I know that practical experience is the best, and internships give students that hands-on experience they need. I feel that quality internships are essential to develop key skills that we can't get in a classroom. Skills such as multitasking, communicating, learning to deal with diversity, and dealing with deadlines are different when you are working for someone else, not yourself like everyone do it college. Internships are also a great way to network with people in the industry. Our mentor and co-workers were great about giving us contacts and referring us to open positions in the industry.

I have learned that stressing over little things will not get us anywhere. I have learned to work well as a team and that without my counter parts the work would not get done.

Another aspect that I learned throughout the internship is to never be afraid to ask lots of questions. By asking questions we get answers.\

10. References

- <https://www.geeksforgeeks.org/introduction-to-kotlin/>
- [*https://github.com/smartinternz02/SPSGP-80479-Virtual-Internship---Android-Application-Development-Using-Kotlin*](https://github.com/smartinternz02/SPSGP-80479-Virtual-Internship---Android-Application-Development-Using-Kotlin)
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- <https://www.youtube.com/embed/Oek2VE2ozzE>
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- <https://www.youtube.com/embed/F3ZM4rW9bFk>
- <https://www.youtube.com/embed/klpU1UcBQHw>