BROCHURE ORDER SYSTEM
(MOBILE APPLICATION DEVELOPMENT)

INDUSTRIAL TRAINING PROJECT REPORT

Submitted in partial fulfilment of the requirements for the award of the degree

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BACHELOR OF TECHNOLOGY

in

INFORMATION TECHNOLOGY

by

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CERTIFICATE OF TRAINING

ABSTRACT

The era of mobile technology opens the window towards android applications. The websites are vanishing and the mobile phones are emerging. It's time to change from conventional websites to Apps, which has become the part of our daily routine.

*Today, I'm going to introduce an app which is based on "**brochureordersystem.apk**" which gives you an efficient way to collect orders regarding brochures which are used at official and non- official purposes. This software collects details from customers, stores it in an online database and updates the customer about their delivery. The goal of the project is to explore how to realize a brochure delivery website using the android platform. Moreover, the project scrutinizes how to integrate current technologies like Google Calendar, Google Map, Browser, Contact application and Phone application into the prototype. Objective is to provide a user-friendly interface which will link the user with their brochure development company and provide the customers with the easy and efficient way of ordering and saving their time and efforts to stand in a queue.*

Furthermore, the project has investigated non-functional aspects including extendibility, future scope, and usability. Overall, the project presents a comprehensive brochure management in the new developing mobile platform.

ACKNOWLEDGEMENT

It gives me an immense pleasure this section as a tribute to those who always stood by me as a strong and acted as torchbearers for me.

I take this opportunity to express my deep gratitude and sincere regards to my college faculty and lab assistants for their exemplary knowledge and guidance, monitoring and constant encouragement throughout the course of this project. The blessing, help and guidance given by them time to time helped me in the completion of this process and shall carry with me a long way in the journey of life on which I am about to embark.

Lastly, I thank Almighty, my parents and friends for their constant encouragement and support without which this project would not have been possible.

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INTRODUCTION

1.0 WHAT IS APPLICATION DEVELOPMENT?

Application development is the process of creating a computer program or a set of programs to perform the different tasks that a business requires. From calculating monthly expenses to scheduling sales reports, applications help businesses automate processes and increase efficiency. Every App building process follows the same steps including gathering of requirements, designing prototypes, testing, implementation and integration.

1.1.1 ANDROID APPLICATION DEVELOPMENT

Android Application Development is the process by which applications are created for devices running the Android operating system. Google states that "Android apps can be written using Kotlin, Java, and C++ languages" using the Android software development kit (SDK), while using other languages is also possible. All non-JVM languages, such as Go, javascript, C, C++ or assembly, need the help of JVM language code, that may be supplied by tools, likely with restricted API support. Some programming languages and tools allow cross-platform app support (i.e. for both Android an IOS). Third party tools, development environments, and language support have also continued to evolve and expand since the initial SDK was released in 2008. The official Android app distribution mechanism to end users is Google Play; it also allows staged gradual app release, as well as distribution of pre-release app versions to testers.

1.1.2 OFFICIAL DEVELOPMENT TOOLS:

A SOFTWARE DEVELOPMENT KIT (SDK)

A software development kit (SDK) is a collection of software development tools in one installable package. They facilitate the creation of applications by having

compiler, debugger and perhaps a software framework. They are normally specific to a hardware platform and operating system combination. To create applications with advanced functionalities such as advertisements, push notifications, etc. most application software developers use specific software development kits.

Some SDKs are required for developing a platform-specific app. For example, the development of an Android app on the Java platform requires a Java Development Kit.

For iOS applications (apps) the iOS SDK is required. For Universal Windows Platform the .NET Framework SDK might be used. There are also SDKs that add additional features and can be installed in apps to provide analytics, data about application activity, and monetization options. Some prominent creators of these types of SDKs include Google, InMobi, and Facebook.

1.1.1.2 ANDROID SDK PLATFORM TOOLS

The Android SDK Platform Tools are a separately downloadable subset of the full SDK, consisting of command-line tools such as adb and fastboot

1.1.1.3 ANDROID NATIVE DEVELOPMENT KIT (NDK)

The NDK includes support for CMake and its own ndk-build (based on GNU Make). Android Studio supports running either of these from Gradle. Other third-party tools allow integrating the NDK into Eclipse and Visual Studio.

1.1.1.4 ANDROID OPEN ACCESSORY DEVELOPMENT KIT

The Android 3.1 platform (also back ported to Android 2.3.4) introduces Android Open Accessory support, which allows external USB hardware (an Android USB accessory) to interact with an Android-powered device in a special "accessory" mode. When an Android-powered device is in accessory mode, the connected accessory acts as the USB host (powers the bus and enumerates devices) and the

Android-powered device acts as the USB device. Android USB accessories are specifically designed to attach to Android-powered devices and adhere to a simple protocol (Android accessory protocol) that allows them to detect Android-powered devices that support accessory mode

1.1.3 TYPES OF APPLICATION DEVELOPMENTS

1.1.3.1 Custom Application Development

When off-the-shelf software doesn't meet specific business requirements, the best option is to go custom. Hire developers to build apps for you, or build on your own with do-it-yourself tools.

1.1.3.2 Rapid Application Development

The RAD (Rapid Application Development) model follows an incremental approach. You can simultaneously develop the individual modules of the application to enable faster delivery of the final product.

1.1.3.3 Low-Code Application Development

Low-code platforms include intuitive visual interfaces that make it easy to build and launch apps, even for non-programmers. You can drag and drop snippets of code and modify them, based on business logic, to design automated workflows.

1.1.3.4 Mobile Application Development

Mobile application development is the process of creating apps that run on any mobile platform: Android and iOS. With everything you need right at your fingertips, you can track inventory or make instant updates from your phone.

1.1.3.5 Database Application Development

Database applications are designed to collect, organize, and manage information efficiently. They're used to sort data by criteria, perform calculations, create reports, and share information with team members.

1.1.3.6 Enterprise Application Development

Enterprise applications are a type of software developed to cater to large-scale organizations. They support enterprise-grade features, like massive data storage and automation of complex business processes.

1.1.3.7 Web Application Development

Web applications are software developed for a specific purpose, hosted on a web server. They can be accessed using any internet-enabled device, like phones, laptops, and desktops. Some examples of web applications are online banking sites, ecommerce websites, and social networks.

1.2 WHAT IS MOBILE APP DEVELOPMENT?

Mobile app development is the act or process by which a mobile app is developed for mobile devices, such as personal digital assistants, enterprise digital assistants or mobile phones. These applications can be pre-installed on phones during manufacturing platforms, or delivered as web applications using server-side or client-side processing (e.g., JavaScript) to provide an "application-like" experience within a Web browser. Application software developers also must consider a long array of screen sizes, hardware specifications, and configurations because of intense competition in mobile software and changes within each of the platforms. Mobile app development has been steadily growing, in revenues and jobs created. A 2013 analyst report estimates there are 529,000 direct *app economy* jobs within the EU than 28 members, 60 percent of which are mobile app developers.

As part of the development process, mobile user interface (UI) design is also essential in the creation of mobile apps. Mobile UI considers constraints, contexts, screen, input, and mobility as outlines for design. The user is often the focus of interaction with their device, and the interface entails components of both hardware and software. User input allows for the users to manipulate a system, and device's output allows the system to indicate the effects of the users' manipulation. Mobile UI design constraints include limited attention and form factors, such as a mobile device's screen size for a user's hand(s). Mobile UI contexts signal cues from user activity, such as location and scheduling that can be shown from user interactions within a mobile app. Overall, mobile UI design's goal is mainly for an understandable, user-friendly interface.

The UI of mobile apps should: consider users' limited attention, minimize keystrokes, and be task-oriented with a minimum set of functions. This functionality is supported by mobile enterprise application platforms or integrated development environments (IDEs).

Mobile UIs, or front-ends, rely on mobile back-ends to support access to enterprise systems. The mobile back-end facilitates data routing, security, authentication, authorization, working off-line, and service orchestration. This functionality is supported by a mix of middleware components including mobile app

server, mobile backend as a service, and service-oriented architecture (SOA) infrastructure.

1.2.1 PLATFORM COMPONENTS

The platform organizations needed to develop, deploy and manage mobile apps are made from many components and tools which allow a developer to write, test and deploy applications into the target platform environment.

1.2.2 FRONT-END DEVELOPMENT TOOLS

Front-end development tools are focused on the user interface and user experience (UI-UX) and provide the following abilities:

i. UI design tools

ii. SDKs to access device features

iii. Cross-platform accommodations/support

1.2.3 BACK-END SERVERS

Back-end tools pick up where the front-end tools leave off, and provide a set of reusable services that are centrally managed and controlled and provide the following abilities:

i. Integration with back-end systems

ii. User authentication-authorization

iii. Data services

iv. Reusable business logic

1.2.4 SECURITY ADD-ON LAYERS

With bring your own device (BYOD) becoming the norm within more enterprises, IT departments often need stop-gap, tactical solutions that layer atop existing apps, phones, and platform component. Features include

a) App wrapping for security

b) Data encryption

c) Client actions

d) Reporting and statistics

1.2.5 SYSTEM SOFTWARE

Many system-level components are needed to have a functioning platform for developing mobile apps.

1.2.6 MOBILE APP TESTING

Mobile applications are first tested within the development environment using emulators and later subjected to field testing. Emulators provide an inexpensive way to test applications on mobile phones to which developers may not have physical access. The following are examples of tools used for testing application across the most popular mobile operating systems.

- **Google Android Emulator** - an Android emulator that is patched to run on a Windows PC as a standalone app, without having to download and install the complete and complex Android SDK. It can be installed and Android compatible apps can be tested on it.
- **The official Android SDK Emulator** - a mobile device emulator which mimics all of the hardware and software features of a typical mobile device (without the calls).
- **TestiPhone** - a web browser-based simulator for quickly testing iPhone web applications. This tool has been tested and works using Internet Explorer 7, Firefox 2 and Safari 3.

2.0 PROJECT INSIGHTS

2.1.1 FRONT-END & BACK-END

Front End and Back End: Frontend and Backend are two most popular terms used in web development. These terms are very crucial for web development but are quite different from each other. Each side needs to communicate and operate effectively with the other as a single unit to improve the website's functionality.

2.1.2 FRONT-END LANGUAGES USED IN MY APP:

XML

Extensible Markup Language (XML) is a set of rules for encoding documents in machine-readable form. XML is a popular format for sharing data on the internet. Websites that frequently update their content, such as news sites or blogs, often provide an XML feed so that external programs can keep abreast of content changes. Uploading and parsing XML data is a common task for network-connected apps. This lesson explains how to parse XML documents and use their data.

2.1.3 BACK-END LANGUAGES USED IN MY APP:

PHP AND MYSQL:

This is very useful in case you have a webserver, and you want to access its data on your android application. MYSQL is used as a database at the webserver and PHP is used to fetch data from the database. Our application will communicate with the PHP page with necessary parameters and PHP will contact MYSQL database and will fetch the result and return the results to us.

JAVA

Java is the technology of choice for building applications using managed code that can execute on mobile devices. Android is an open source software platform and

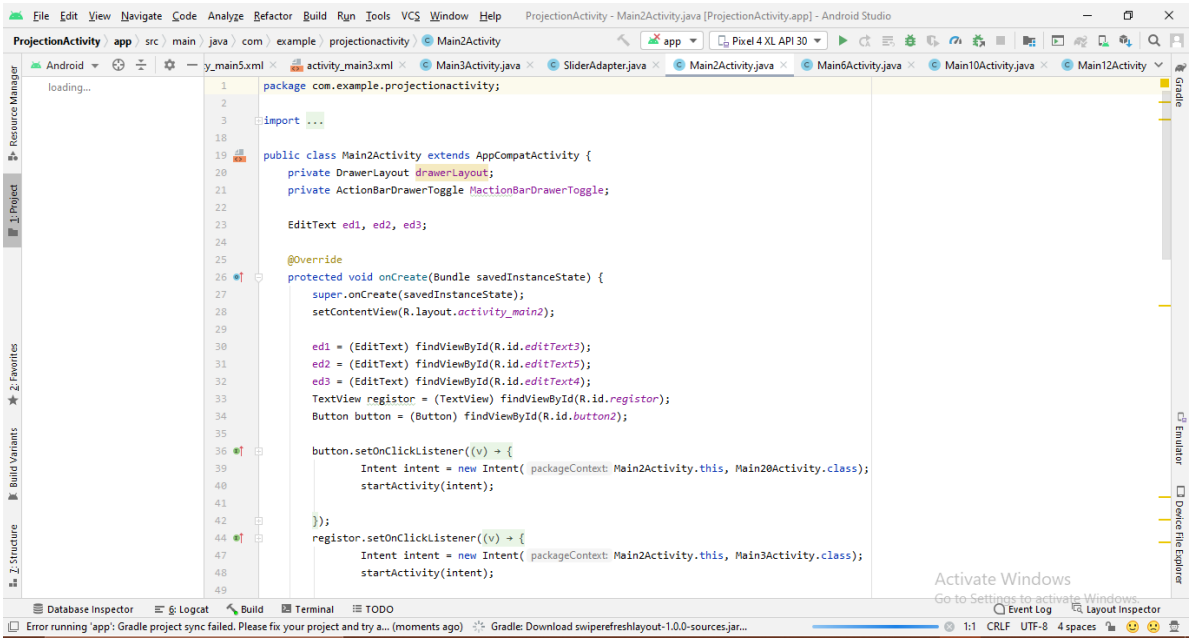
Linux-based operating system for mobile devices. The Android platform allows developers to write managed code using Java to manage and control the Android device. Android applications can be developed by using the Java programming language and the Android SDK. So, familiarity with the basics of the Java programming language is a prerequisite for programming on the Android platform. This article discusses where Java fits in mobile application development and how we can use Java and Android SDK to write applications that can work on Android devices.

1.2.4 SOFTWARES USED IN MAKING OF APP

ANDROID STUDIO

Android Studio is the official Integrated Development Environment (IDE) for android application development. Android Studio provides more features that enhance our productivity while building Android apps. It is the official development suite from Android, combining all elements of the app building process. With a code editor, virtual android emulator and code templates, this free development suite aims to provide a streamlined service for app creators.

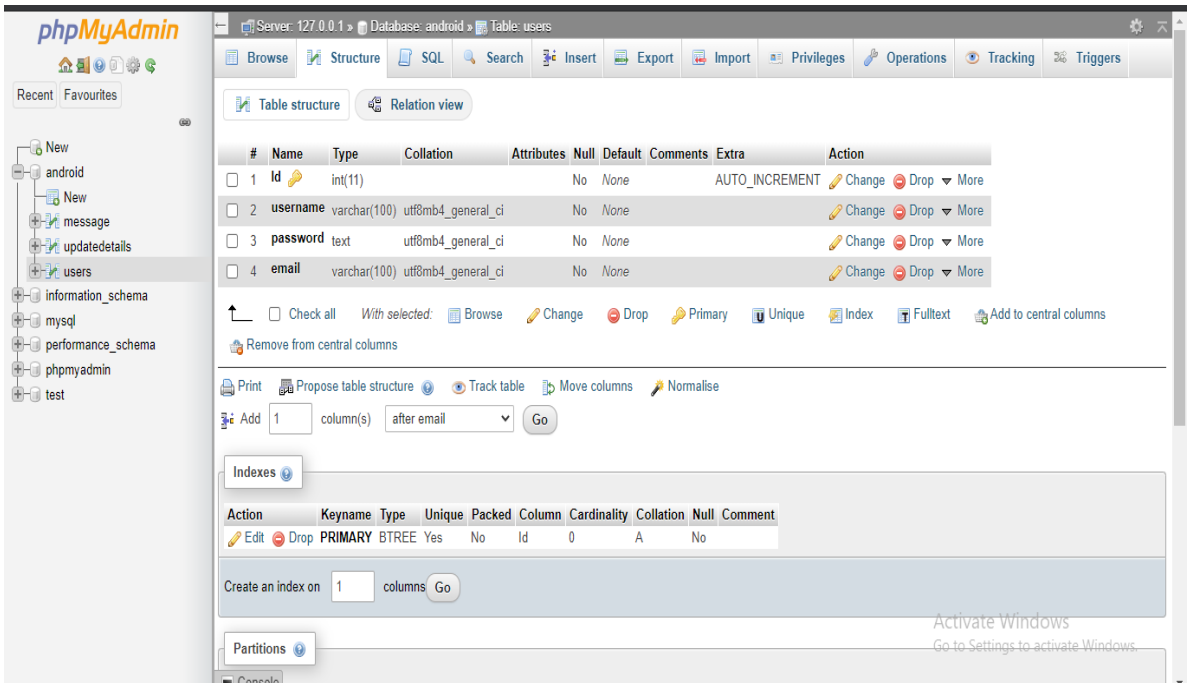
ANDROID STUDIO SNAPSHOT:



PhpMyAdmin

PhpMyAdmin is an open-source software tool introduced on **September 9**, **1998**, which is written in PHP. Basically, it is a third-party tool to manage the tables and data inside the database. PhpMyAdmin supports various types of operations on **Maria DB** and **MySQL**. The main purpose of phpMyAdmin is to handle the administration of MySQL over the web.

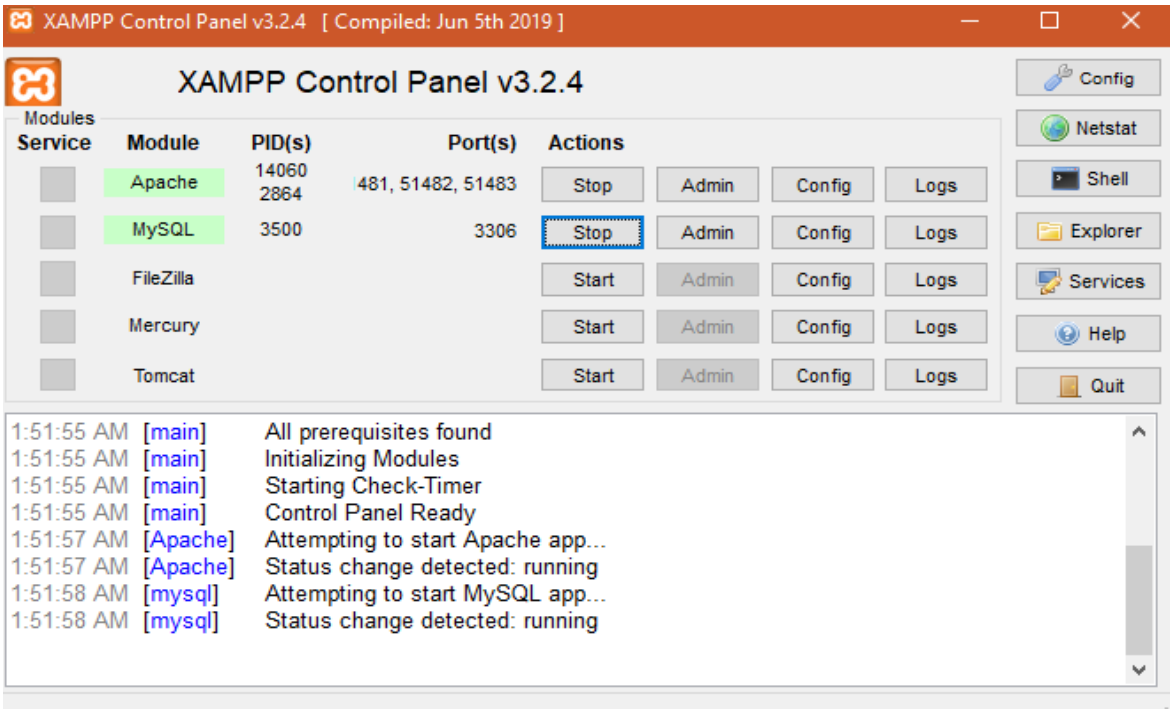
DATABASE SNAPSHOT:



XAMP SERVER

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible.

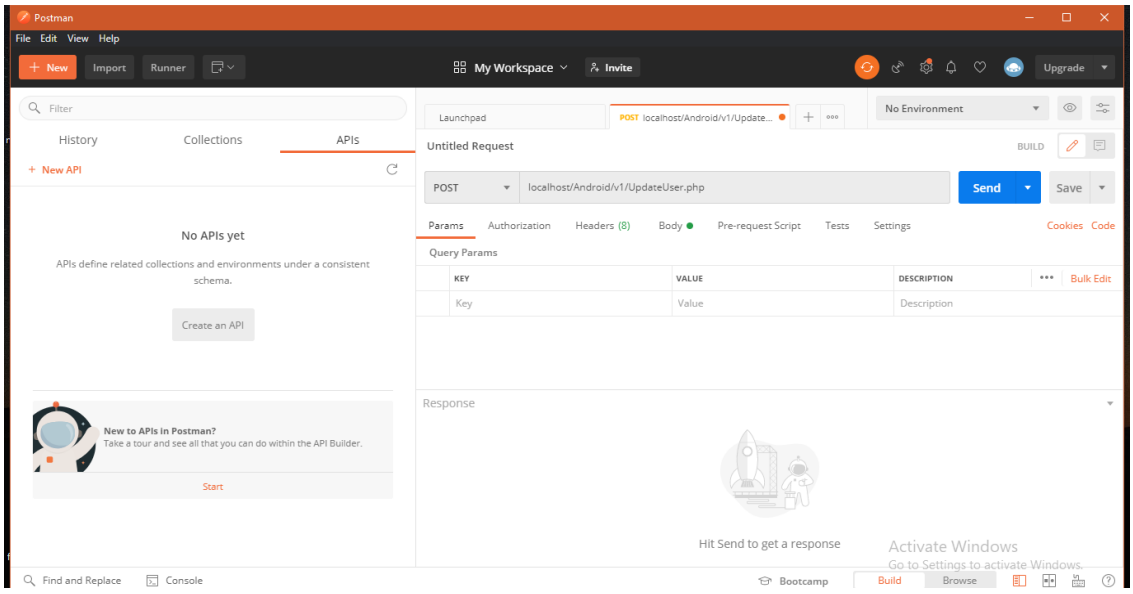
XAMP SNAPSHOT:



POSTMAN:

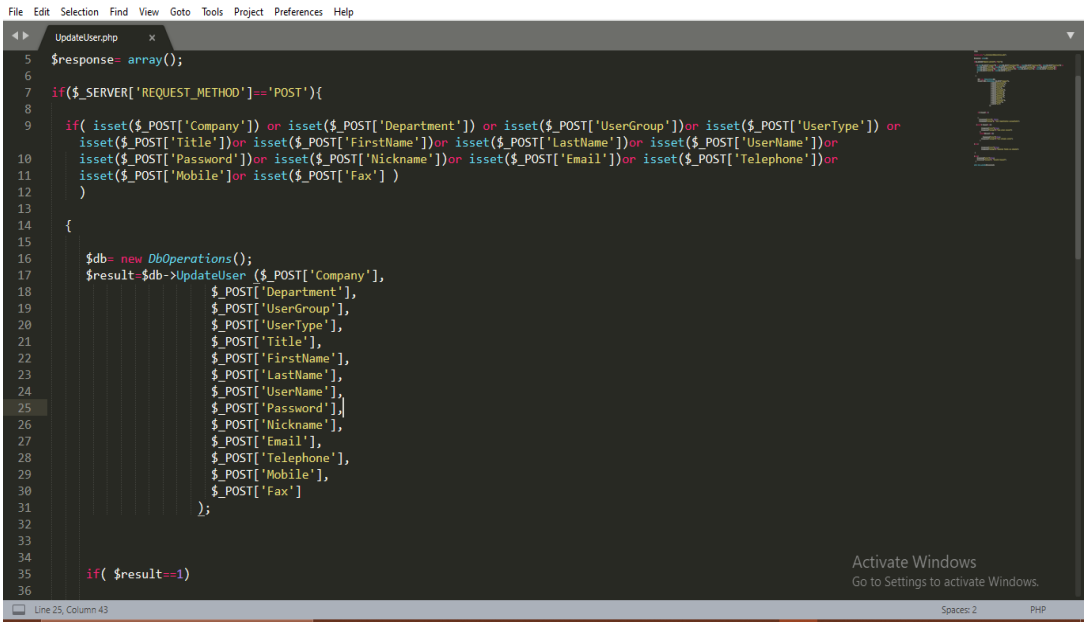
Postman is a collaboration platform for API development. Postman's features simplify each step of building an API and streamline collaboration so you can create better APIs—faster.

POSTMAN SNAPSHOT:



SUBLIME TEXT:

Sublime Text is a shareware cross-platform source code editor with a Python application programming interface. It natively supports many programming languages and markup languages, and functions can be added by users with plugins, typically community-built and maintained under free-software licenses.



3.0 METHODOLOGY ADOPTED

3.1 STRATEGY

The first phase of the mobile app development process is defining the strategy for evolving your idea into a successful app. I tried to include a more significant part of this in your overall enterprise mobility strategy. As one app's objectives may differ from another, there is still an app-specific impact to the mobility strategy to address during the development process.

In this phase, I tried to:

- Identify the app users
- Research the competition
- Establish the app's goals and objectives
- Select a mobile platform for your app

3.2 ANALYSIS AND PLANNING

At this stage, I tried to give my app idea a shape and turns into an actual project. Analysis and planning begin with defining use cases and capturing detailed functional requirements.

After I tried to identify the requirements for my app, prepare a product roadmap. This included prioritizing the mobile app requirements and grouping them into delivery milestones. If time, resources or costs are a concern, then define your minimum-viable-product (MVP) and prioritize this for the initial launch.

Part of the planning phase includes identifying the skills needed for your app development initiative. For example, iOS and Android mobile platforms use different development technology stacks. If your goals are to build a mobile app for both iOS and Android mobile platforms then, your mobile development team should include iOS developers and Android developers.

3.3 UI / UX DESIGN

The purpose of an app's design is to deliver seamless and effortless user experiences with a polished look.

The success of a mobile app is determined based on how well users are adopting and benefiting from all its features. The goal for mobile app UI / UX design is creating excellent user experiences making your app interactive, intuitive, and user-friendly. While polished UI designs will help with early adoption, your app must have intuitive user experiences to keep App users' engaged. I tried to make an interactive UI/UX

- **Information Architecture & Workflows**

  The first step of my mobile app design process was to determine the data your mobile app will display to the users, the data it will collect, user interactions with the finished product, and the user journeys within the app.

- **Wireframes**

  Mobile app designers often start app design with sketches on paper. Wireframes are the digital form of sketches. Wireframes are conceptual layouts, also referred to as low-fidelity mockups—they give visual structure to your app's functional requirements.

- **Style Guide**

  Style guides are "living documents" where an app's design standards from your company's branding rules down to the navigation icons, are documented.

In Style guides I tried to include:

- What font family will your app's text use?
- What will the colour scheme be?
- How will your company brand be reflected in the app design?

Style guides contribute to an app's design strategy. Establishing a style guide early on as part of my mobile app development process I tried to improve the productivity of my mobile app developers. At the same time, following a style guide will helped keep my app's look and feel consistent.

- **Mock-ups**

  Mockups, or high-fidelity designs, are the final renderings of your app's visual design. Mockups are created by applying your style guide on to the app wireframes. As your app's design begins to finalize, expect further modifications to its information architecture, workflow, and aesthetics. Adobe Photoshop is the most popular tool for creating high-fidelity mockups.

- **Prototype**

  While mockups display your mobile app's functionality using static designs, these can turn into click-thru prototypes with tools like Invision and Figma. Prototypes are highly useful for simulating the user experience and the app's workflows expected from the finished product. While prototype development can be time-consuming, the efforts are well worth it, as they offer early-stage testing of your app's design and functionality. Often, prototypes help identify modifications to the app's proposed functionality.

3.4 APP DEVELOPMENT

Planning remains an integral part of this phase in the mobile app development process. Before actual development/programming efforts start, I tried to:

- define the technical architecture,
- pick a technology stack, and
- Define the development milestones.

a) Back-End/Server Technology

This part includes database and server-side objects necessary for supporting functions of your mobile app. If you are using an existing back-end platform, then modifications may be needed for supporting the desired mobile functionality.

b) API

An Application Programming Interface (API) is a method of communication between the app and a back-end server/database.

c) Mobile App Front-End

The front-end is the native mobile app an end-user will use. In most cases, mobile apps consist of interactive user experiences that use an API and a back-end for managing data. In some cases, when an app needs to allow users to work without internet access, the app may utilize local data storage.

3.5 TESTING

Performing thorough quality assurance (QA) testing during the mobile app development process makes applications stable, usable, and secure. To ensure comprehensive QA testing of your app, you first need to prepare test cases that address all aspects of app testing.

3.6 DEPLOYMENT & SUPPORT

Releasing a native mobile app requires submitting your app to the app stores, Apple App Store for iOS apps and Google Play for Android apps. However, you will need a developer account with Apple App Store and Google Play Store before launching your mobile app.

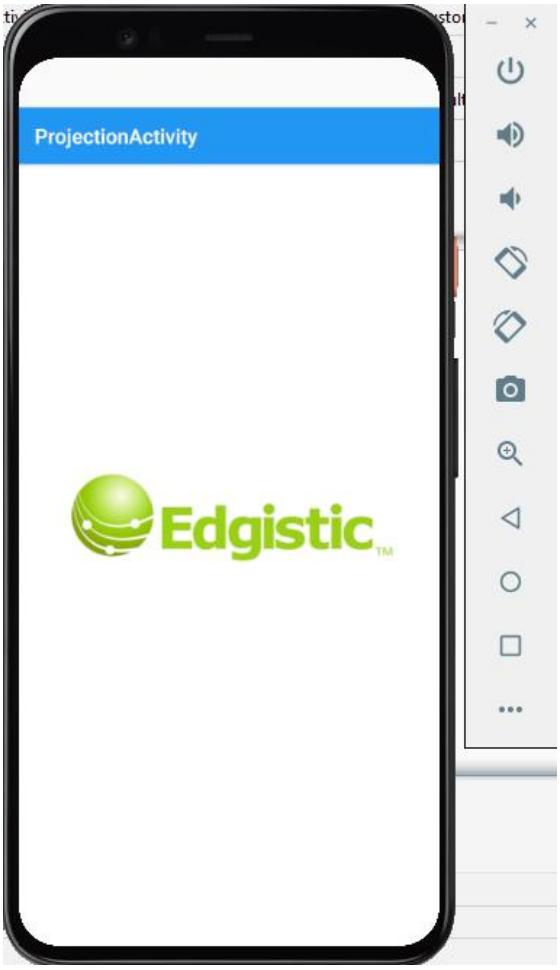
An app’s release in the app store requires preparing metadata including:

- Your app’s title
- Description
- Category
- Keywords
- Launch icon
- App store screenshots

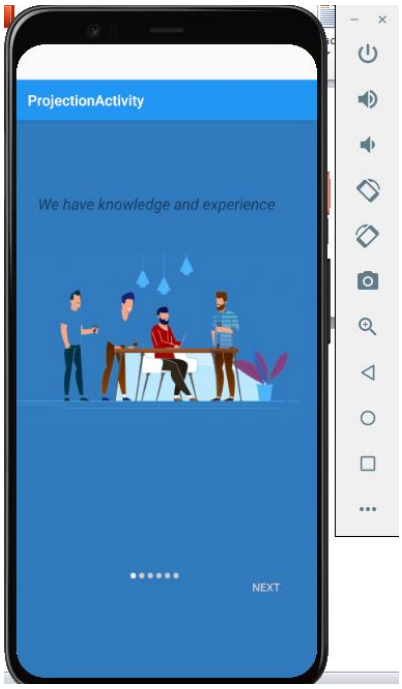
Once submitted in the Apple App Store, iOS apps go through a review process which may take from a few days to several weeks depending on the quality of your app and how closely it follows Apple’s iOS development guidelines. If your app requires users to log in, then you will need to provide Apple with a test user account as part of the release process.

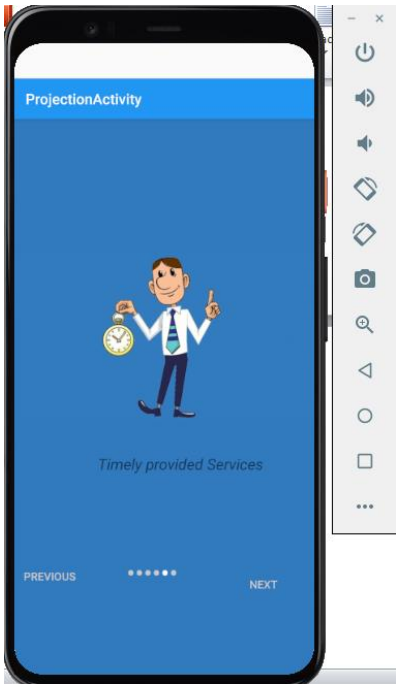
4.0 RESULT ANALYSIS

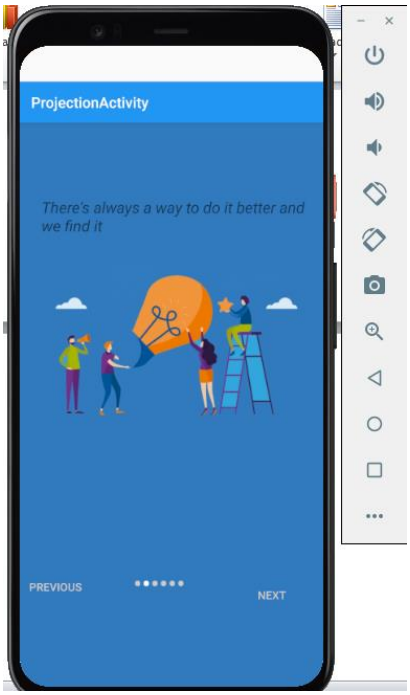
SNAP SHOTS OF MY PROJECT:

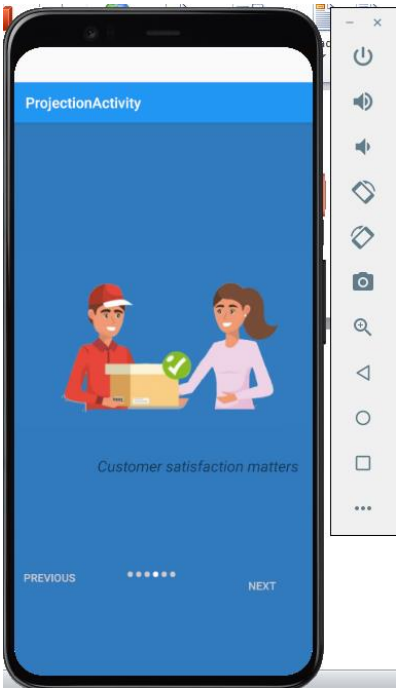


Splash Screen

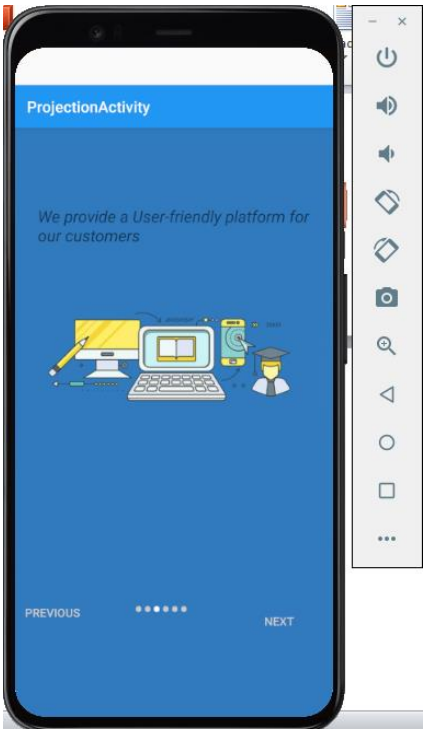

ProjectionActivity
We have knowledge and experience
NEXT


ProjectionActivity
Timely provided Services
PREVIOUS
NEXT

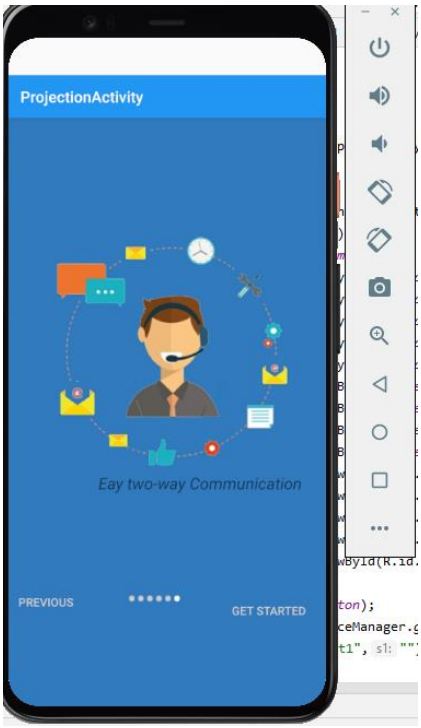

ProjectionActivity
There's always a way to do it better and we find it
PREVIOUS
NEXT


ProjectionActivity
Customer satisfaction matters
PREVIOUS
NEXT

Walkovers


ProjectionActivity
We provide a User-friendly platform for our customers
PREVIOUS
NEXT

Walkovers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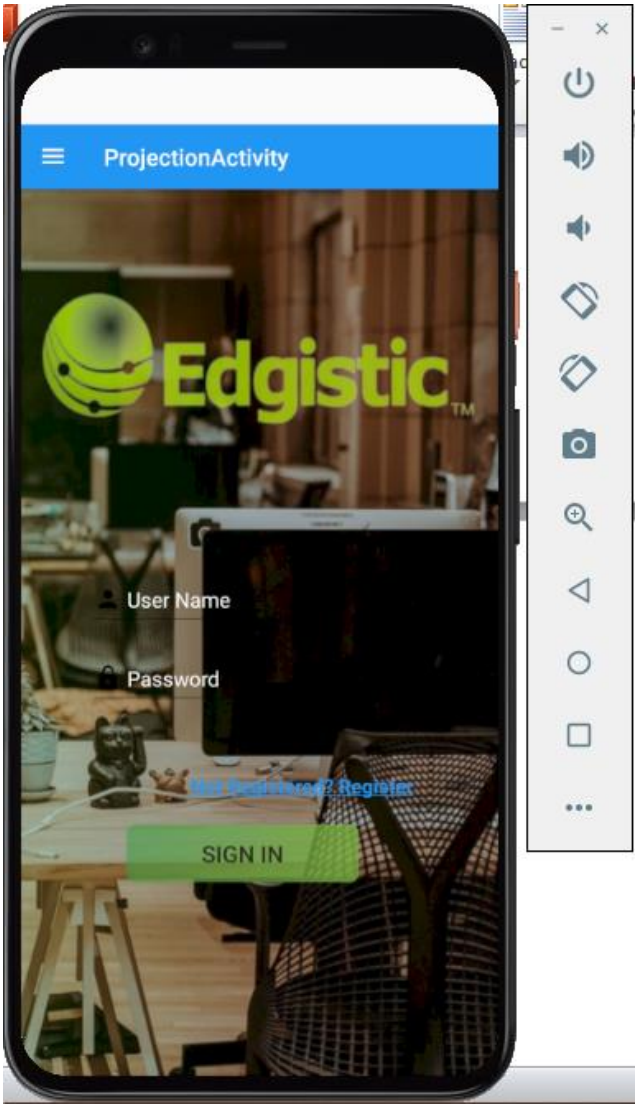
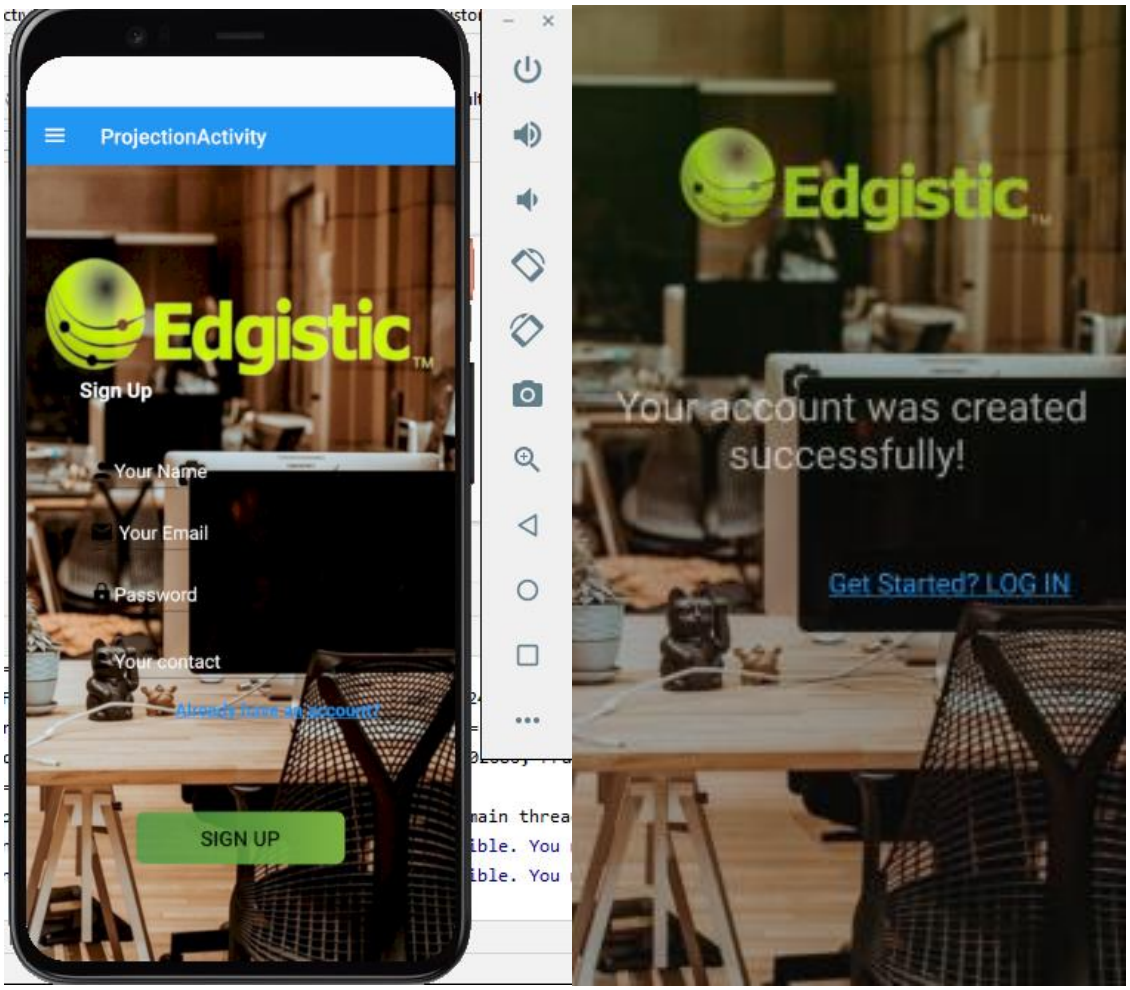
Eay two-way Communication
PREVIOUS
GET STARTED

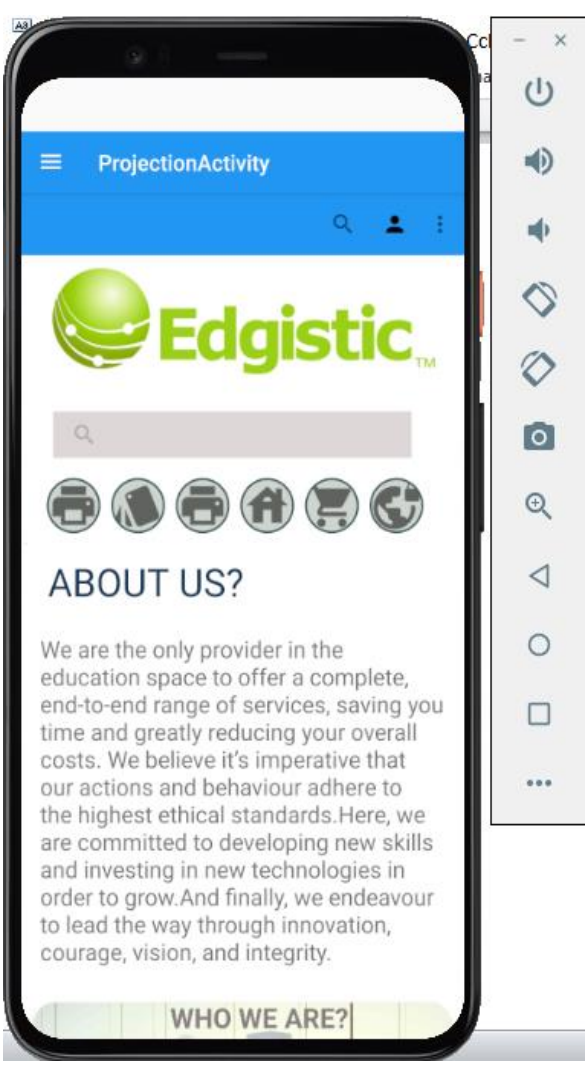
Mobile Launch Screen



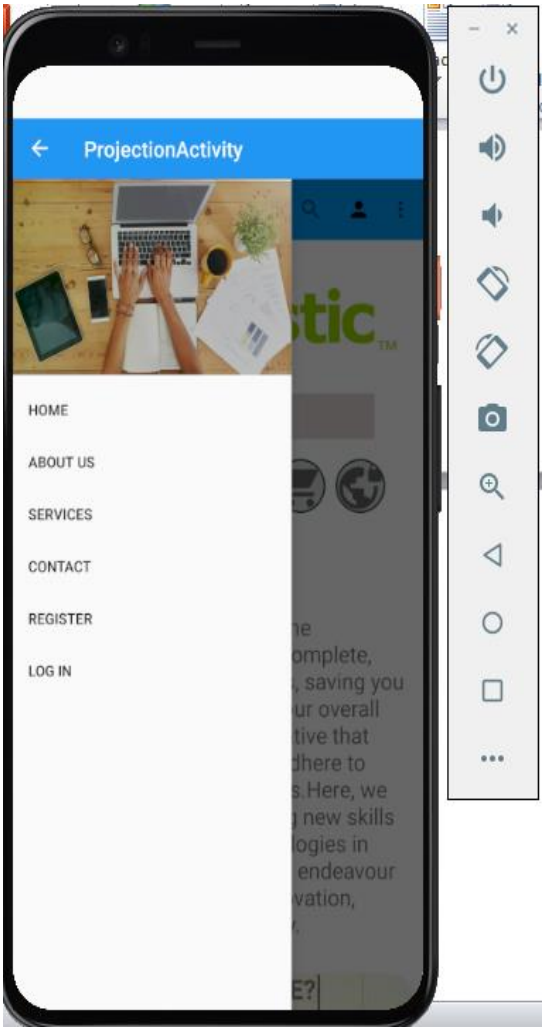
Login


ProjectionActivity
Edgistic
Sign Up
Your Name
Your Email
Password
Your contact
Already have an account?
SIGN UP
Edgistic
Your account was created successfully!
Get Started? LOG IN

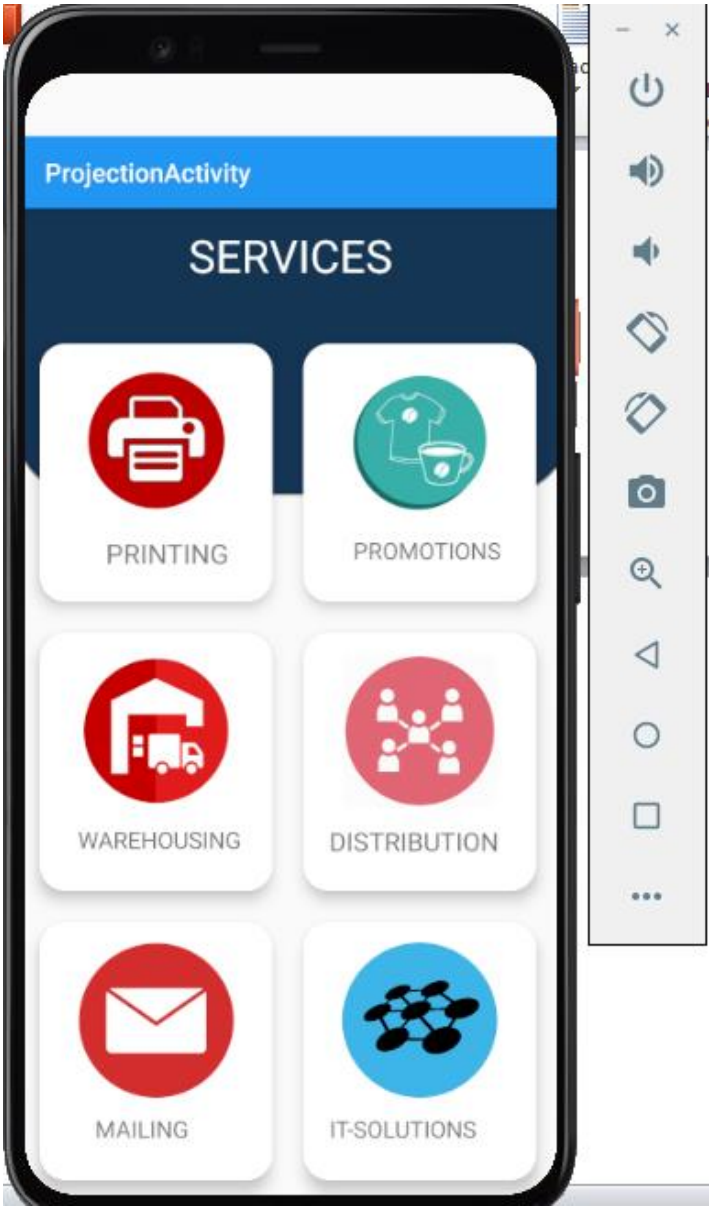
Register



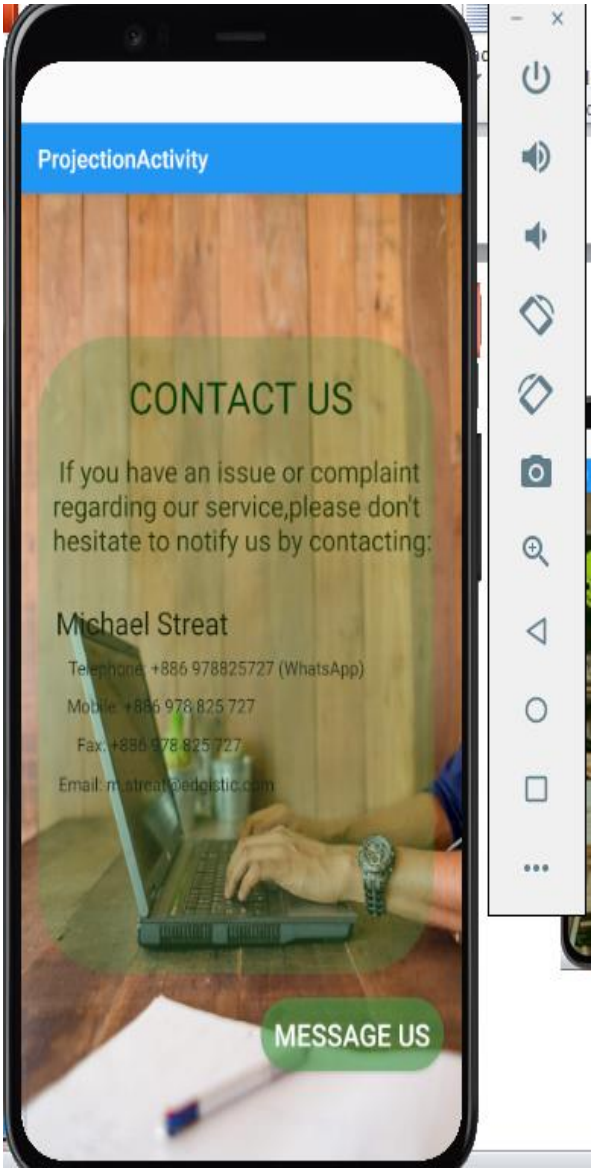
Explore Page

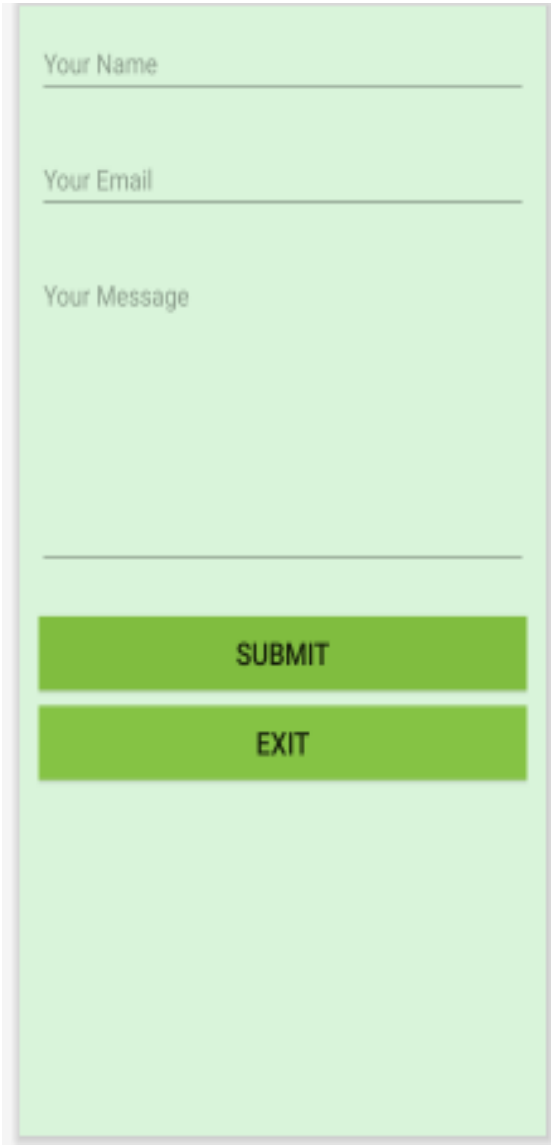


Navigation Bar

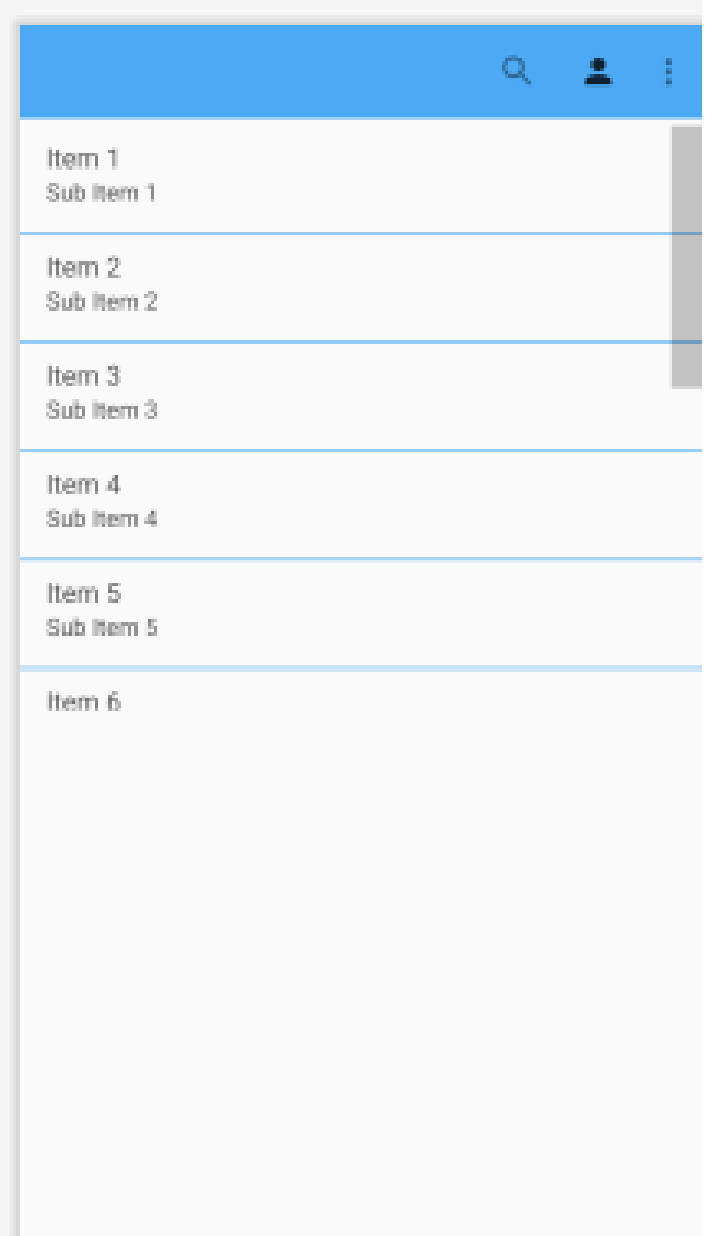

ProjectionActivity
SERVICES
PRINTING
PROMOTIONS
WAREHOUSING
DISTRIBUTION
MAILING
IT-SOLUTIONS

Services

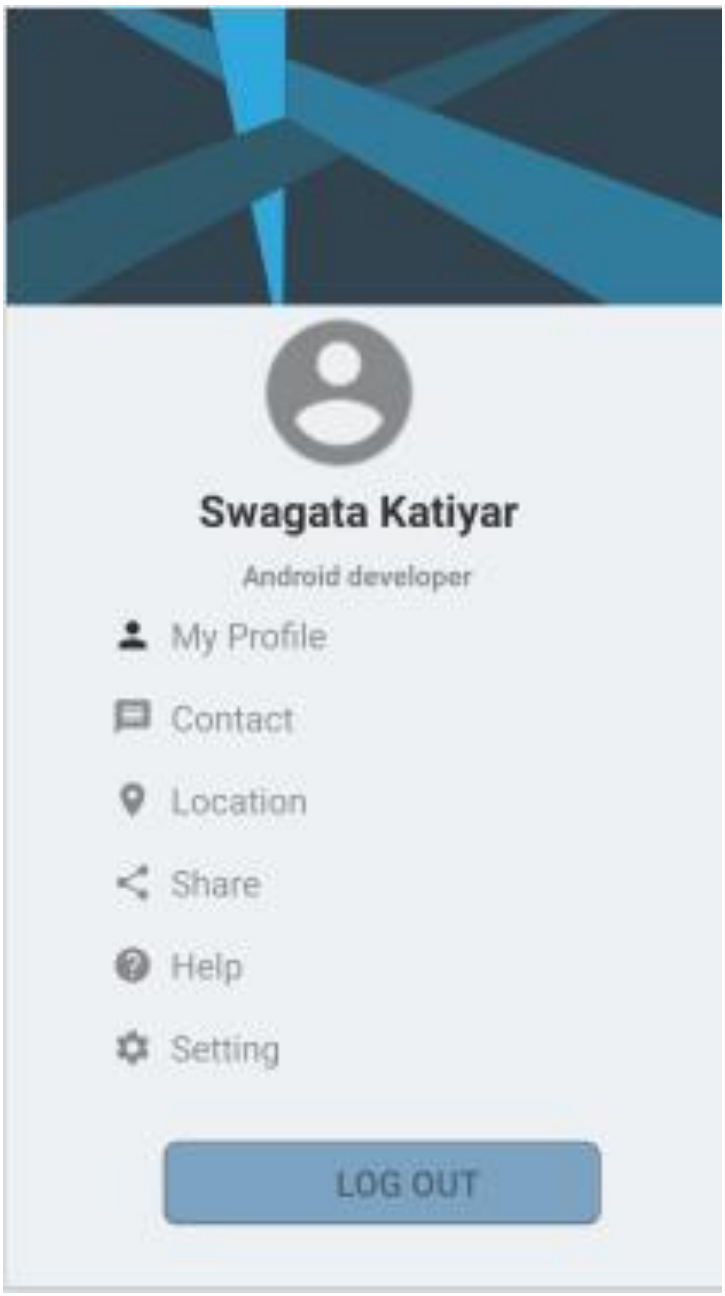




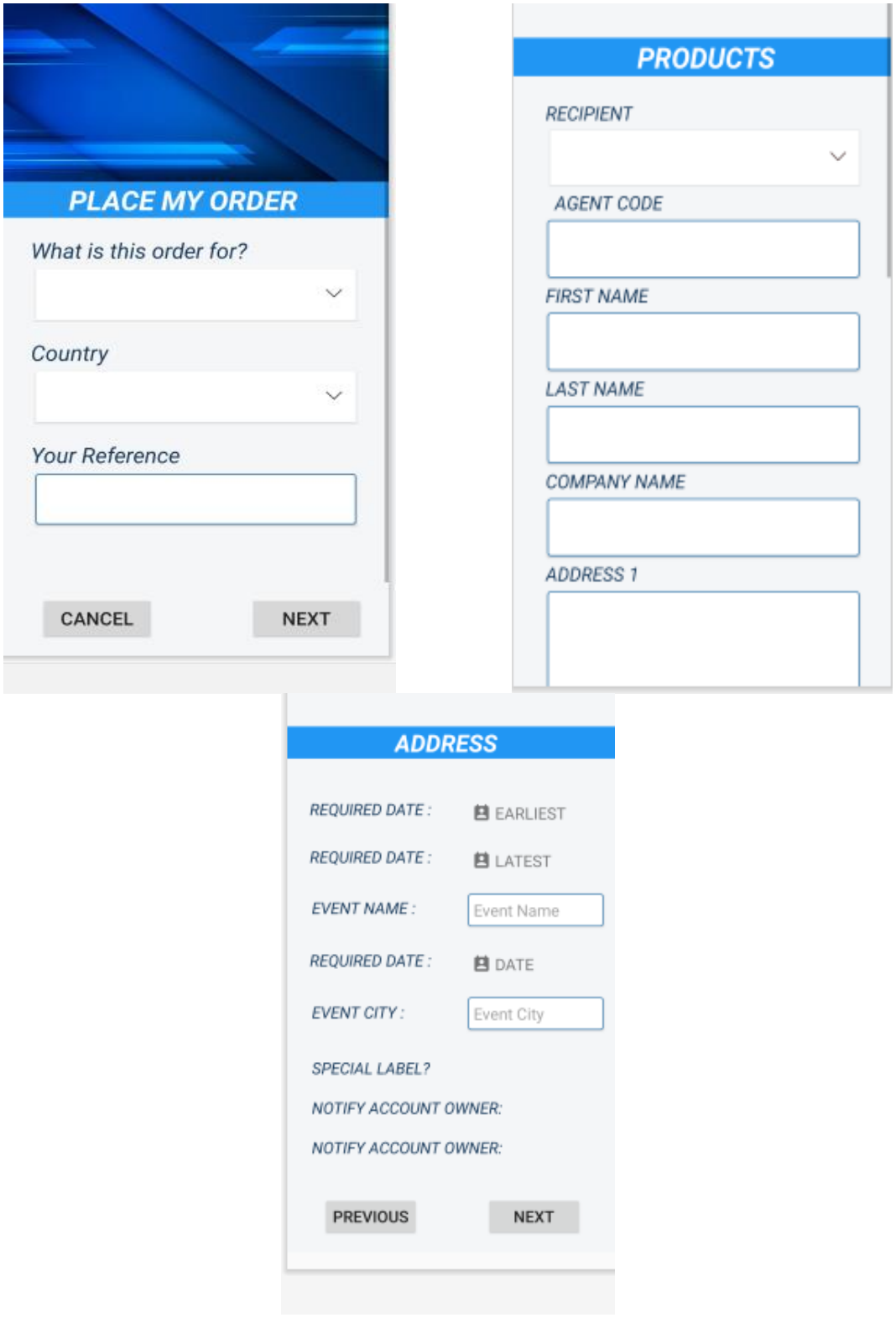
Contact Messages


Item 1
Sub Item 1
Item 2
Sub Item 2
Item 3
Sub Item 3
Item 4
Sub Item 4
Item 5
Sub Item 5
Item 6

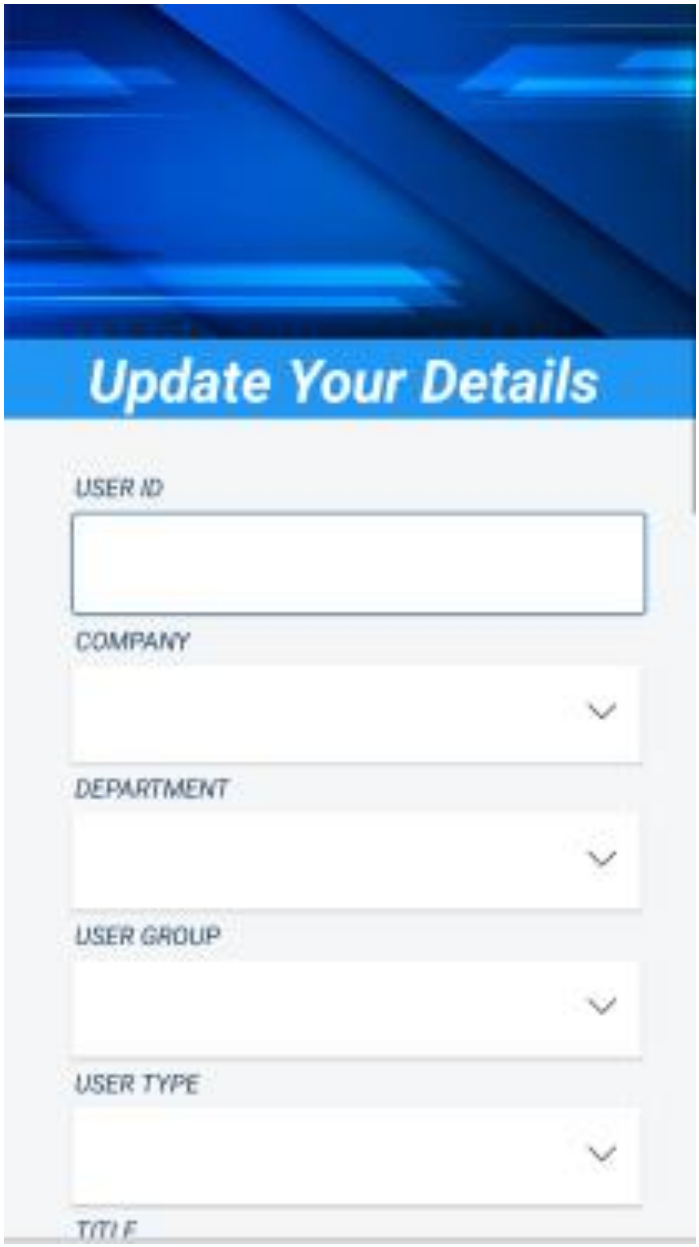
After Login


Swagata Katiyar
Android developer
My Profile
Contact
Location
Share
Help
Setting
LOG OUT

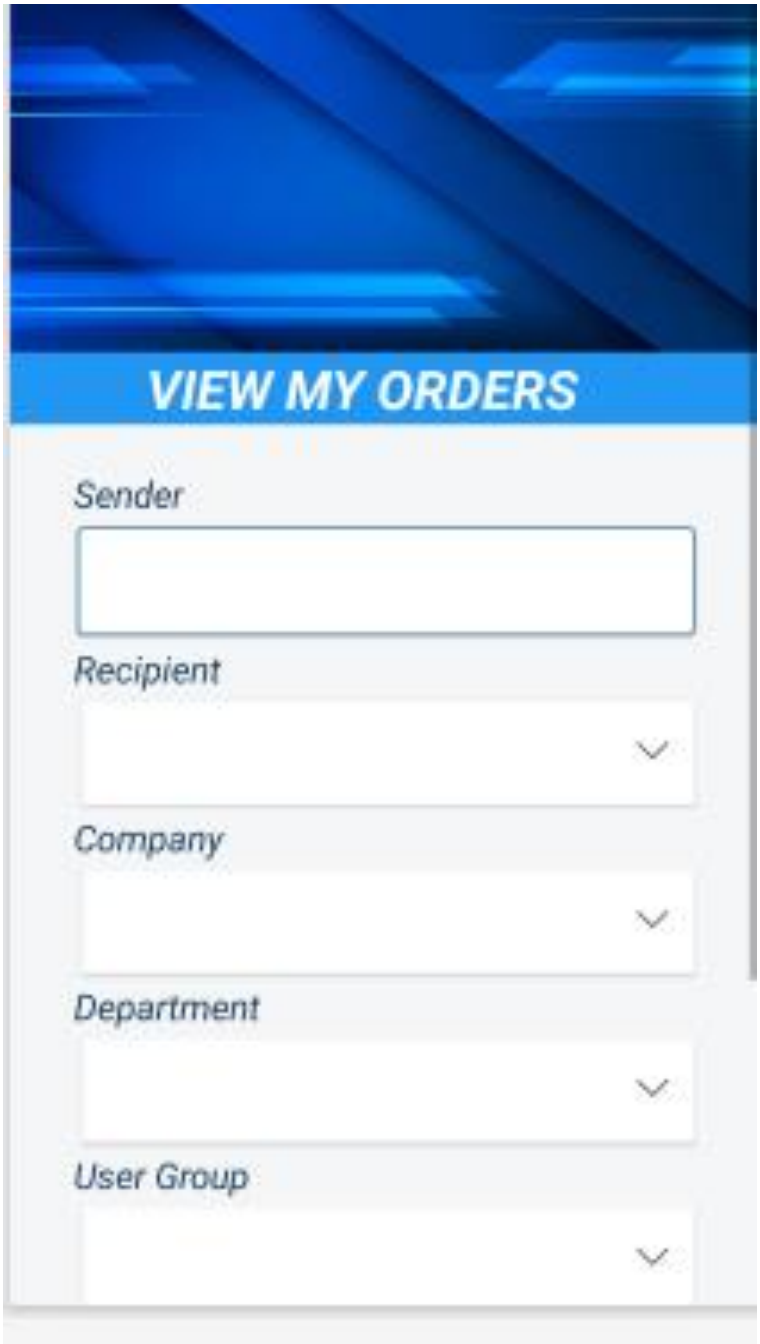
My Profile



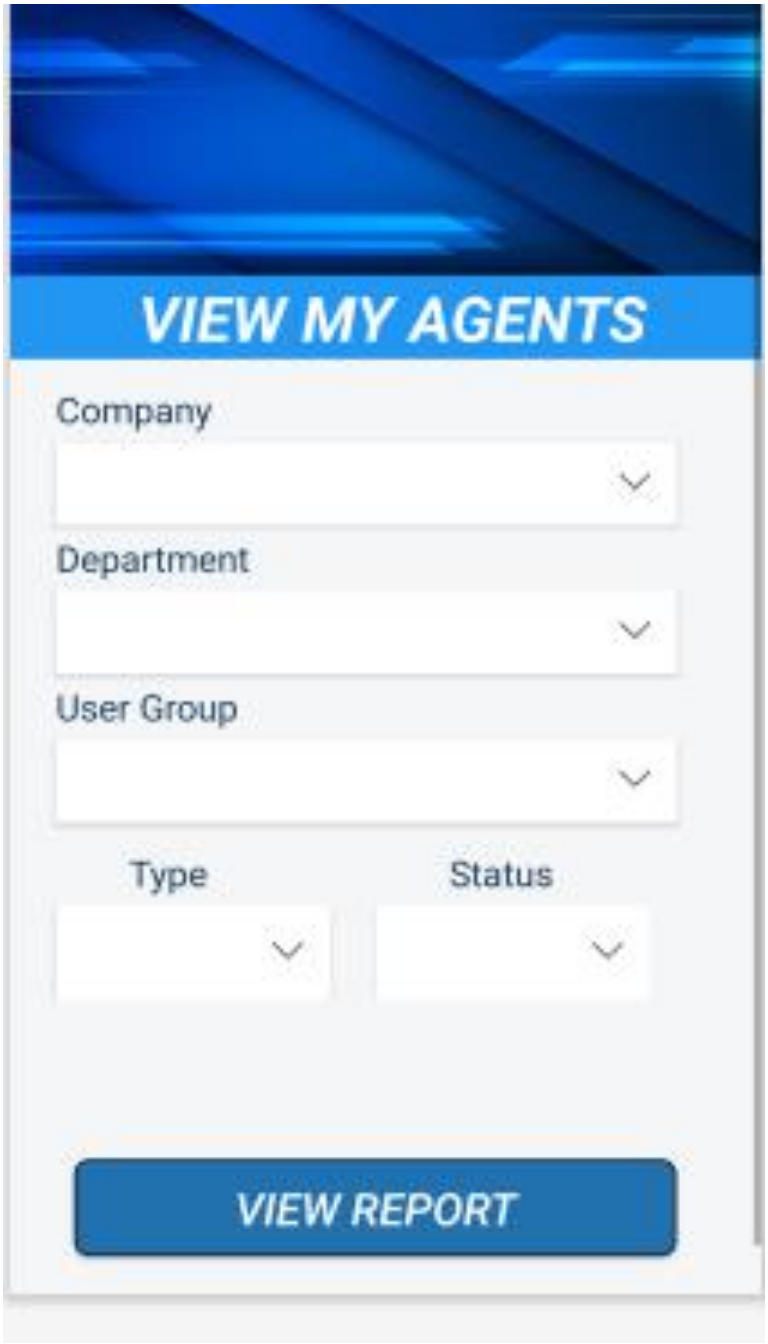
Place My Order



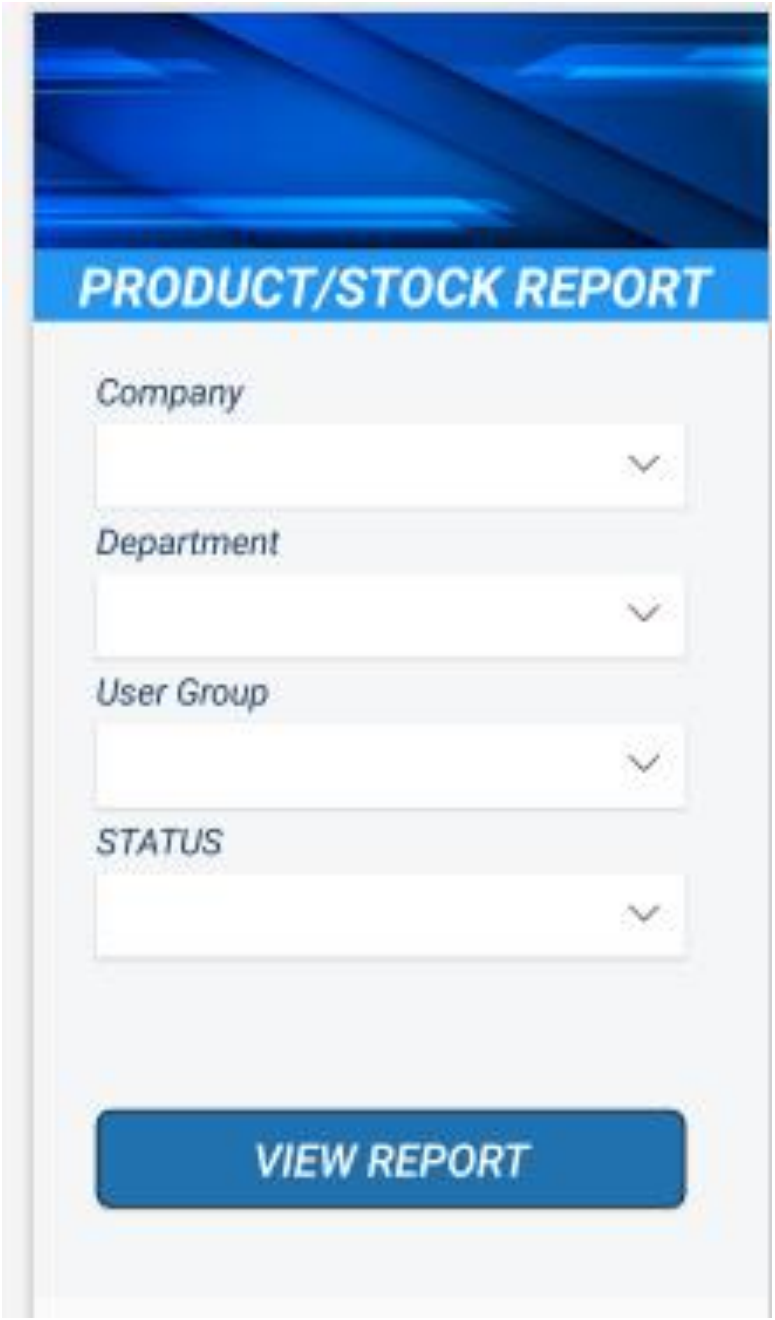
Update Your Details



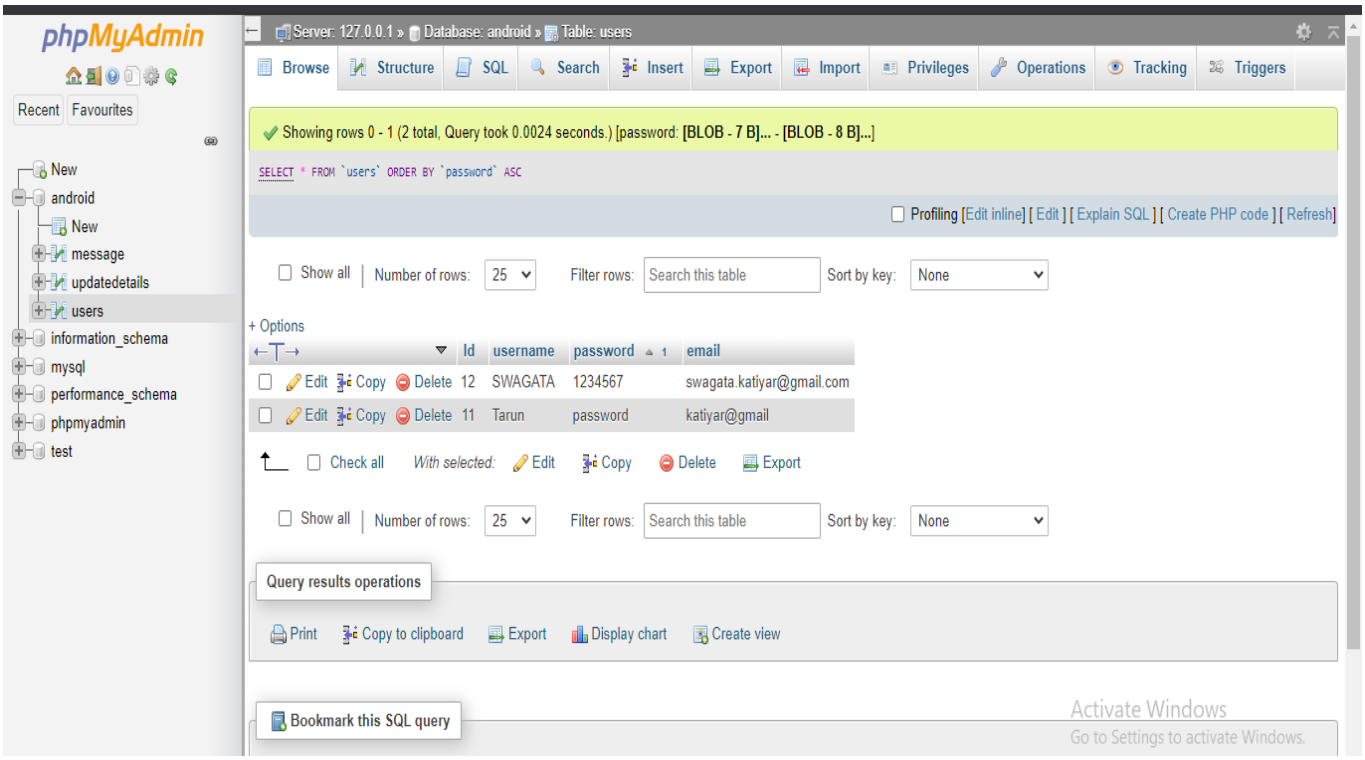
View My Orders



View My Agents



Product / Stock Report



Centralized Database after storing

5.0 FUTURE SCOPE OF ANDROID APP DEVELOPMENT

The android app development industry is aware of Virtual Reality (VR) and Augmented Reality (AR). These technologies will become very advanced and will be part of the great revolution in developing gaming and entertainment mobile apps in the coming future.

1. There's a drastic rise in the number of Android Applications today. In fact, real-time applications are more in trend that helps in making payment, or shopping online.

2. Google itself is focusing on smarter and smarter phones and automated things using Artificial intelligence.

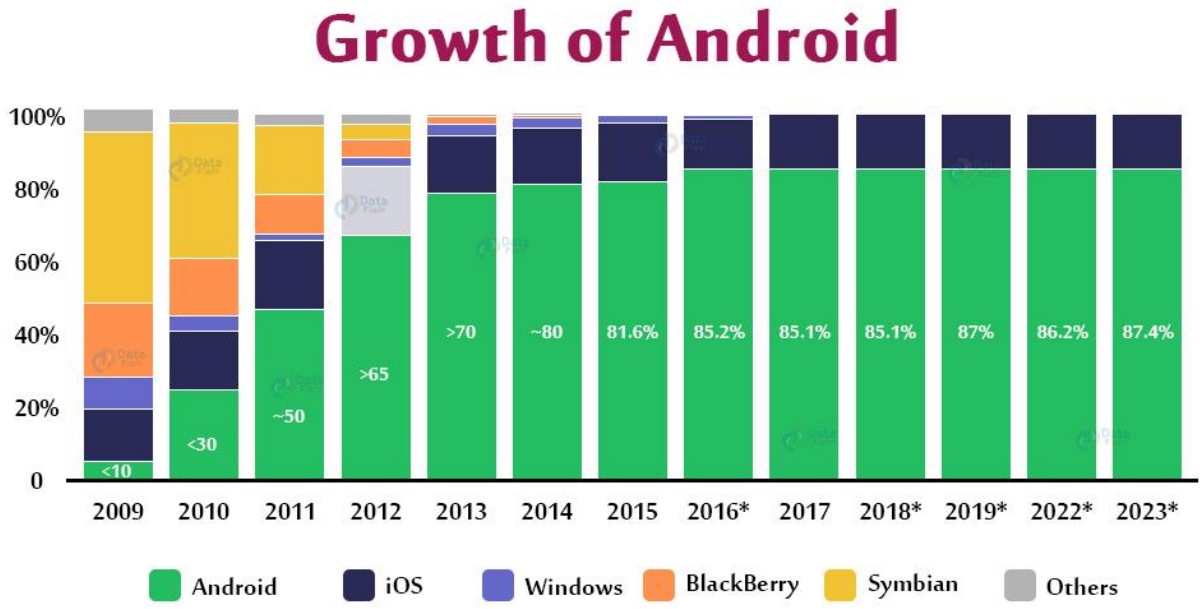
3. In fact, the Android Architecture by Google is a lot helpful in defining the best practices. It makes Android App development much easier and understandable to handle.

4. There're many new things to come that are based on Android itself, such as-

    - Android for automated cars
    - Android Biometrix prompt
    - Improved security through Android
    - Android CameraX

5. Highly enhanced Security for Android applications Users cannot go unnoticed.

Consider the following graph to see which suggests sand compare the growth and increase of Android users and users of any other operating system in last few years.



It is clear from above graph that Android is going to have a lot of demands in the years to come. You can see the drastic changes in the market share of Android in the world. Well, this also makes one more thing pretty clear. In the coming time, there's going to be no loss but only lots and lots of opportunities for the Android Developers as the people are changing according to their needs and technology.

5.2 PROBLEM IN CURRENT BROCHURE ORDER SYSTEM

Ordering Brochures Offline Has Many Disadvantages:

- It can be time consuming process
- Office employees might have to reschedule their busy routine to go

- Transportation expenses are costly
- You couldn’t visualize the brochure design effectively
- **You couldn’t shop at any time you want**
- Products can costlier
- Waste of energy and efforts
- People cannot compare products of different companies before buying
- Standing in queues
- Facing crowded places can be exhausting
- Desired products can be difficult to find at times
- No doorstep deliveries

5.3 RECOMMENDATIONS FOR NEW ONLINE BROCHURE ORDER SYSTEM

People in today’s world are used to go online in order to shop for the products that they need. They don’t need to go through a lot of frustration in order to shop online. They can easily access online stores through their personal computers or mobile devise and order what they want. The ordered products would be delivered to the doorstep as well. This online brochure management system helps you overcome all the problems mentioned above.

This software collects details from customers, stores it in an online database and updates the customer about their delivery. The goal of the project is to explore how to realize a brochure delivery website using the android platform. Moreover, the project scrutinizes how to integrate current technologies like Google Calendar, Google Map, Browser, Contact application and Phone application into the prototype. Objective is to provide a user friendly interface which will link the user

with their brochure development company and provide the customers with the easy and efficient way of ordering and saving their time and efforts to stand in a queue. Furthermore, the project has investigated non-functional aspects including extendibility, future scope, and usability. Overall, the project presents a comprehensive brochure management in the new developing mobile platform.