CHAPTER-1

INTRODUCTION

We all know that in the digital world, through the Apps and Websites we are getting lots of solutions in very less time, In the case of vehicles if the vehicle will brock down at any place where they are not able to find a repair service center, in that case, we are providing mechanic service of their vehicle in very less time at customer current location.

If Customers will visit my App / Website they will register and log in and provide their vehicle information so that mechanic can know their vehicle problem and reach their current location with repairing service.

For repairing vehicles, we have lots of mechanics registered on this App / Website, if any mechanic wants to join us for giving the service, firstly mechanics register on my app so that I can collect their data to make their profile and after that, they can login and they can check and update his profile and work with us.

Regular servicing is very important for keeping your vehicle in good driving condition. It is recommended to regularly visit a vehicle service centre for detailed car inspections. Servicing your vehicle is very important, especially if you use your vehicle extensively. Yes, by servicing your vehicle on a regular basis, you will avoid costly repairs and will save lot of money. Here's what you need to pay attention to.

Motor vehicle can mean anything from a normal car, a motorcycle, bus, coach, light goods van, commercial vehicles (eg HGV's) through to construction and quarry vehicles. MVR type activities do not only occur in what we commonly understand as a 'garage' and can be found in virtually any industry that operates any transport as part of its activities. The principles of the advice in this MVR site apply across all industries regardless of what the main activity may be (eg. a farmer changing a tyre/wheel on a tractor on a farm should still follow the advice).

Enforcement of health and safety law in MVR is split between HSE and Local Authorities (LA's). In general terms, HSE enforce at body shops and mechanical repair/servicing premises, during vehicle recovery activities, and during any mobile MVR work eg at domestic premises or at the roadside. LA's enforce at fast fit centres (tyre and exhaust centres), valeting premises and where MVR is part of the sale of motor vehicles and parts. However, the boundaries between the different types of the outlet has become blurred as enterprises take on a wider range of activities in an increasingly competitive market.

REGULAR SERVICING ENSURES SAFETY

Regular car service is vital to your safety, only because it can nip any potential car issues in the bud before they become sure-fire problems. This ensures that your car will not let you down when you need it the most. You don't want your car to break-down on you in the middle of nowhere, do you? Regular servicing and maintenance reassure you that your car is in optimum road-worthy condition, thus lending you peace of mind regarding safety.

REGULAR CAR SERVICE ENSURES AN IMPROVED LIFE SPAN OF YOUR VEHICLE.

A well-maintained car improves life span, thus ensuring that your car will be your loyal partner for many years to come. Similarly, a fine-tuned, serviced engine greatly improves the performance of your car, keeping it in road-worthy, mint condition for a much longer time.

REGULAR CAR SERVICE IMPROVES THE PERFORMANCE OF YOUR CAR

The car is made up of a number of different parts. If one part starts to fail, it could affect how the whole car runs. Every part needs to be in tip-top shape to run smoothly like any well-oiled machine. Servicing your car at regular intervals ensures that every part of the car works smoothly, improving the overall performance of the car.

REGULAR CAR SERVICE KEEPS THE CAR COMPONENTS SAFE

Regular car service ensures that the most crucial components of your car- its cooling system, brakes, tyres, suspension, etc. are working with clockwork smoothness. This keeps them in top working condition for years to come.

REGULAR SERVICING SAVES YOU MONEY IN THE LONG RUN

Regular car service ensures that any potential issues in the technical aspects of the car are dealt with speedily and on time before they become full-blown concerns, which may cost a bomb to repair. As they say, a stitch in time saves nine.

REGULAR CAR SERVICE ENSURES FUEL EFFICIENCY

A car that goes for regular car service and car maintenance gives huge dividends in fuel efficiency too. Regular changing of oil, coolants, radiator fluid, and other vital fluids vastly improve fuel efficiency, thus giving you better mileage and more bang for your fuel buck!

REGULAR SERVICING INCREASES THE WORTH OF YOUR CAR

If you plan to sell your car at a later date or go in for an upgrade, then a car that has undergone regular car service and car maintenance will definitely attract more prospective buyers. This will get you a better selling price, than a car that has rarely been serviced and shows signs of poor maintenance.

REGULAR CAR SERVICE IS GOOD FOR THE ENVIRONMENT

A poorly maintained car spews more environment-damaging fumes and emissions into the air because of clogged exhausts and unchanged oil and other fluids, as compared to a car that undergoes regular servicing and maintenance. By giving your car regular car service, you thus reduce your carbon footprint and do your bit for the environment.

For e.g.: Maruti has Prescribed Maintenance Schedule for all its cars that’s the reason why we recommend servicing your car on a regular basis to keep it healthy by servicing it on regular prescribed interval schedules.

REGULAR SERVICING EXTENDS ENGINE LIFE

Engine oil loses its effectiveness over time. It needs to be replaced regularly to avoid the building up of sludge. Regular car service ensures that oil is changed at regular intervals. This in turn extends engine life.

To know the importance of oil change, Click below:

REGULAR SERVICING ENSURES REDUCED WEAR AND TEAR

Maruti Suzuki's service network is widespread across the country. There are about **2050** Maruti Suzuki service dealers spread across **35** states and Union Territories in India. In a regular car service, its oil, coolants, fluids, etc are checked. They are changed if required. Well-oiled car components undergo less friction while running, thus leading to vastly reduced wear and tear.

1.1 Motivation: -

We are learning things from already innovated technology to take idea and we try that concept. This project as It is. We have inspired from Go Mechanic which is providing mechanic service. Go mechanic provide mechanic service at their own service center. So, customer has to wait a lot and it takes too much time to repair. as we are living in digital era, so time is valuable things. Customer don't want to wait and they want service in very minimum time. So, there is our project that is MechWorld will work properly. MechWorld works on real-time location and it provides mechanics at their current location at very minimum time. If customers use MechWorld, they don't have to wait for mechanic and service will be done in front of the customer.

Realtime Locate Customer concept

Uber and Ola are the two bonafide veterans in India's ride-sharing space, with the two companies operating in India for the best part of the last decade. The two companies, via their apps, offer ride-sharing services via two-wheelers and four-wheelers, ranging from economy to luxury rides. for this work they have best tracing algorithm to track the current location of customer as well as drivers. We have taken this concept from this two giant company Uber and Ola.

1.2 Aim of the Project: -

- Providing mechanic services anywhere in real-time location, so that customer can save time and do his further work on time.
- Providing employability to Mechanics all over the India, any Mechanic can easily connect and work with us.
- Services at the door step .
- Set up a network of Technicians through out of country .

CHAPTER-2

SIGN UP

Firstly, Users as well as Mechanics need to be registered in an App. A separated windows will open based on the category. All relevant fields must be put on registration page. A detailed flow diagram was depicted under section-2.3.

2.1 User Registration Page

This is our User Registration page where User can go through this page and register themselves for getting our service.
In the Name field put your Name, and in email, field put your valid email otherwise It will give an error, in the phone number field put your valid Indian phone number and, in the password, field put your own created password that should be at least 6 characters after that user click on create Account then after he have register himself.

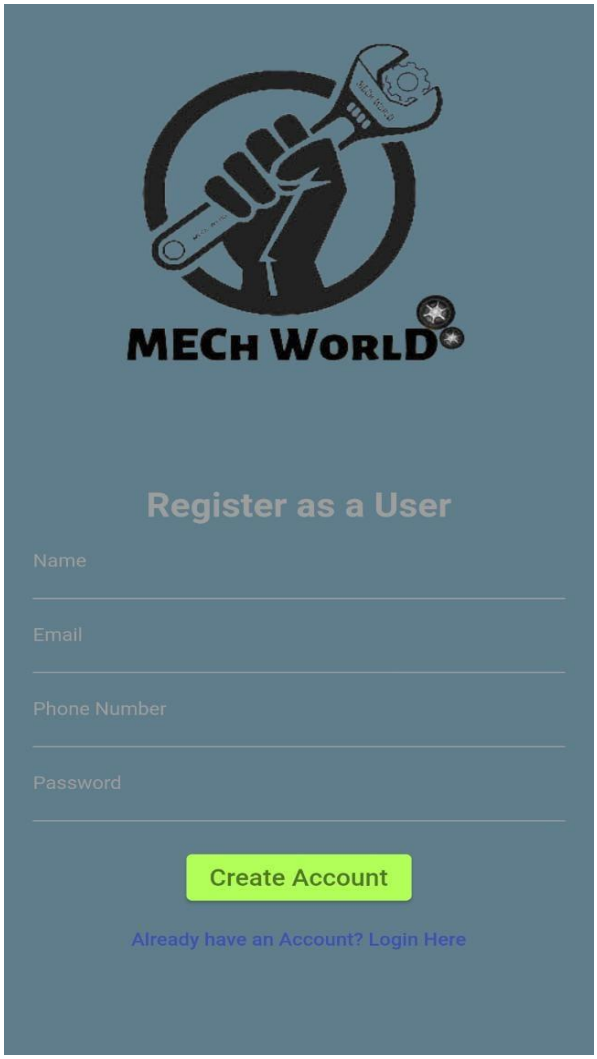

Figure 2.1: User Registration 1

Figure 2.2: User Registration 2

2.2 Mechanic Registration Page

This is our Mechanic Registration page. Mechanic can go through this page and register yourself for giving the service of MechWorld user.

In the Name field put your Name, and in email, field put your valid email id otherwise It will give an error, in the phone number field put your valid Indian phone number and, in the password, field put your own created password that should be at least 6 characters after that user click on create Account then after he have register himself.

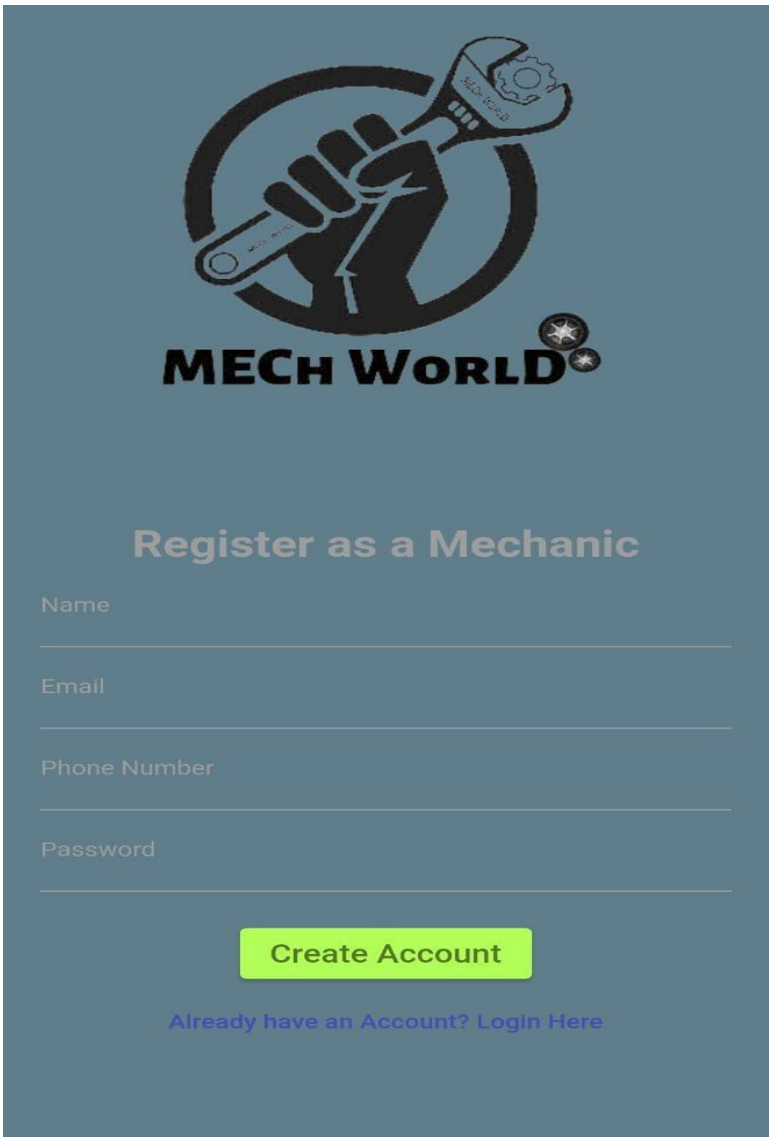

Figure 2.3: Mechanic Registration

2.3 User Registration Flow chart:

In this flowchart we have indicated the process of user registration. Firstly, user register with their personal information like his/her name, email, phone no and password. After we collect the vehicle information like vehicle name, car name, car no etc.

After we provide a function for a request a mechanic and we get his exact location.

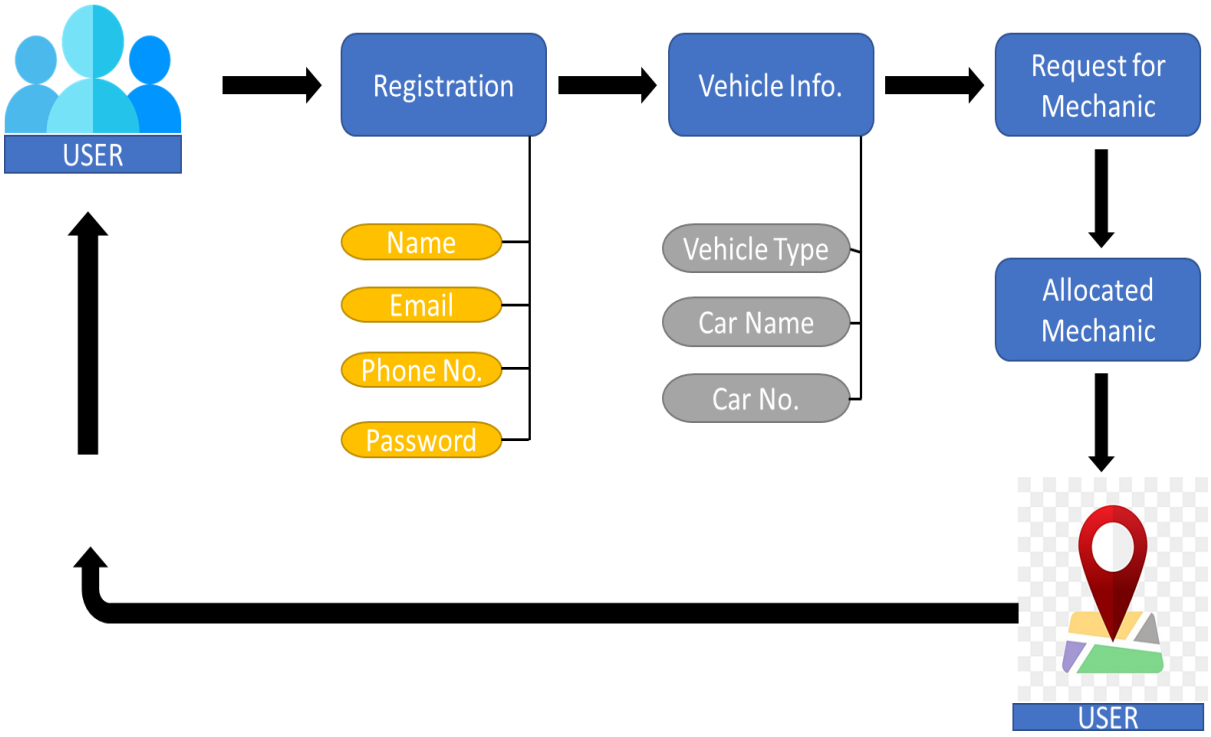

Figure 2.4: User Registration flow chart

2.4 Mechanic Registration Flow chart:

In this flowchart we have indicated the process of mechanic registration. Firstly, mechanic register with their personal information like his/her name, email, phone no and password.

After we collect the mechanic information like service center name, mechanic address, mechanic type, mechanic id card no, id card photo etc.

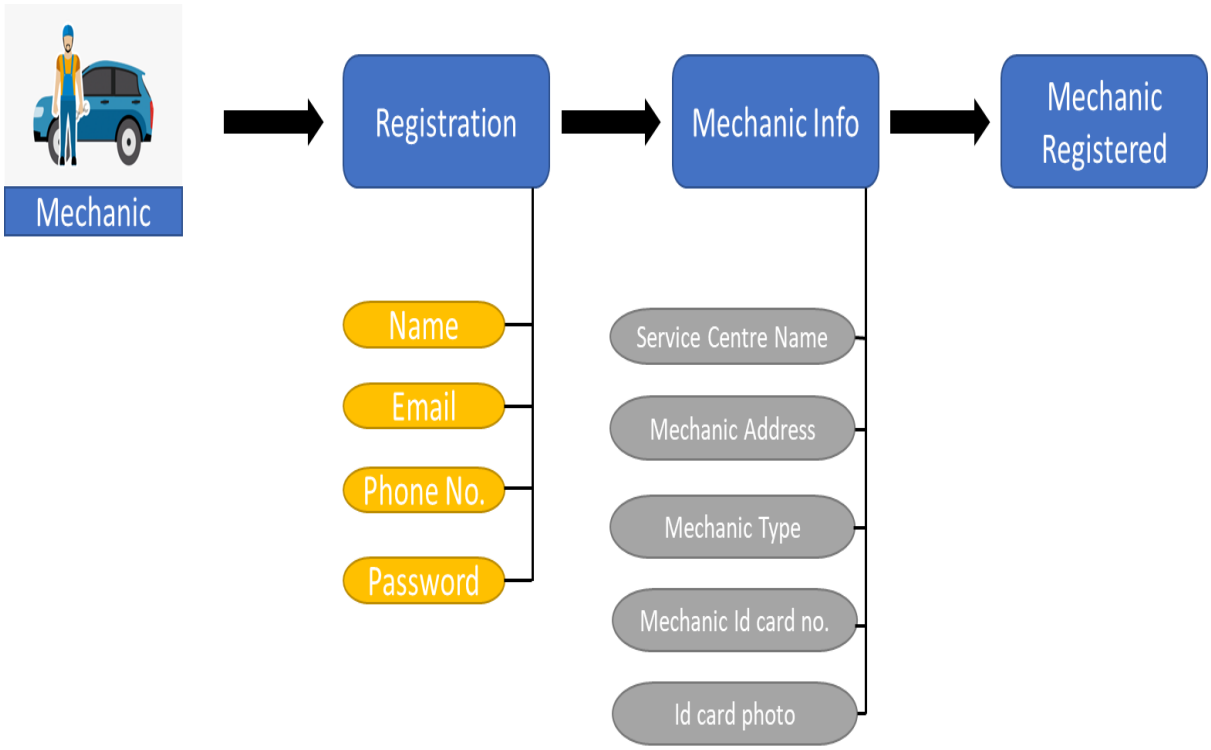

Figure 2.5: Mechanic Registration flow chart

2.5 SPLASH SCREEN

CUSTOMER APP

MECHANIC APP

Figure 2.6: User Space Screen

Figure 2.7: Mechanic Splace Screen

CHAPTER-3

LOGIN PAGE

A Login page is a web page or an entry page to a website that requires user identification and authentication, regularly performed by entering a username and password combination. Logins may provide access to an entire site or part of app. Logging in not only provides app pages access for the user, but also allows the app to track user actions and behaviour. Logging off a webpage or site may be manual by the user or they can occur automatically when certain conditions (such as closing the page, turning off the computer, a long-time delay, etc.) occur.

Some app use permission access to track users during their logged in sessions. Generally, this permission will turn off when the user logs out. Those permission that are automatically deactivated and deleted from the user's computer are called *session-only cookies.* Protective measures that delete and invalidate associations between a user's handle and the session help assure users that logins can happen from any location, including public computers.

3.1 User Loin page: After User Registration, they will be automatically Redirected to Login page. On Login page users to fill their registered email and password after he will automatically redirect to the home page then he can search mechanics service and book mechanic for service their vehicles

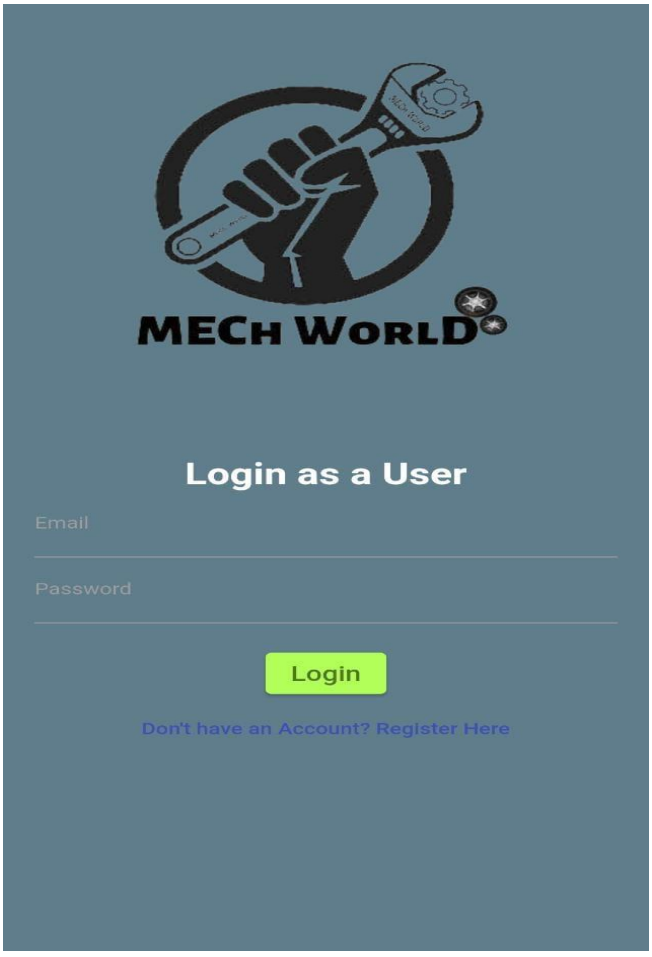

Figure 3.1: User Login

3.2 Mechanics Login page:

After Mechanic Registration, they will going automatically Login page In Login page us mechanic have to give their registered email and password after he will automatically going to the home page then he can get user request and for that request mechanic will get user current location so that mechanic can go their current location through our app and after reaching user current location mechanics can provides service whatever user vehicle damage or whatever user want after that for the payment method they can give cash or online both payment methods accepted in this app.

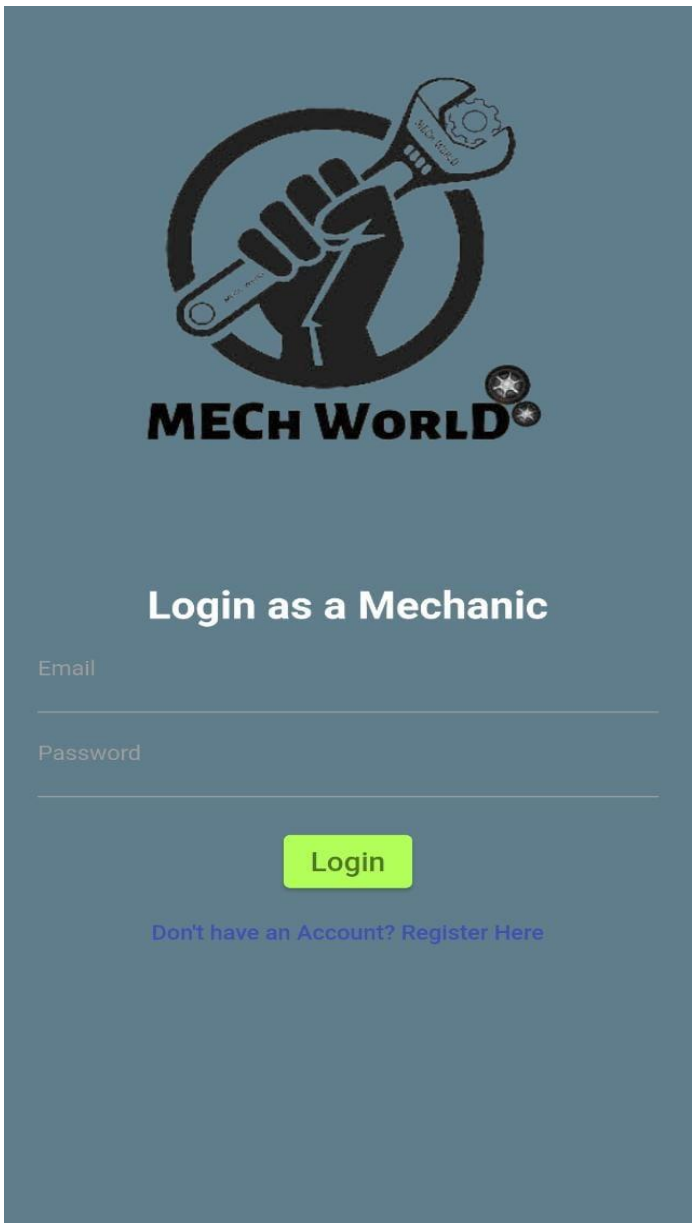

Figure 3.2: Mechanic Login

CHAPTER-4 WORKING ALGORITHM

This chapter introduces the mechanic working diagram in section 4.1, and mechanic working flowchart in section 4.2. which include how mechanics connect to MechWorld.

An algorithm is a procedure used for solving a problem or performing a computation. Algorithms act as an exact list of instructions that conduct specified actions step by step in either hardware- or software-based routines.

Algorithms are widely used throughout all areas of IT. In mathematics and computer science, an algorithm usually refers to a small procedure that solves a recurrent problem. Algorithms are also used as specifications for performing data processing and play a major role in automated systems.

4.1 MECHANIC WORKING DIAGRAM

In this diagram we indicating the process of how our app connect user to mechanic and store their data. In figure 4.1 firstly, we are using Google API, firebase and google map in our app and connect to each other. After we store all data in our database to fetch it.

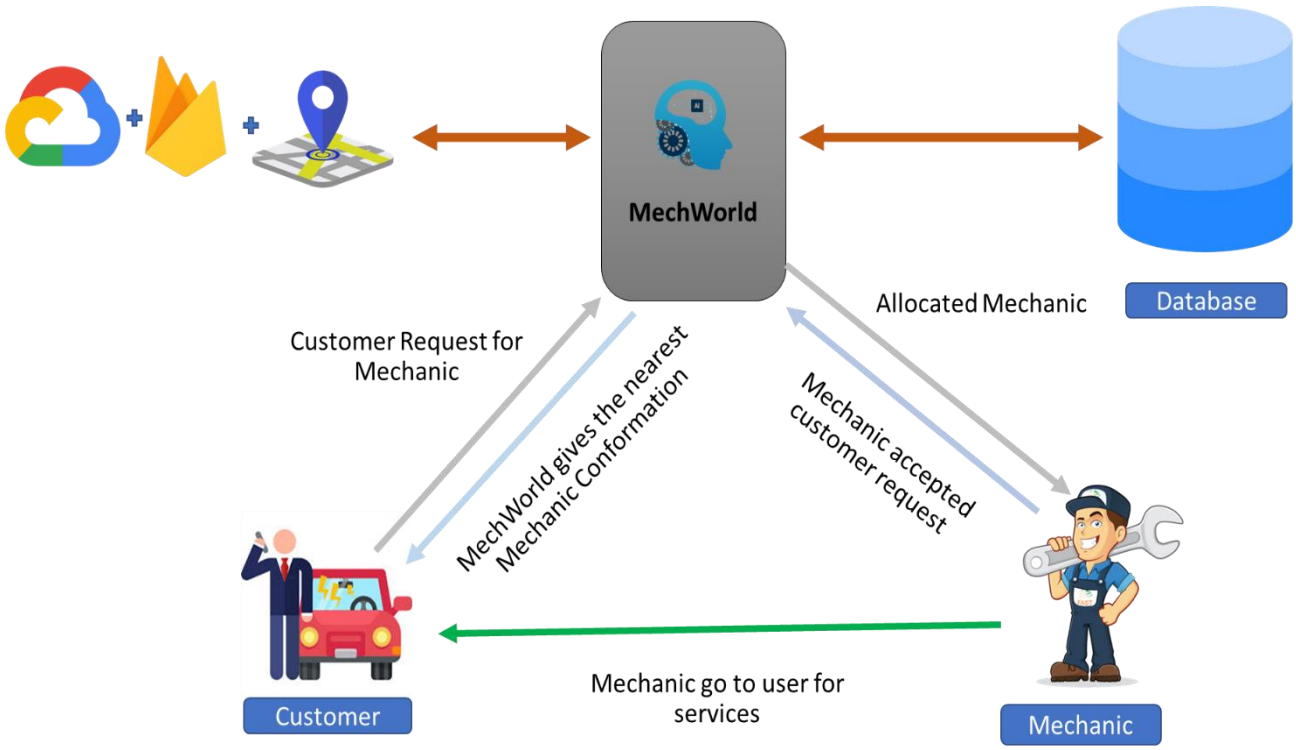

Figure 4.1: Mechanic Working diagram

4.2 Mechanic Working Flow chart

Here, in this flowchart we are gathering the information of mechanics which include(Name, Mobile No. ,Address). After that we are taking types of mechanics like Bike, Car, Bus, Truck etc.

After verifying credential of the mechanic automatically add to the mechanic database and it shows in booking section.

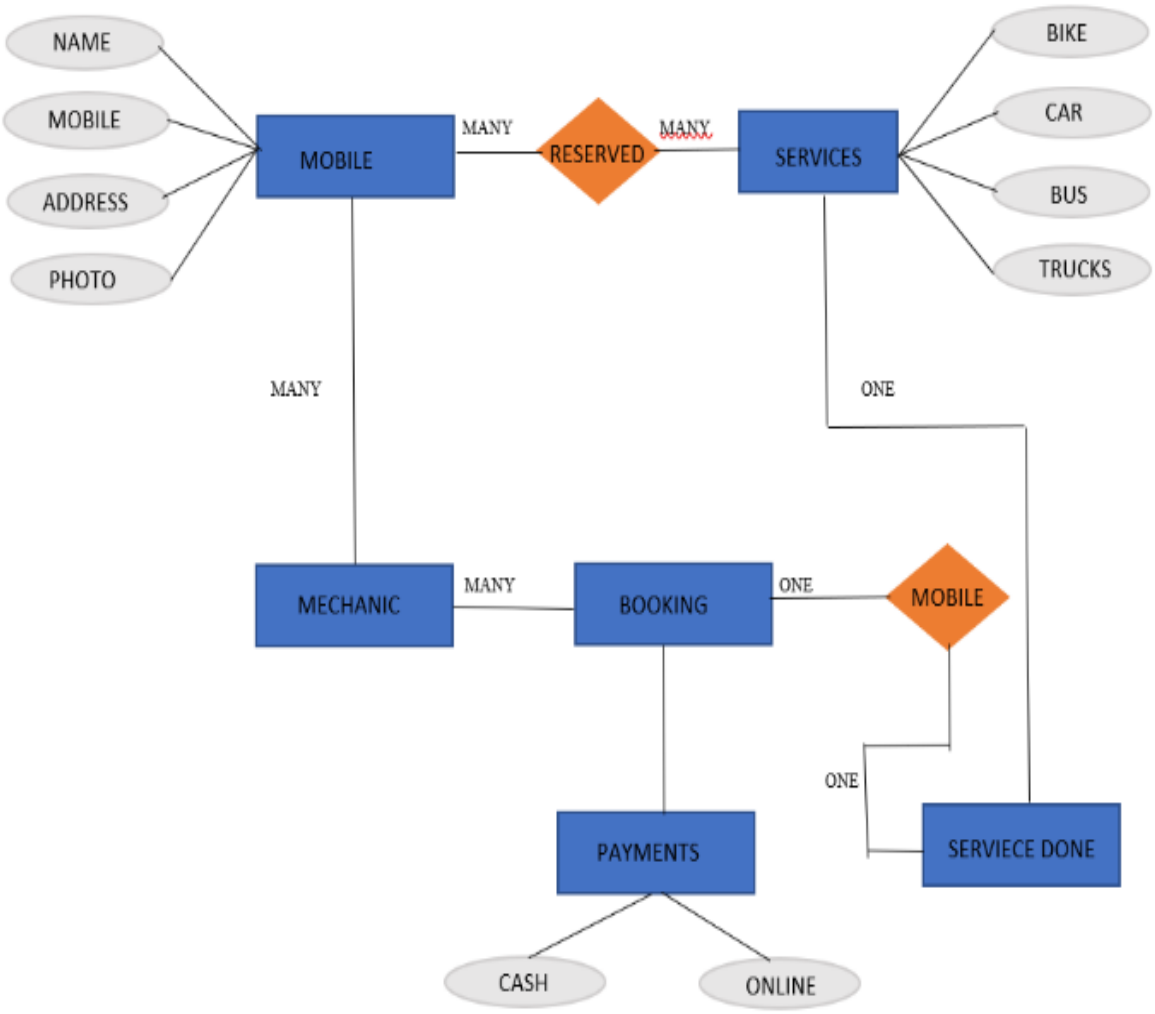

Figure 4.2: Mechanic Working Flow chart

CHAPTER-5 ADMIN PANEL

The admin panel is usually a web-based interface that helps manage the entire service: manage back-end settings, manage mechanics, users, requests, transactions, view mechanics and users' activities, statistics, and generate reports. And many more operations like delete mechanic, add mechanic, update mechanics, and users.

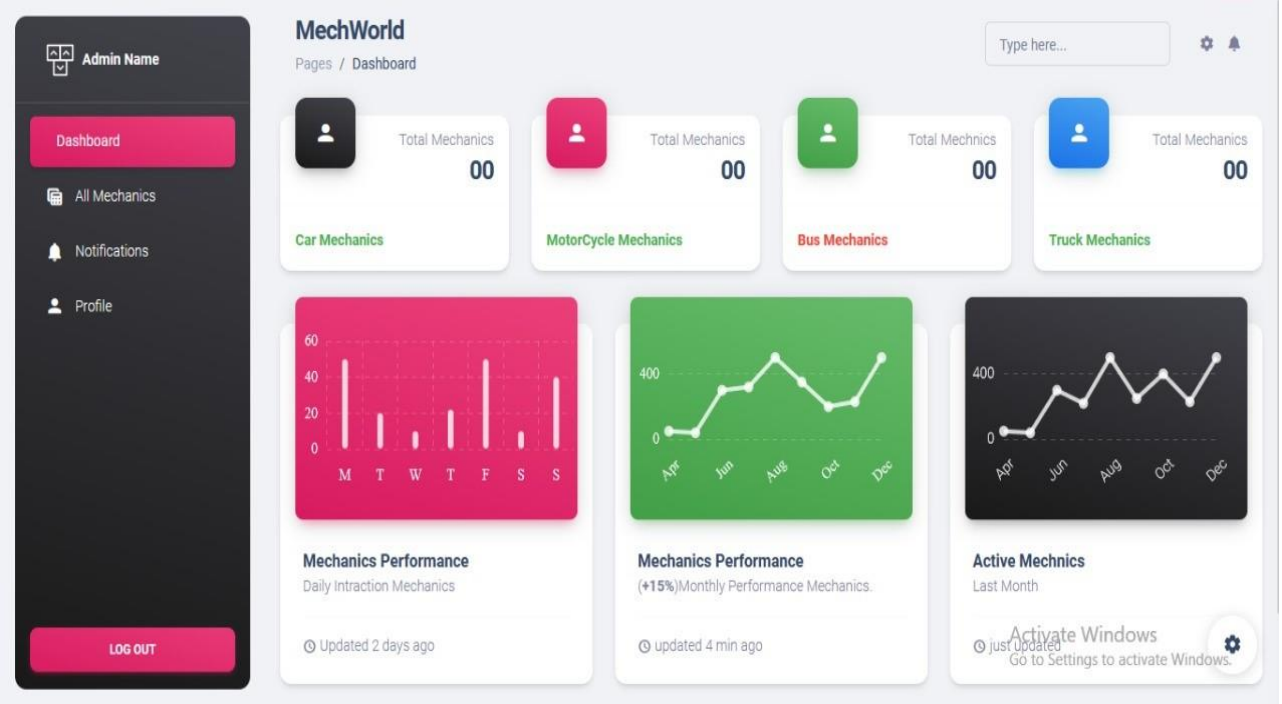

Figure 5.1: Admin Panel 1

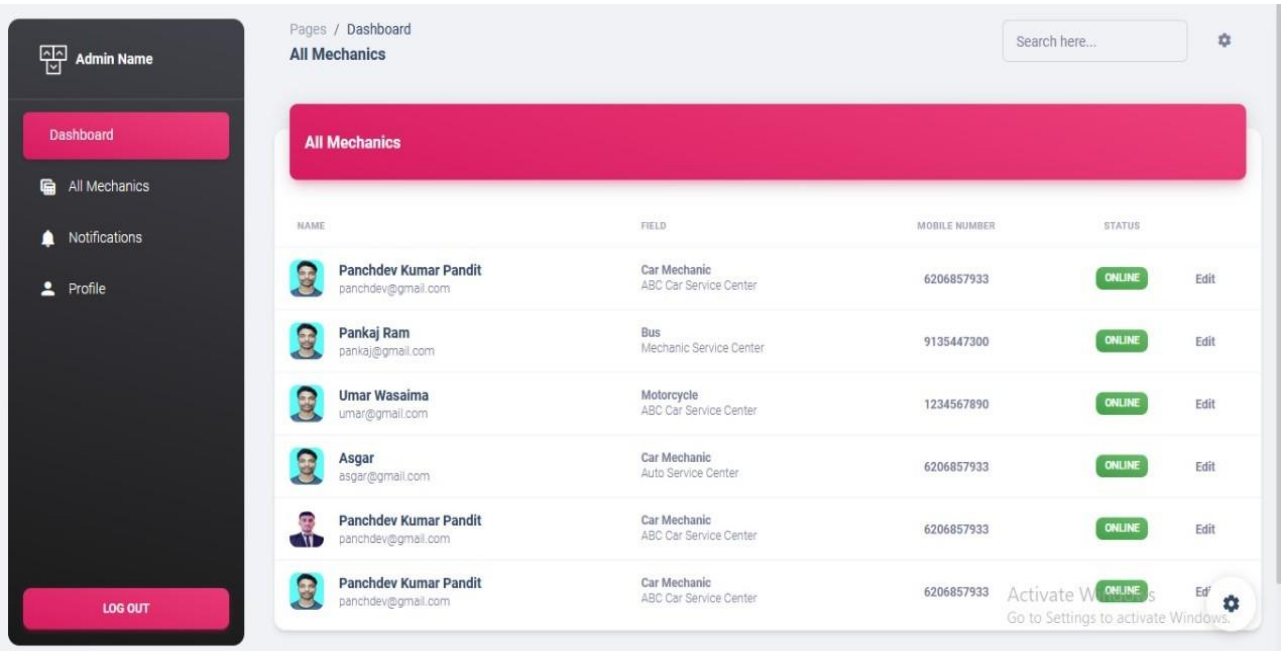

Figure 5.2: Admin panel 2

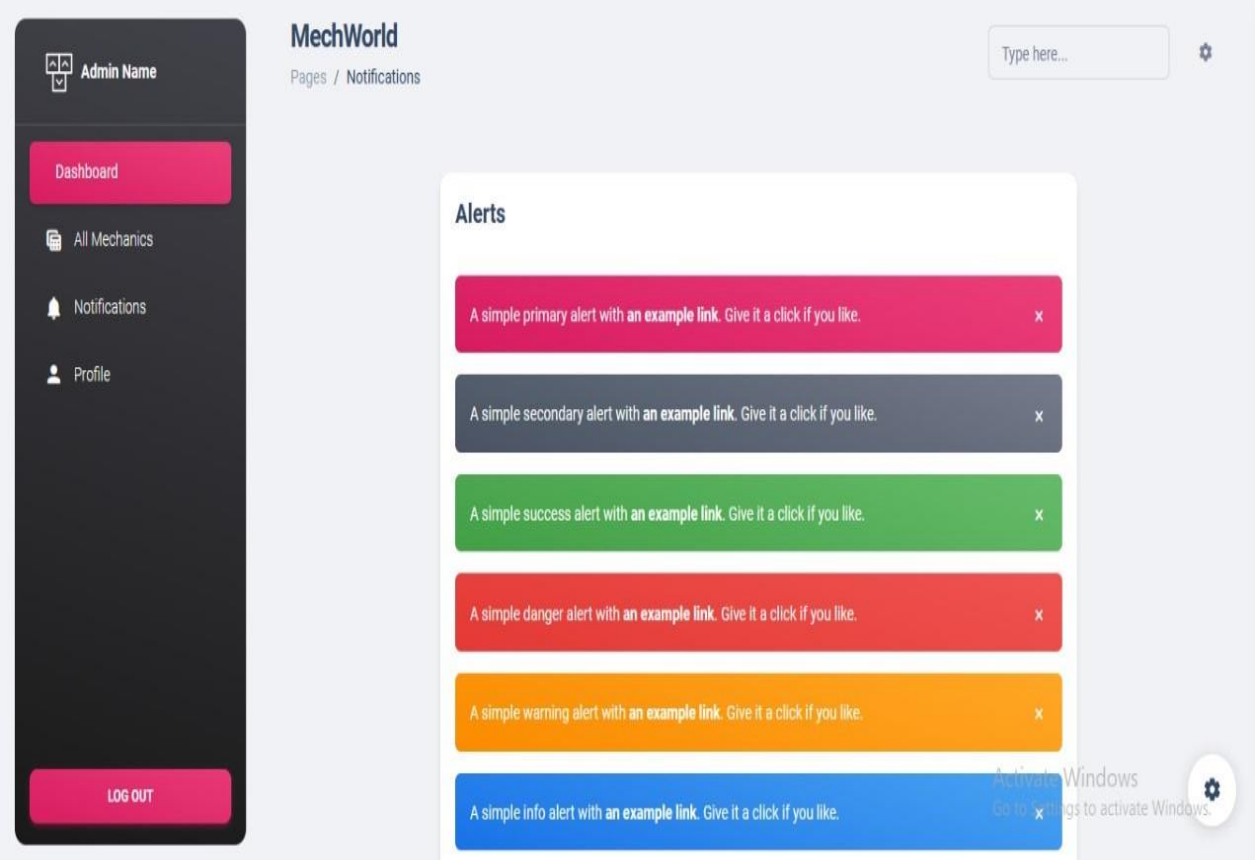

Figure 5.3: Admin panel 3

Let's see what aspects are crucial, and should be included in the admin panel:

- **Passengers.** Every account detail about passengers is gathered here, including their ratings. Here you can track the passengers' activities, change account details, and ban passengers with a low rating.
- **Drivers.** Driver details are more important because they should include information from the official documents. Again, you can track all activities and ratings to control the service's quality.
- **Admin dashboard.** The system thoroughly gathers information from different activities and sums it up in reports and graphs. You will be able to see global stats and make business decisions accordingly. Another important data set that should be stored here is financial results and analytics.
- **Locations.** Depending on the demand, admins can control from which areas to accept the orders. And on the contrary, admins can add more locations to the system.
- **Discounts and promo codes.** Any special offers are also controlled in the admin panel: the type of the offer, its duration, date of activation, and user information.
- **Promotion.** Admins can add advertisements to the app, edit its size and shape, duration, and, most importantly, the users' reaction and number of clicks (taps).

CHAPTER-6 **WORKING COMPONENT**

6.1 Language Used:

6.1.1 Dart Programming Language-

Dart is a client-optimized language for developing fast apps on any platform. Its goal is to offer the most productive programming language for multi-platform development, paired with a flexible execution runtime platform for app frameworks.

Dart is an object-oriented language with C-style syntax which can optionally trans compile into JavaScript. It supports a varied range of programming aids like interfaces, classes, collections, generics, and optional typing.

Dart can be extensively used to create single-page applications. Single-page applications apply only to websites and web applications. Single-page applications enable navigation between different screens of the website without loading a different webpage in the browser. A classic example is **Gmail ─** when you click on a message in your inbox, browser stays on the same webpage, but JavaScript code hides the inbox and brings the message body on screen.

Google has released a special build of **Chromium** – the **Dart VM**. Using Dartium means you don't have to compile your code to JavaScript until you're ready to test on other browsers.

The following table compares the features of Dart and JavaScript.

6.2 Executing Script Online with Dart Pad

You may test your scripts online by using the online editor at https://dartpad.dartlang.org/. The Dart Editor executes the script and displays both HTML as well as console output. The online editor is shipped with a set of present code samples.

A screenshot of the **Dart pad** editor is given below −

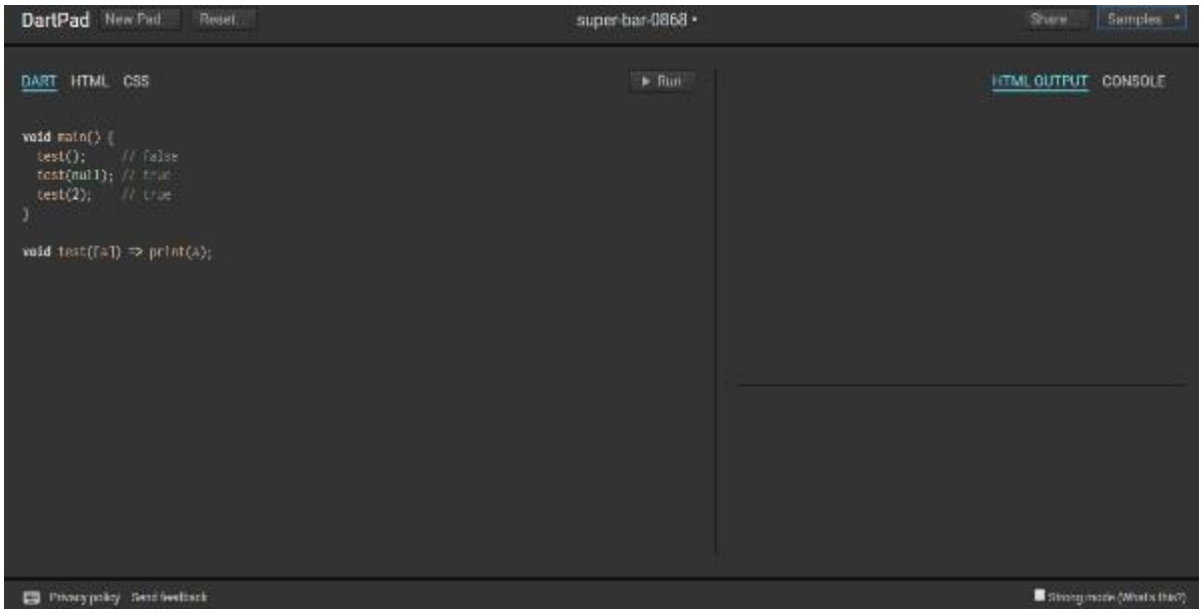

Figure 6.1 Execution script of dart

Dart pad also enables to code in a more restrictive fashion. This can be achieved by checking the Strong mode option on the bottom right of the editor. Strong mode helps with −

- Stronger static and dynamic checking
- Idiomatic JavaScript code generation for better interoperability.

You may try the following example using Dart pad

For example: -

```
void main() {
  print('hello world');
}
```

The code will display the following output

```
hello world
```

6.2.1 Setting Up the Local Environment

In this section, let us see how to set up the local environment.

6.2.2 Using the Text Editor

Examples of a few editors include Windows Notepad, Notepad++, Emacs, vim or vi, etc. Editors may vary from one Operating System to another. The source files are typically named with the extension ". dart".

6.2.3 Installing the Dart SDK

The current stable version of Dart is **1.21.0**. The **dart SDK** can be downloaded from −

- https://www.dartlang.org/install/archive
- http://www.gekorm.com/dart-windows/

A screenshot of the Dart SDK installation is given below −

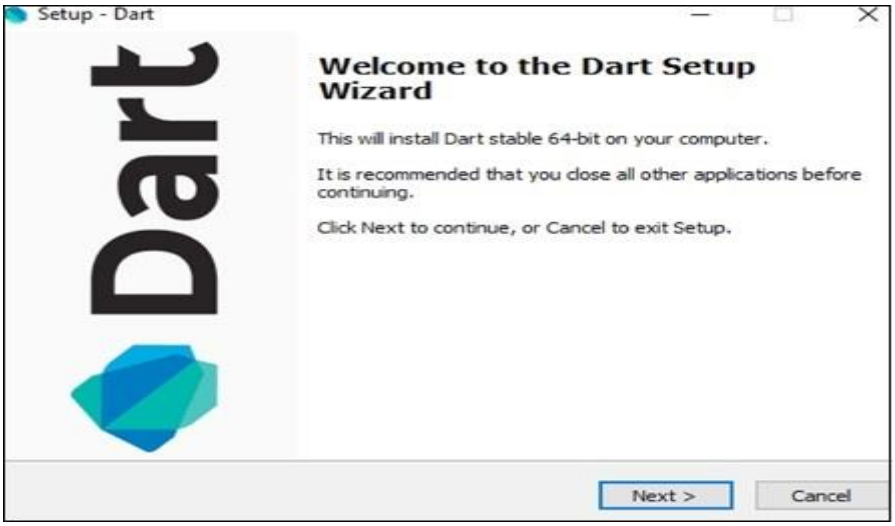

Figure 6.2 installation of dart

On completion of the SDK installation, set the PATH environment variable to −

```
<dart-sdk-path>\bin
```

6.2.4 Verifying the Installation

To verify if Dart has been successfully installed, open the command prompt and enter the following command −

```
Dart
```

If installation is successful, it will show the dart runtime.

6.2.5 IDE Support

A plethora of IDEs support scripting in Dart. Examples include **Eclipse, IntelliJ**, and **WebStorm** from Jet brains.

Given below are the steps for configuring the Dart environment using **WebStorm IDE**.

6.2.6 Installing WebStorm

The installation file for WebStorm can be downloaded from https://www.jetbrains.com/webstorm/download/#section=windows-version.

The WebStorm installation file is available for Mac OS, Windows and Linux.

After downloading the installation files, follow the steps given below −

- Install the Dart SDK: Refer to the steps listed above
- Create a new Dart project and configure Dart support
- To create a new Dart project,
    - Click **Create New Project** from the Welcome Screen
    - In the next dialog box, click **Dart**
- If there is no value specified for the **Dart SDK** path, then provide the SDK path. For example, the SDK path may be **<dart installation directory>/dart/darted**.

6.2.7 Add a Dart File to the Project

To add a Dart file to the Project −

- Right-click on the Project
- New → Dart File
- Enter the name of the Dart Script

A screenshot of the WebStorm Editor is given below −

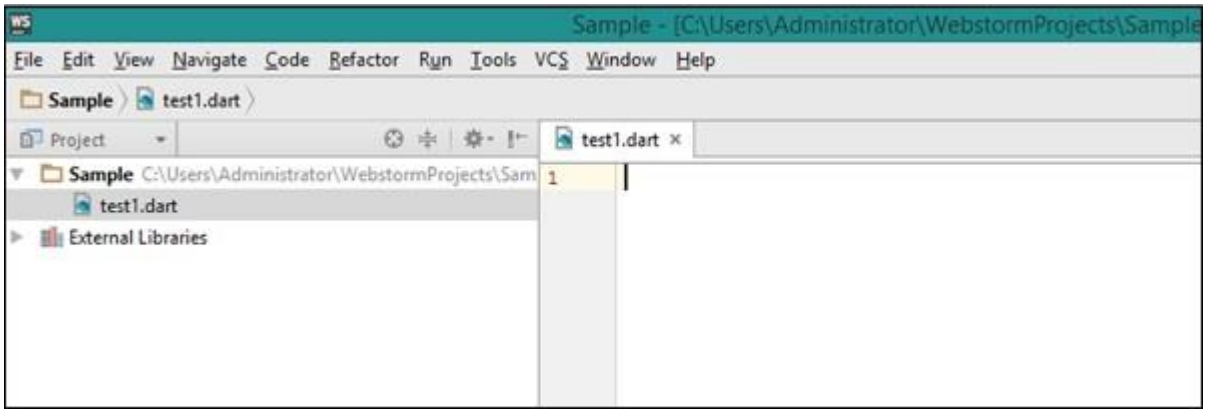

Figure 6.3 Creating Dart Project

6.2.8 The dart2js Tool

The **dart2js** tool compiles Dart code to JavaScript. Compiling Dart code to JS enables running the Dart script on browsers that do not support the Dart VM.

The dart2js tool is shipped as a part of the Dart SDK and can be found in the **/dartsdk/bin folder**.

To compile Dart to JavaScript, type the following command in the terminal

```
dart2js - - out = <output_file>.js <dart_script>.dart
```

6.3 Platform

6.3.1 Android Studio

Android Studio is the official[8] integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.[9] It is available for download on Windows, macOS and Linux based operating systems.[10] It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development.

Android Studio was announced on May 16, 2013, at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014.[11] The first stable build was released in December 2014, starting from version 1.0.[12]

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

6.3.2 Features Of Android Studio

The following features are provided in the current stable version:[15][16]

- Gradle-based build support
- Android-specific refactoring and quick fixes
- Lint tools to catch performance, usability, version compatibility and other problems
- ProGuard integration and app-signing capabilities
- Template-based wizards to create common Android designs and components
- A rich layout editor that allows users to drag-and-drop UI components, option to preview layouts on multiple screen configurations[17]
- Support for building Android Wear apps
- Built-in support for Google Cloud Platform, enabling integration with Firebase Cloud Messaging (Earlier 'Google Cloud Messaging') and Google App Engine[18]
- Android Virtual Device (Emulator) to run and debug apps in the Android studio

6.3.3 Installation Guide:

Step 1: Search on Google and go to android studio main page and get the Android Studio executable or zip file.

Step 2: Click on the **Download Android Studio** Button.

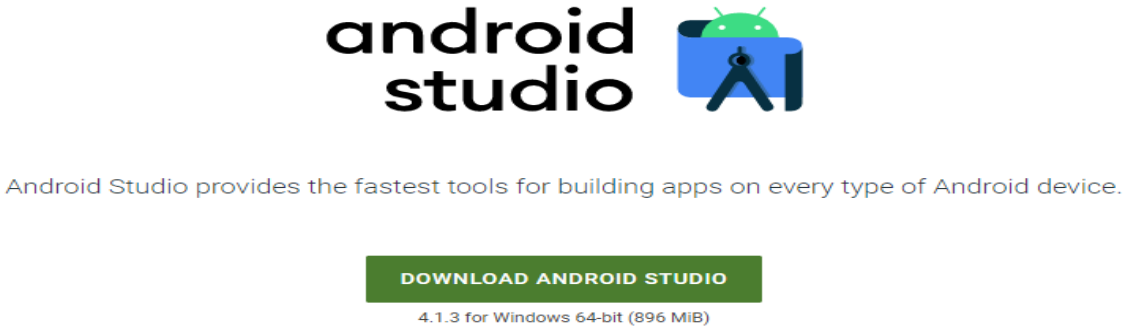

Figure 6.4 Setup of Android Studio

Click on the “I have read and agree with the above terms and conditions” checkbox followed by the download button.

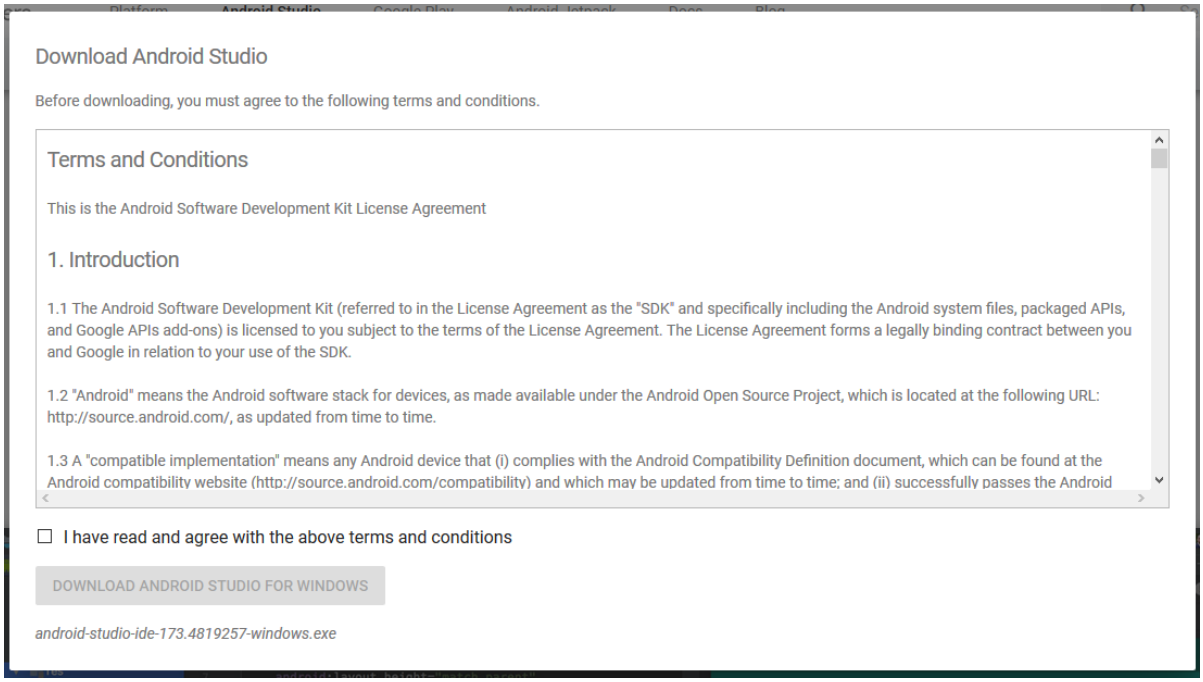

Figure 6.5 T & C of android Studio

Click on the Save file button in the appeared prompt box and the file will start downloading.

Step 3: After the downloading has finished, open the file from downloads and run it. It will prompt the following dialog box.

Figure 6.6 Android Studio Setup step 1

Click on next. In the next prompt, it'll ask for a path for installation. Choose a path and hit next.

Step 4: It will start the installation, and once it is completed, it will be like the image shown below.

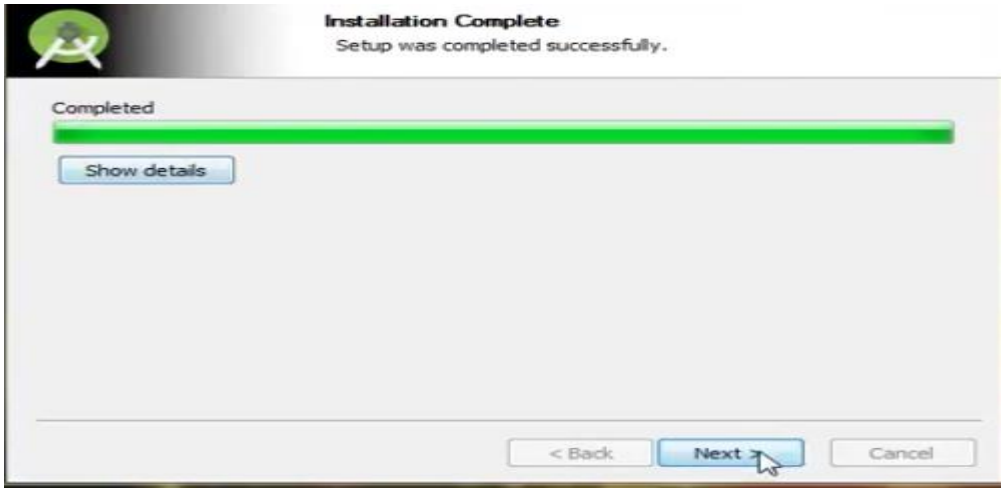

Figure 6.7 Android Studio Setup step 2

Click on next.

Figure 6.8 Android Studio Setup step 3

Step 5: Once "**Finish**" is clicked, it will ask whether the previous settings need to be imported [if the android studio had been installed earlier], or not. It is better to choose the 'Don't import Settings option'.

Figure 6.9 Android Studio Setup step 4

Click the **OK** button.

Step 6: This will start the Android Studio.

Figure 6.10 Android Studio Setup step 5

Meanwhile, it will be finding the available SDK components.

Figure 6.11 SDK Downloading Components

Step 7: After it has found the SDK components, it will redirect to the Welcome dialog box.

Figure 6.12 Welcome Dialog Box

Click on **Next**.

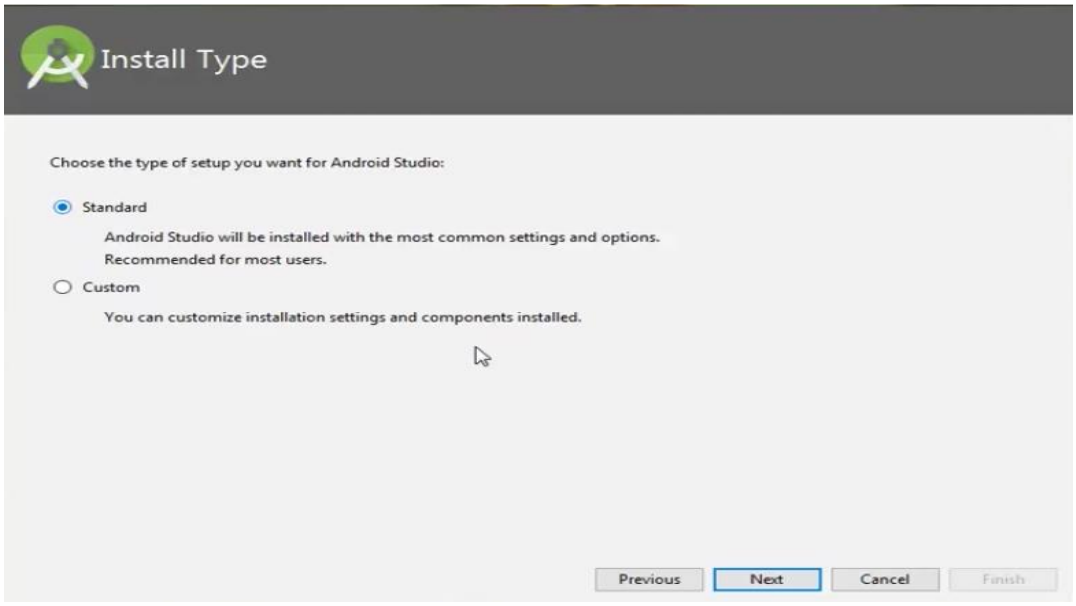

Figure 6.13 Install Type

Choose Standard and click on Next. Now choose the theme, whether the **Light** theme or the **Dark** one. The light one is called the **IntelliJ** theme whereas the dark theme is called **Dracula**. Choose as required.

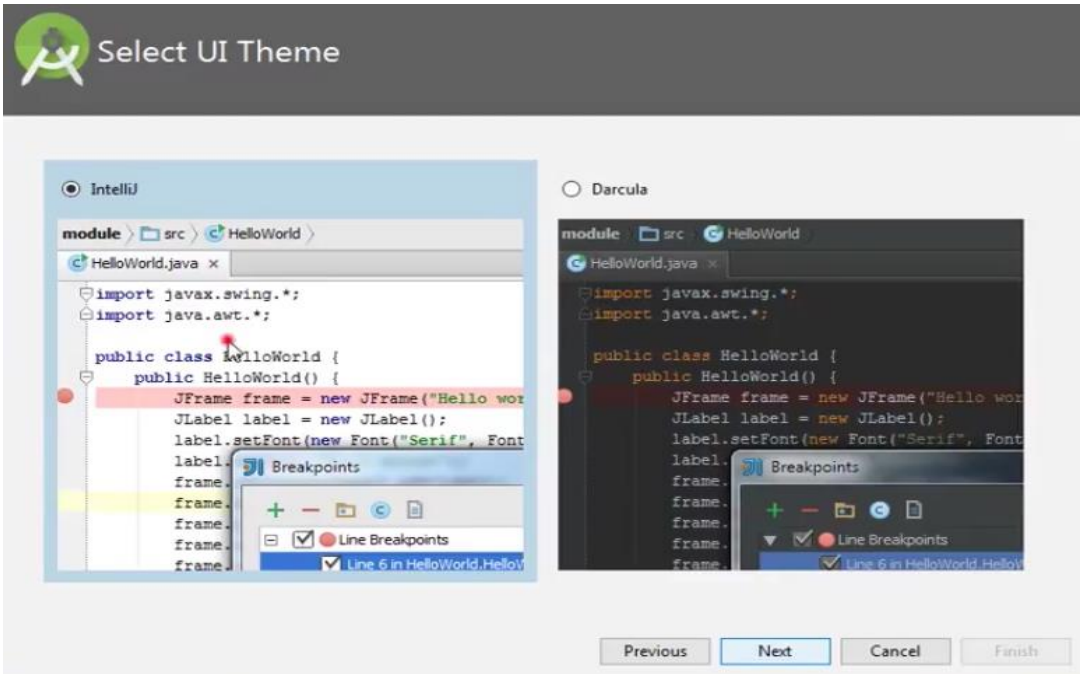

Figure 6.14 UI Thems

Click on the **Next** button.

Step 8: Now it is time to download the SDK components.

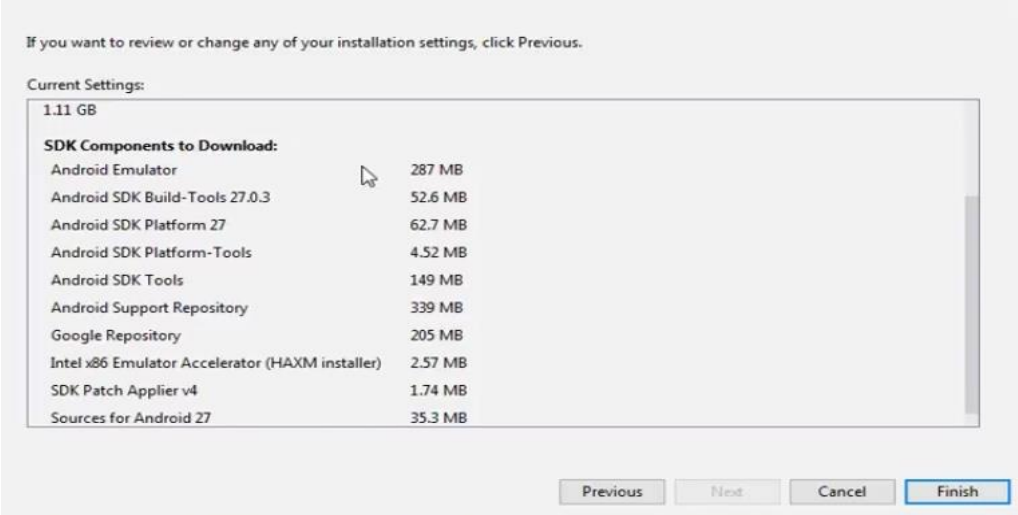

Figure 6.15 SDK Components

Click on Finish. Components begin to download let it complete.

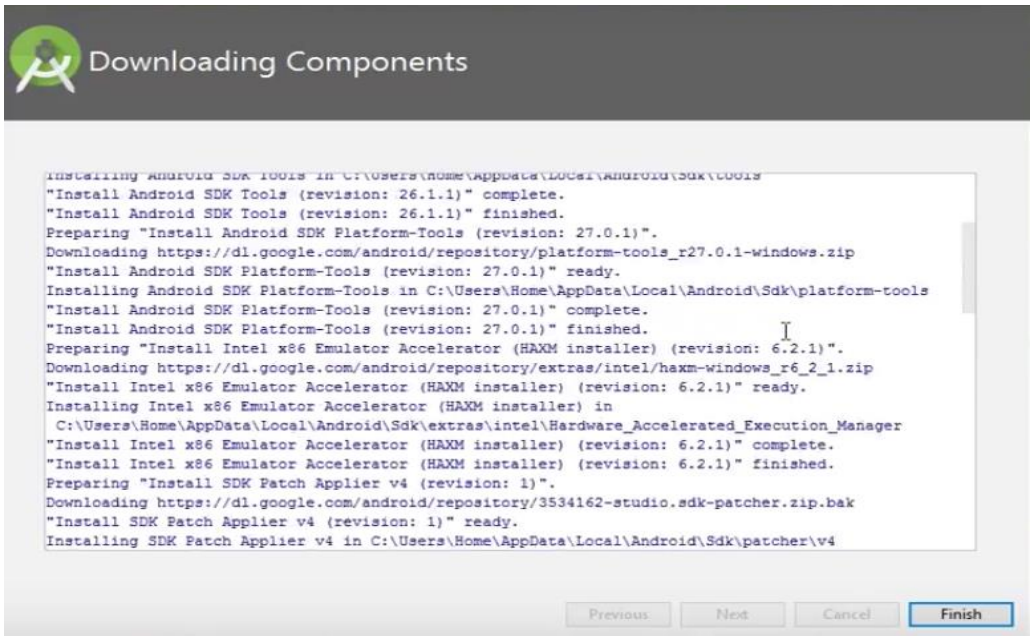

Figure 6.16 SDK Componets

The Android Studio has been successfully configured. Now it's time to launch and build apps. Click on the Finish button to launch it.

Step 9: Click on **Start a new Android Studio project** to build a new app.

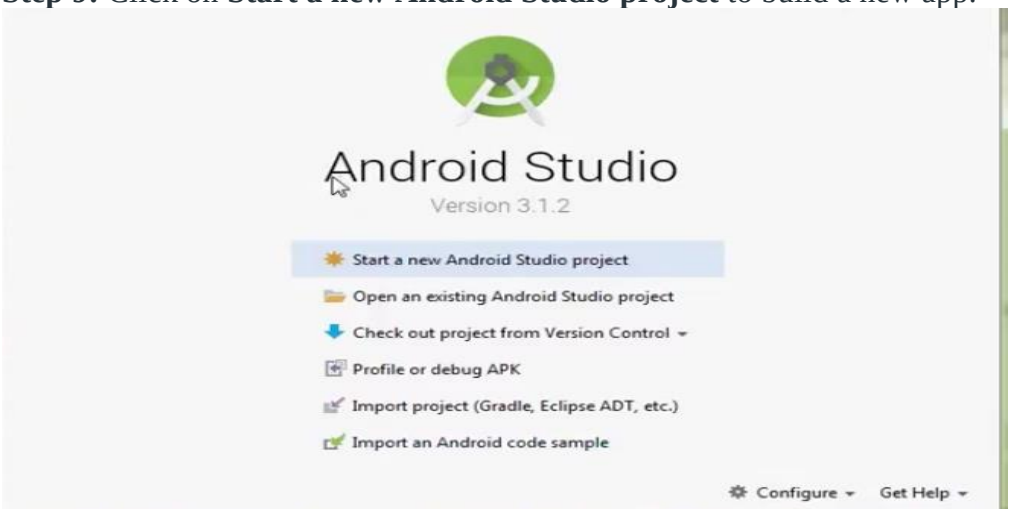

Figure 6.17 Start New Project

6.4 Visual Studio

Visual Studio Code, also commonly referred to as **VS Code**,[9] is a source-code editor made by Microsoft for Windows, Linux and macOS.[10] Features include support for debugging, syntax_highlighting, intelligent_code_completion, snippets, code_refactoring, and embedded Git. Users can change the theme, keyboard_shortcuts, preferences, and install extensions that add additional functionality.

In the Stack Overflow 2021 Developer Survey, Visual Studio Code was ranked the most popular developer environment tool, with 70% of 82,000 respondents reporting that they use it.

6.4.1 History

Visual Studio Code was first announced on April 29, 2015, by Microsoft at the 2015 Build conference. A preview build was released shortly thereafter.[12]

On November 18, 2015, the source of Visual Studio Code was released under the MIT License, and made available on GitHub. Extension support was also announced.[13] On April 14, 2016, Visual Studio Code graduated from the public preview stage and was released to the Web.[14] Microsoft has released most of Visual Studio Code's source code on GitHub under the permissive MIT License,[5][15] while the releases by Microsoft are proprietary freeware.

6.4.2 Features

Visual Studio Code is a source-code editor that can be used with a variety of programming languages,
including Java, JavaScript, Go, Node.js, Python, C++, C, Rust and Fortran.[16][17][18][19] It is based on the Electron framework,[20] which is used to develop Node.js Web applications that run on the Blink layout engine. Visual Studio Code employs the same editor component (codenamed "Monaco") used in Azure DevOps (formerly called Visual Studio Online and Visual Studio Team Services).[21]

Out of the box, Visual Studio Code includes basic support for most common programming languages. This basic support includes syntax highlighting, bracket matching, code folding, and configurable snippets. Visual Studio Code also ships with IntelliSense for JavaScript, TypeScript, JSON, CSS, and HTML, as well as debugging support for Node.js. Support for additional languages can be provided by freely available extensions on the VS Code Marketplace.[22]

6.4.3 Installing Visual Studio Code on Windows

Follow the below steps to install **Visual Studio Code** on Windows:
Step 1: Visit the official website of the **Visual Studio Code** using any web browser like Google Chrome, Microsoft Edge, etc.

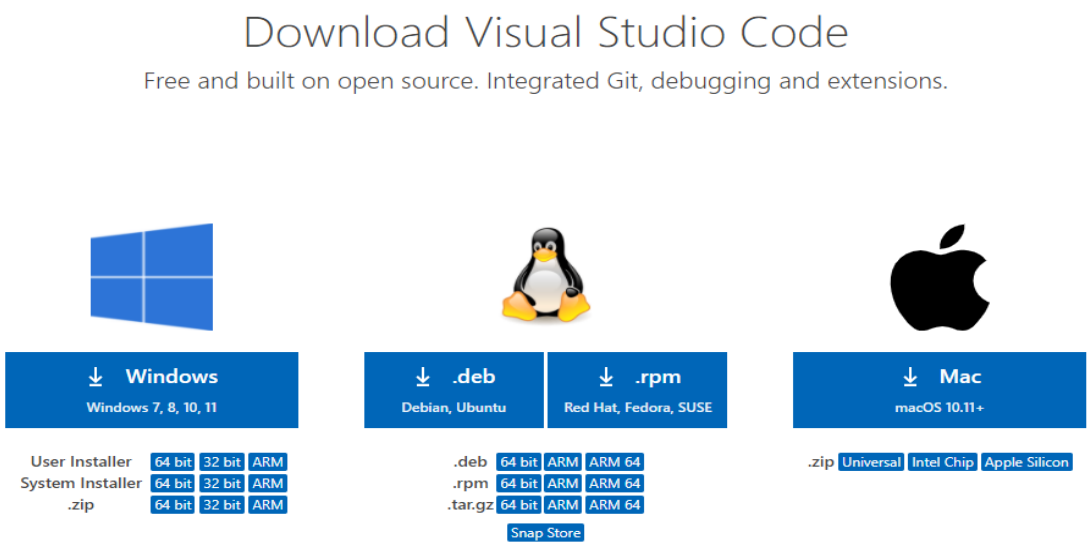

Figure 6.18 Visual Studio Setup

Step 2: Press the "**Download for Windows**" button on the website to start the download of the Visual Studio Code Application.

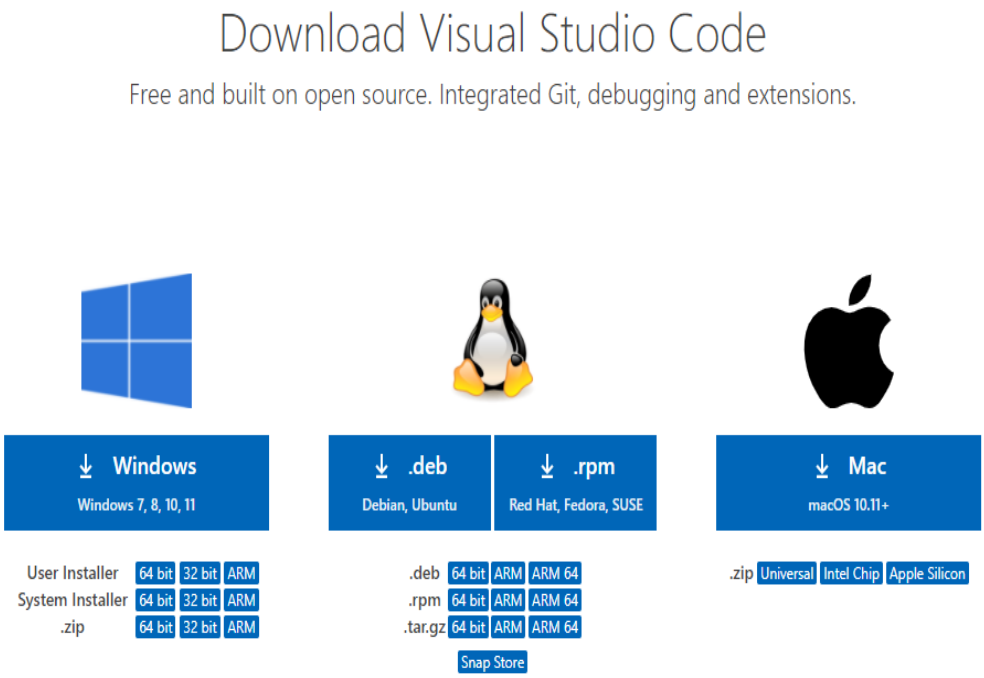

Figure 6.19 Visual Studio Setup

Step 3: When the download finishes, then the Visual Studio Code icon appears in the downloads folder.
Step 4: Click on the installer icon to start the installation process of the Visual Studio Code.

Figure 6.20 Downloading folder

Step 5: After the Installer opens, it will ask you for accepting the terms and conditions of the Visual Studio Code. Click on **I accept the agreement** and then click the **Next** button.

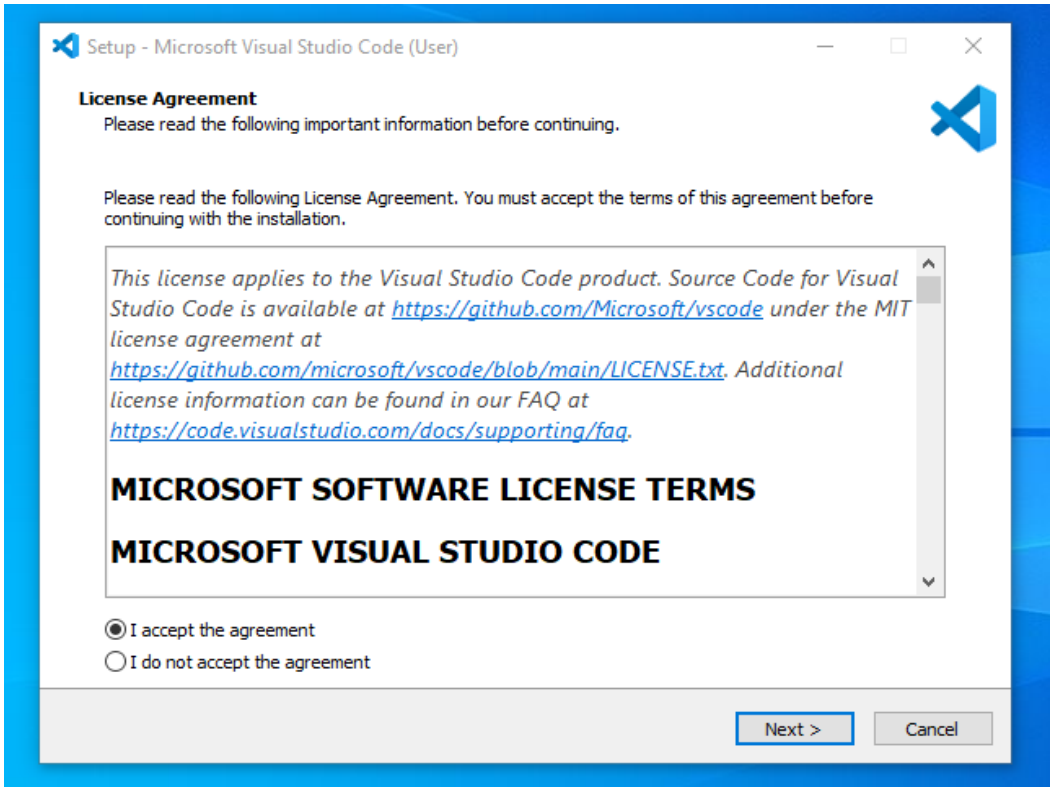

Figure 6.21 Check Term and Condition

Step 6: Choose the location data for running the Visual Studio Code. It will then ask you for browsing the location. Then click on **Next** button.

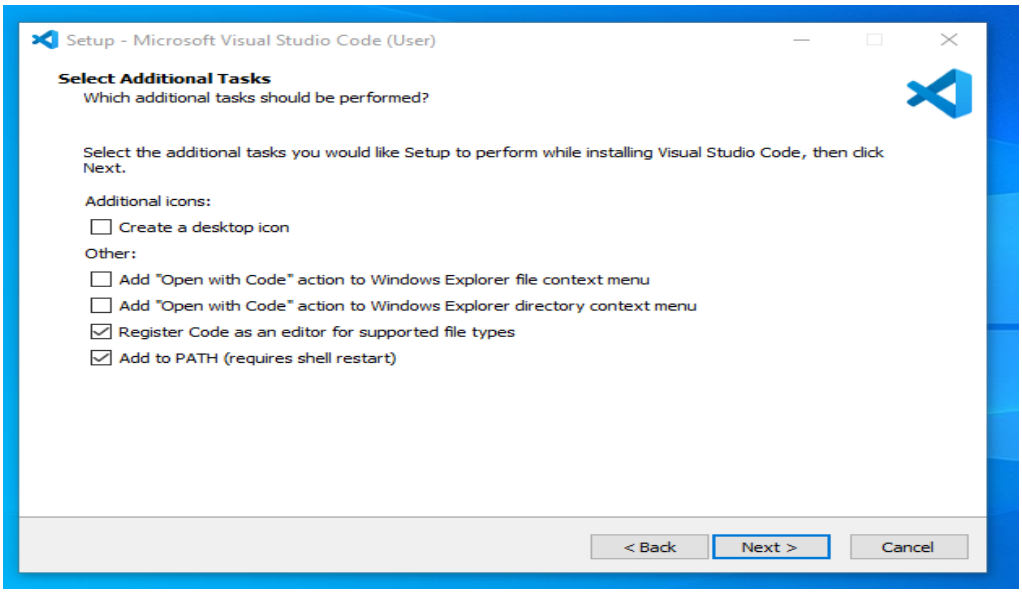

Figure 6.22 Select Additional Tasks

Step 7: Then it will ask for beginning the installing setup. Click on the **Install** button.

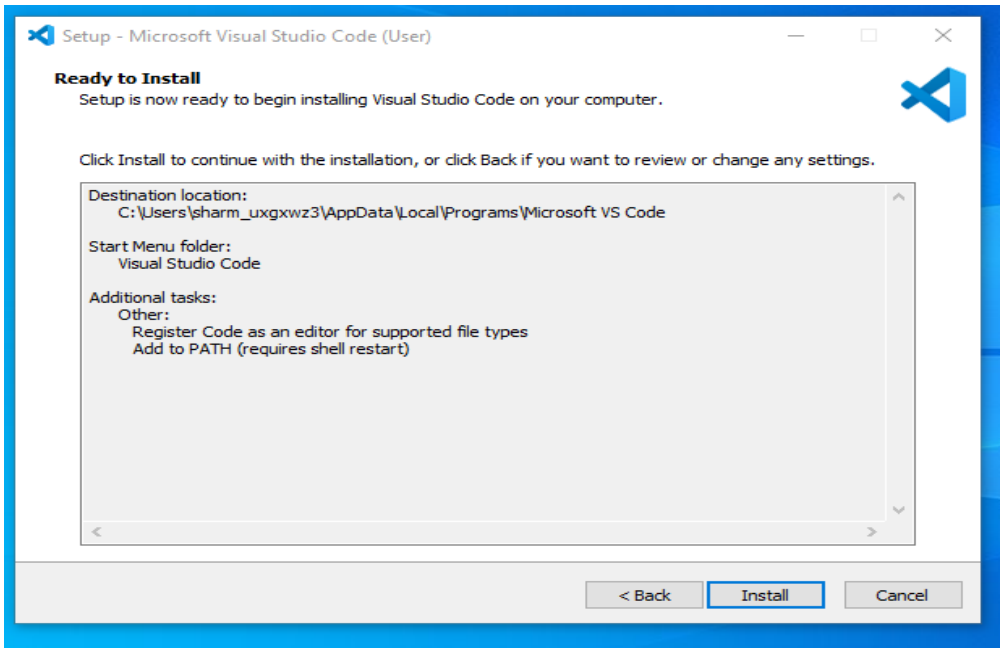

Figure 6.23 Showing Installation Location

Step 8: After clicking on Install, it will take about 1 minute to install the Visual Studio Code on your device.

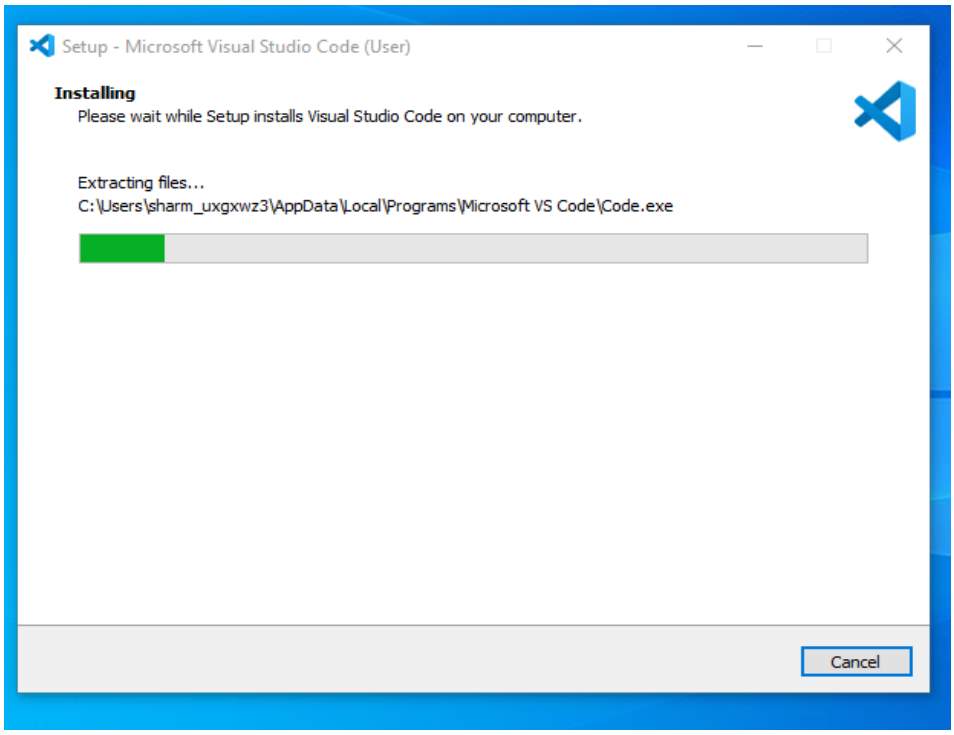

Figure 6.24 Installing

Step 9: After the Installation setup for Visual Studio Code is finished, it will show a window like this below. Tick the "**Launch Visual Studio Code**" checkbox and then click **Next**.

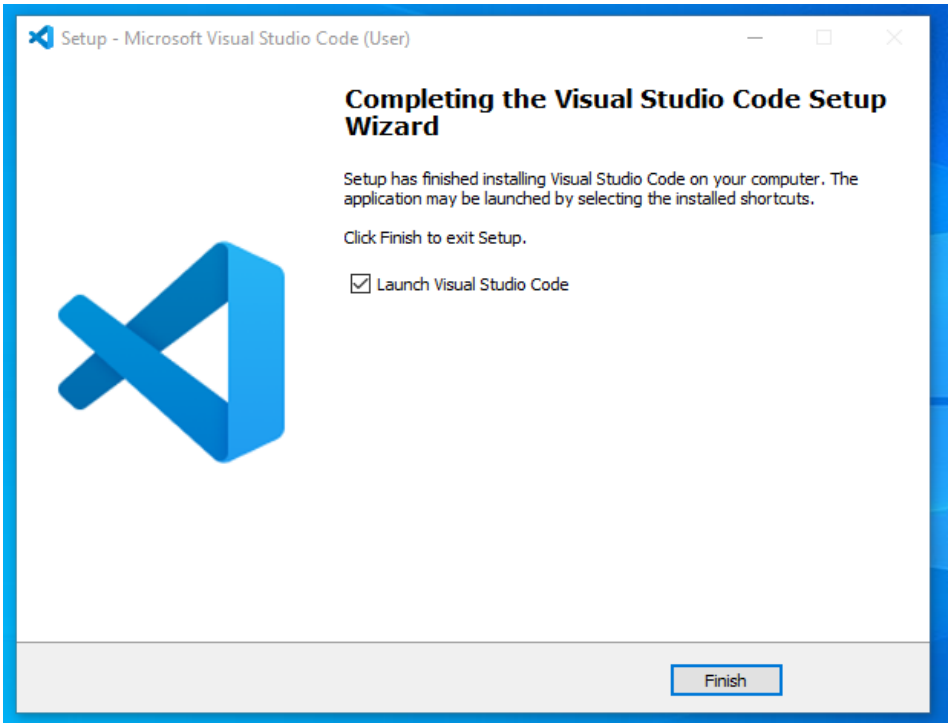

Figure 6.25 Installation Completion

Step 10: After the previous step, the **Visual Studio Code window** opens successfully. Now you can create a new file in the Visual Studio Code window and choose a language of yours to begin your programming journey!

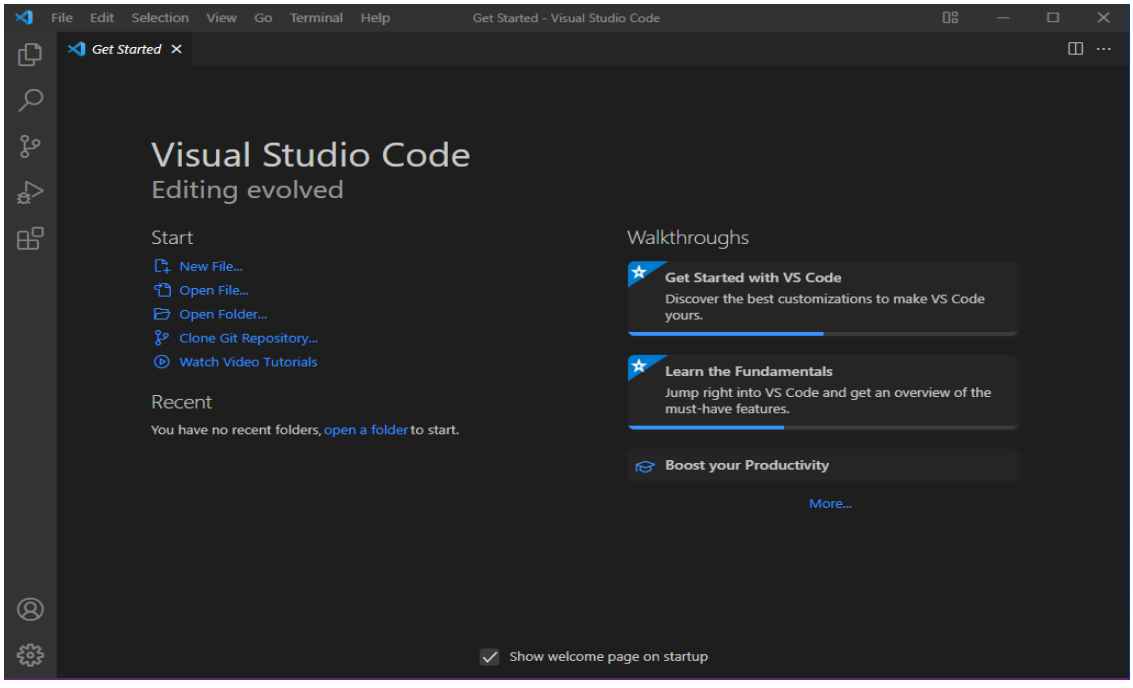

Figure 6.26 Starting Page

So this is how we successfully installed **Visual Studio Code** on our Windows system.

6.5 Database

We have used database to store information of Mechanics as well as users in order to verify during login.

6.5.1 Firebase

Firebase is a product of Google which helps developers to build, manage, and grow their apps easily. It helps developers to build their apps faster and in a more secure way. No programming is required on the firebase side which makes it easy to use its features more efficiently. It provides services to android, ios, web, and unity. It provides cloud storage. It uses NoSQL for the database for the storage of data.

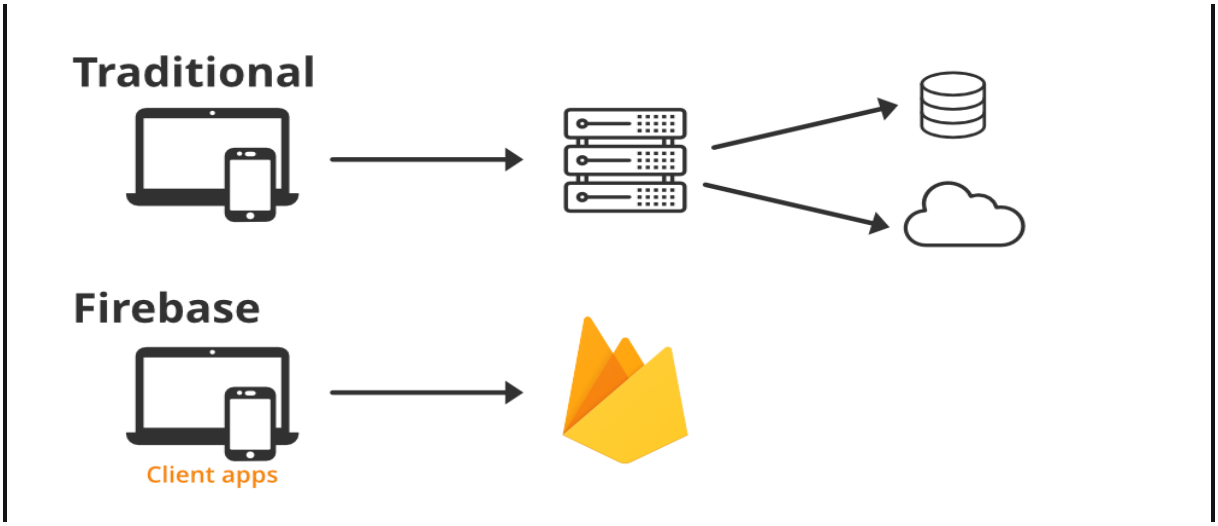

Figure 6.27 Connecting to Firebase

6.5.2 Brief History of Firebase:

Firebase initially was an online chat service provider to various websites through API and ran with the name Envolve. It got popular as developers used it to exchange application data like a game state in real time across their users more than the chats. This resulted in the separation of the Envolve architecture and it's chat system. The Envolve architecture was further evolved by it's founders James Templin and Andrew Lee, to what modern day Firebase is in the year 2012.

6.5.3 Get started with Firebase Hosting

Firebase Hosting gives you a fast, secure, and reliable way to host your app's static assets (HTML, CSS, JavaScript, media files, etc.) as well as to serve dynamic content and host microservices.

Our production-grade hosting is backed by a global content delivery network (CDN). Hosting serves your content over SSL, by default, and can be used with your own custom domain or on your project's subdomains at no cost on web.app and firebaseapp.com.

Before you begin

Before you can set up Firebase Hosting, you need to create a Firebase project.

Step 1: Install the Firebase CLI

Visit the Firebase CLI documentation to learn how to install the CLI or update to its latest version.

Step 2: Initialize your project

To connect your local project files to your Firebase project, run the following command from the root of your local project directory:

During project initialization, from the Firebase CLI prompts:

1. **Select a Firebase project to connect to your local project directory.**

   The selected Firebase project is your "default" Firebase project for your local project directory. To connect additional Firebase projects to your local project directory, set up project aliases.
2. **Specify a directory to use as your public root directory.**

   This directory contains all your publicly served static files, including your index.html file and any other assets that you want to deploy to Firebase Hosting.

   - The default for the public root directory is called public.
     - You can specify your public root directory now or you can specify it later in your firebase.json configuration file.
     - If you select the default and don't already have a directory called public, Firebase creates it for you.
   - If you don't already have a valid index.html file or 404.html file in your public root directory, Firebase creates them for you.
3. **Choose a configuration for your site.**

   If you select to make a one-page app, then Firebase automatically adds rewrite configurations for you.

At the end of initialization, Firebase automatically creates and adds two files to the root of your local app directory:

- A firebase. Son configuration file that lists your project configuration. Learn more about this file on the configure hosting behavior page.
- A .firebaserc file that stores your project aliases.

Step 3: Deploy to your site

To deploy to your site, run the following command from the root of your local project directory:

firebase deploy --only hosting
Note: By running this command with the **--only hosting** flag, you're only deploying your Hosting content and config. If you *also* want to deploy other project resources or configurations (like functions or database rules), run this command with a comma-separated list in the flag (for example, **--only hosting, functions**).

This command deploys your Hosting content and config to the following Firebase-provisioned subdomains:

- *PROJECT_ID*.web.app
- *PROJECT_ID*.firebaseapp.com

6.5.4 SQL (Structural Query Language)

SQL is a database computer language designed for the retrieval and management of data in a relational database. **SQL** stands for **Structured Query Language**. This tutorial will give you a quick start to SQL. It covers most of the topics required for a basic understanding of SQL and to get a feel of how it works.

6.5.5 Why we used SQL?

SQL is Structured Query Language, which is a computer language for storing, manipulating and retrieving data stored in a relational database.

SQL is the standard language for Relational Database System. All the Relational Database Management Systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres and SQL Server use SQL as their standard database language.

Also, they are using different dialects, such as −

- MS SQL Server using T-SQL,
- Oracle using PL/SQL,
- MS Access version of SQL is called JET SQL (native format) etc.

6.6 Cloud Services

6.6.1 Geolocation API

- The **W3C Geolocation API** is an effort by the World Wide Web Consortium (W3C)
- to standardize an interface to retrieve the geographical location information for a client-side device. It defines a set of objects, ECMAScript standard compliant, that executing in the client application give the client's device location through the consulting of Location Information Servers, which are transparent for the application programming interface (API). The most common sources of location information are IP address, Wi-Fi and Bluetooth MAC address, radio-frequency identification (RFID), Wi-Fi connection location, or device Global Positioning System (GPS) and GSM/CDMA cell IDs. The location is returned with a given accuracy depending on the best location information source available.
- The result of W3C Geolocation API will usually give 4 location properties, including latitude and longitude (coordinates), altitude (height), and [accuracy of the position gathered], which all depend on the location sources. In some queries, altitude may yield or return no value

Figure 6.28: Cloud service

6.6.2 Reverse Geolocation API

Reverse-Geocoding is a process used to convert coordinates (latitude and longitude) to human-readable addresses. This is not exactly the opposite of Geocoding. In Geocoding, the Place is associated with a name and fixed coordinates. These coordinates are Double in nature. Negligible change in these coordinates may still refer to the same place, but we shall never get the place name as it is associated with only those fixed coordinates. Therefore, we shall definitely get the complete address in reverse geocoding, but the place name is not guaranteed. Through this article, we will show you an example of how to perform reverse-geocoding in Android.

6.7 User Interface (UI)

6.7.1 Flutter-

Flutter is a free and open-source mobile UI framework created by Google and released in May 2017. In a few words, it allows you to create a native mobile application with only one codebase. This means that you can use one programming language and one codebase to create two different apps (for iOS and Android).

Figure 6.29 Used of Flutter in this Company

CHAPTER-7

ADVANTAGE

- The mechanic will get employment.
- Customers will get easily mechanic service if they are stuck at an unknown place. Where no any vehicles servicing is available nearly in customer
- Clear and affordable price.
- Instant customer support. Using Email WhatsApp phone and massaging.

7.1 User Facilities

- If customers visit our website/app, they have to register very nominal credentials.
- After these things, MechWorld provides mechanics at their current location.
- No need to wait for a Mechanic for long times.
- Free service on certain occasions and discounts from time to time. Prices are than the normal service centre fares.
- Fixed prices for a common part.

7.2 Mechanic Facilities

- The mechanic will have to register and create an account on MechWorld.
- The mechanic will get their portal to see booking orders.
- If the customer will interact with the mechanic area. The mechanic will get a booking notification. They have to confirm the booking.
- An additional source of income.
- Flexible working schedules. Can work part-time or simply whenever they like.
- Easy payment procedure.
- those who love repairing services can earn money while pursuing their hobby.
- Mechworld pays mechanics to be online, even if they don't get any requests.

7.3 User-Friendly app

The online marketplace never closes. These days, if your business is to succeed at engaging and keeping customers, it's essential that the public be able to shop with, learn about and interact with your company 24/7. And since more consumers than ever are using their phones as their primary devices, a well-designed mobile app is a must.

7.3.1 ‘How-To’ Screens

In this day and age, when the user is presented with an endless sea of features, educational or “how-to” screens after the initial download and updates are a definite must-have. Not all users are equally tech-savvy, and it’s best to engage the audience to maximize the use of the newly developed features.

7.3.2 A User-Friendly, Responsive Interface

A mobile app should have a user-friendly interface and be responsive. Customers want to have a seamless experience and clearly understand what to do with the app, which buttons to click and so on. Since there are 3.8 billion smartphone users worldwide nowadays, the app should be adaptable to different screen sizes.

7.3.3 Battery Preservation

There are so many wonderful apps and concepts out there, but if the battery drain is so significant that t

he end-user can’t sustain the life of their device, then those features go to the wayside. As a result, solutions must account for battery-preservation techniques and methods that ensure a prolonged experience and sustained battery life for the end-user.

7.3.4 An Intuitive UX And Clear Privacy Options

Ideally, every app should include an intuitive user experience and optional, highly apparent privacy notifications. The intuitive UX will enhance the consumers’ perception of your brand identity, and the upfront privacy notifications will show you care about your consumers’ data—ultimately further increasing brand affinity. –

7.3.5 A Security-By-Design Approach

Cybersecurity consideration in mobile app development is sorely lacking. To build successful apps, adopt a security-by-design approach. Developers must use shift-left guidelines. This means the entire development lifecycle—from ideation to architecture, execution, testing and release—needs proper security testing. -

7.3.6 Multifactor Authentication

Recognizing that, now more than ever, a balance is needed between data accessibility and data protection, I would argue any business app that provides access to information should be built with multifactor authentication as a standard for validation and user access. It seems irresponsible and short-sighted to attempt to build on sandy land if security isn’t at the heart of your app development.

7.3.7 Scalable Text

Scalable text is not only a best practice around accessibility, it also serves all your users by providing more flexibility for everyone to enjoy the experience in their own way. By adhering to the system-level preferences of the user, you bypass the need for options within your app, and much like the default device language and dark-or-light mode, you are meeting the user where they are. -

7.3.8 Data Collection Opt-Out

You should always include the capability for users to opt out of data collection. User privacy and data security are of the utmost importance. While it may not be as sleek or cool-sounding as other cutting-edge features, giving your users more control over their personal information is an easy way to establish trust and transparency, both crucial components of long-term success.

7.3.9 A Feedback System

It is important that your app include some way for users to provide feedback to you. It should be a quick and easy process for them to report bugs, suggest new features or provide criticism. In turn, you should acknowledge their feedback. Listening to end-users will keep your ear to the ground and let you know what your users want and how to respond to their needs.

7.4 Maintenance and environment:

As the number of computer-based systems, grieve libraries of computer software began to expand. In house developed projects produced tones of thousand soft program source statements. Software products purchased from the outside added hundreds of thousands of new statements. A dark cloud appeared on the horizon. All of these programs, all of those sources statements-had to be corrected when false were detected, modified as user requirements changed, or adapted to new hardware that was purchased. These activities were collectively called software Maintenance. The maintenance phase focuses on change that is associated with error correction, adaptations required as the software's environment evolves, and changes due to enhancements brought about by changing customer requirements. Four types of changes are encountered during the maintenance phase. Correction Adaptation Enhancement Prevention

7.5 ADAPTATION:

Over time, the original environment (E>G., CPU, operating system, business rules, external product characteristics) for which the software was developed is likely to change. Adaptive maintenance results in modification to the software to accommodate change to its external environment.

7.6 ENHANCEMENT:

As software is used, the customer/user will recognize additional functions that will provide benefit. Perceptive maintenance extends the software beyond its original function requirements.

7.7 PREVENTION:

Computer software deteriorates due to change, and because of this, preventive maintenance, often called software re engineering, must be conducted to enable the software to serve the needs of its end users. In essence, preventive

7.8 SOFTWARE METHODOLOGY

The software methodology followed in this project includes the object-oriented methodology and the application system development methodologies. The description of these methodologies is given below

Application System Development – A Life cycle Approach Although there are a growing number of applications (such as decision support systems) that should be developed using an experimental process strategy such as prototyping, a significant amount of new development work continue to involve major operational applications of broad scope. The application systems are large highly structured. User task comprehension and developer task proficiency is usually high. These factors suggest a linear or iterative assurance strategy. The most common method for this stage class of problems is a system development life cycle modal in which each stage of development is well defined and has straightforward requirements for deliverables, feedback and sign off.

CHAPTER-8

REALTIME LOCATION

This chapter introduce how to get Real Time location using google map under section 8.1 and Technology and coverage Options under section 8.2 and RTLS , geolocation under section 8.3 &8.4 and how customer can book mechanic through RTLS.

Figure 8.1 Real-time Location

8.1 Real-Time Location using google map:

A Real Time Location System, better known as RTLS, denotes a group of systems that can determine a person or item's exact or relative position. RTLS is not a specific type of system or technology but is a goal that can be achieved by different types of technology.

RTLS is frequently used in the healthcare industry due to the high importance of the items being tracked. In healthcare, knowing accurate, real-time locations of patients, staff, large medical equipment, or medical carts can make an impact in critical situations. In other industries, a well deployed RTLS can save money, time, or a combination of both. Other industries that commonly use RTLS include manufacturing, transportation, construction, agriculture, logistics, oil and gas, and mining.

Systems that can provide an asset's Real Time Location are made up of a few different components, and the name of each varies depending on the technology. Below are the three most common groupings of components that make up an RTLS

8.2 Technology and coverage Options:

Every system that provides Real Time Location data is unique because of the variety of applicable technologies, system parts, coverage options, and granularity it can offer.

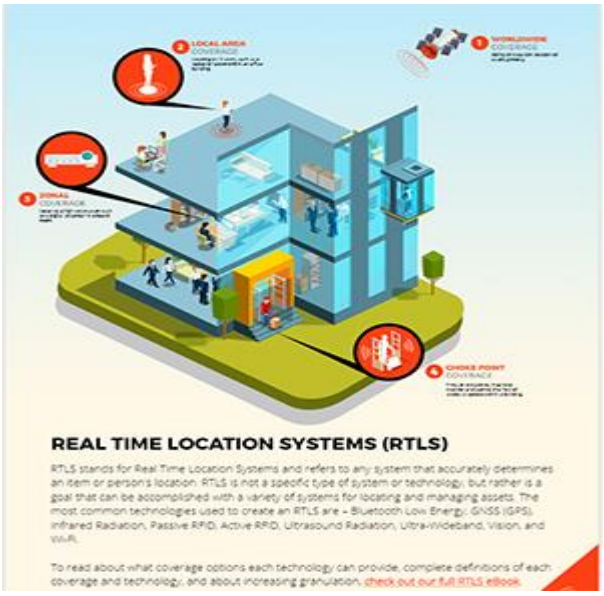

Figure 8.2 RTLS

The most common technologies used to create an RTLS are – **Bluetooth Low Energy, GNSS (GPS), Infrared Radiation, Passive RFID, Active RFID, Ultrasound Radiation, Ultra-Wideband, Vision, and Wi-Fi**. Other technologies are available with the capability of providing Real Time Location coverage, but these have been excluded due to being outdated, generally unpopular, or not cost-effective.

Coverage options available with an RTLS can be classified into a few broad categories, and each technology can provide one or more of these coverages. For instance, GNSS, commonly referred to as GPS, uses satellites to determine the exact location of an item or person based on latitude and longitude coordinates. Because GNSS technology can provide a location on a global scale, it is referred to as Wide Area/Worldwide Coverage.

The categories of RTLS coverage options available are:

- Wide Area Coverage
- Local Area Coverage
- Zonal Coverage
- Choke Points

Deciding the amount of coverage necessary for a potential system is a good place to start when determining the best RTLS for your needs.

To read about what coverage options each technology can provide, complete definitions of each coverage and technology, and about increasing granulation, check out the full eBook here.

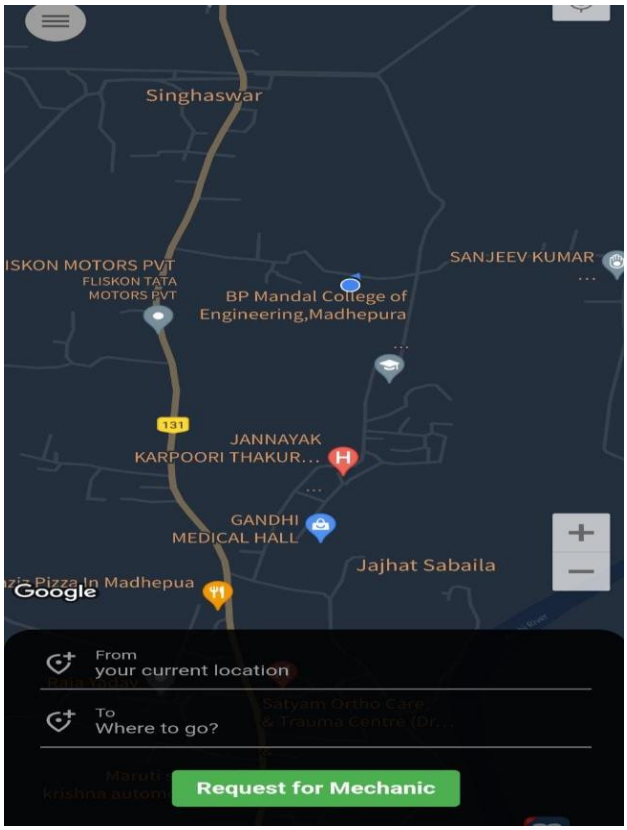

Figure 8.3: Map

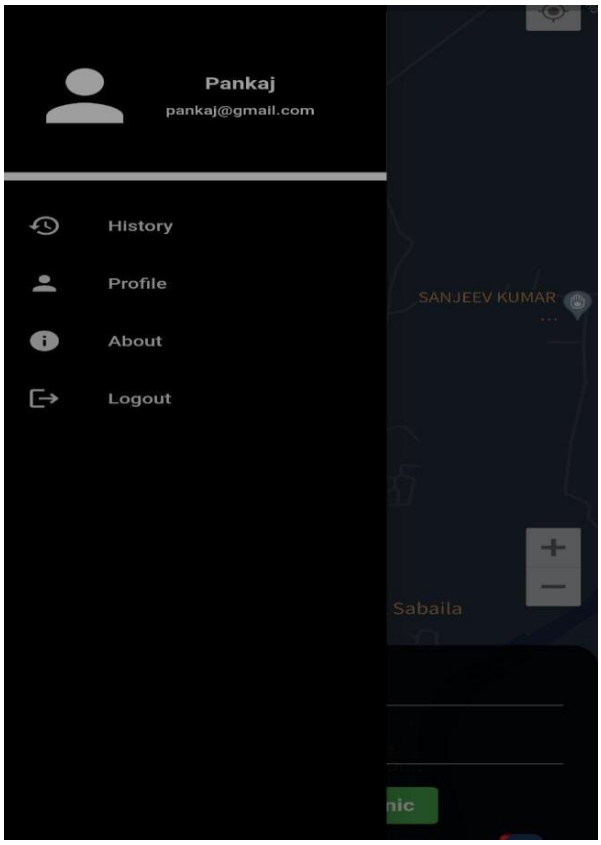

Figure 8.4: Map Menu Bar

A real-time location system (RTLS) is one of a number of technologies that detects the current geolocation of a target, which may be anything from a vehicle to an item in a manufacturing plant to a person. RTLS-capable products are used in an ever-increasing number of sectors including supply chain management (SCM), health care, the military, retail, recreation, and postal and courier services.

RTLS is typically embedded in a product, such as a mobile phone or a navigational system. Most such systems consist of wireless nodes -- typically tags or badges -- that emit signals and readers that receive those signals. Current real-time location systems are based on wireless technologies, such as Wi-Fi, Bluetooth, ultrawideband, RFID, and GPS.

8.3 RTLS applications include:

8.3.1 Fleet tracking: Fleet-tracking RTLS systems make it possible for an enterprise to track vehicle location and speed, optimize routes, schedule jobs, aid navigation and analyse mechanic efficiency.

- **Navigation**: The most basic navigation services provide directions for how to get from Point A to Point B. Incorporating GPS, mapping and mobile cellular technology will enable more complex navigation services.
- **Inventory and asset tracking:** RFID technologies are widely used for asset and inventory tracking. FRID tag communicate wirelessly with RFID readers throughout the enterprise.
- **Personnel tracking:** Different technologies are used for on-site personnel and workers in the field. Systems that track field workers are typically GPS-enabled mobile phones. On-site personnel tracking systems often use RFID technology, such as RFID-enabled badges.
- **Network security**: Wi-Fi Protected Access (WPA) can limit the physical area from which a user can connect to restrict access based on the user's location.

8.4 Geolocation

Geolocation refers to the identification of the geographic location of a user or computing device via a variety of data collection mechanisms. Typically, most geolocation services use network routing addresses or internal GPS devices to determine this location. Geolocation is a device-specific API. This means that browsers or devices must support geolocation in order to use it through web applications.

Geocoding is the process of converting addresses (like "1600 Amphitheatre Parkway, Mountain View, CA") into geographic coordinates (like latitude 37.423021 and longitude -122.083739), which you can use to place markers on a map, or position the map.

8.5 Reverse Geocoding

Reverse geocoding is the opposite process to geocoding, which involves appending latitude and longitude coordinates to address data. With reverse geocoding, software links geographic coordinates to address data.

Reverse geocoding is the process of converting geographic coordinates into a human-readable address.

CHAPTER-9 SILENT FEATURE OF MECHWORLD

- A user can tap his smartphone and call a mechanic at his location or could also book a Mechanic in advance.
- One can have SMS, Email Alerts, and Notifications to Passengers
- Customers can track the Mechanic as he arrives at his location and the Mechanic can also track The exact location of the customer and reach his exact location
- payment procedure is handled by them. In some countries like India, they have even started accepting cash payments that are directly getting to the driver. It's Automated generated e- receipts.
- Can get service History, has Multilingual support

CHAPTER-10 FUTURE SCOPE AND ENHANCEMENT

- It can be extended to add a greater number of mechanic as well as user throughout the country
- In future we can fetch current location user and mechanic by using our own serve
- In future we can make it compatible with another platform
- In future the enhance the database capacity and capability we can use nontraditional database
- In future price tag as well as price negotiation page will be added so that a customer can be decide with technician is suitable economically
- In future user interface can be upgraded through latest technology and make it more user friendly

CHAPTER-11

CONCLUSION

Up to now, we have developed an app of this application that can be further extended in the form of a website over multiple platforms. here Fook support from google to fetch the live location of users and mechanics and used their location to import services in real-time as well as door step of customers. here we mentioned user's and mechanic's information in our local database. our algorithm worked over he data and make it possible to import service of the application's algorithm well work in backend and that will be completely hidden from customer and mechanic.

Our UI is most user friendly so any age group customer can use without any technical knowledge.

Developing an on-demand mechanic booking application makes sure that you have business growth with convenience. You can cover a wide range of niche while taking care of the customer's convenience. Uber for mechanics app can do wonders for your car service business. The first step towards this journey is to understand the entire car application process's working and functioning. You can connect with us and have a clear understanding of how you can launch your application in the market.

Our experts have hands-on experience and a keen interest in developing an on-demand application with flair.

REFERENCES

1. https://cloud.google.com/gcp/?utm_source=google&utm_medium=cpc&utm_campaign=japac-IN-all-en-dr-bkwsrmkt-all-super-trial-e-dr-1009882&utm_content=text-ad-none-none-DEV_c-CRE_498657824124-ADGP_Hybrid+%7C+BKWS+-+EXA+%7C+Txt+~+GCP+~+General_google+cloud+console-KWID_43700037527390311-kwd-55675752867&userloc_1007749-network_g&utm_term=KW_google%20cloud%20console&gclid=Cj0KCQjwkruVBhCHARIsACVIiOyIatqjMyuMsuHsc5OTLfzXVwNsrBVqIx4Wyl4lA3wWvFAIT2qvDEEaAm2xEALw_wcB&gclsrc=aw.ds
2. http://excelpublication.com/wp-content/uploads/2021/08/Dr-Kailas-Arjunrao-Thombre-Dr.-Sannake-A-1.pdf
3. https://firebase.google.com/?gclid=Cj0KCQjwkruVBhCHARIsACVIiOxamOd1hHVbyADj-9fRwwbC44xhfVkbYBjoSSLBVmaYaEqtdEBCFfEaAoRrEALw_wcB&gclsrc=aw.ds
4. https://www.pngwing.com/en/free-png-yyxnj
5. https://pngimg.com/uploads/gps/gps_PNG29.png
6. https://www.flaticon.com/premium-icon/database_2383158?term=database&page=1&position=5&page=1&position=5&related_id=2383158&origin=tag
7. https://pub.dev/
8. https://www.geeksforgeeks.org/how-to-get-current-location-in-android/