

## SMART CITY TRAVELLER

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DOI: <https://www.doi.org/10.58257/IJPREMS33352>

### ABSTRACT

Android Smart City Traveller Project aims to improve tourism in smart cities by developing mobile applications for the Android platform. Travelers and tourists spend a lot of time planning and deciding how to make the most of their trips. In this context, the application aims to support the development of travel advertising for travelers by determining the basic needs of the computer using a simple mobile application. Generally, most of the travelers like to visit famous places and the unique local charm of that place. To achieve this, we offer a system that automatically displays travel plans and times to users. The app also lets you decide where to go faster. This guide is designed to help anyone who is new to the city or wants to explore the city on a special occasion. Users are required to enter their preferences and preferences when registering. After creating an account, users can choose a location or allow the system to capture their current location as the start and end of their trip.

**Keywords** - Travel, Planning, User needs, Google Maps API, Ionic Framework, Firebase.

### 1. INTRODUCTION

Nowadays tourists and travelers often spend a lot of time planning and deciding on their trips to reach the maximum. In this context, the application aims to identify the basic needs of supporting travelers in marketing campaigns through an easy-to-use mobile application. Generally speaking, most tourists prefer to visit local special places and famous places. To achieve this goal, we offer users a system that automatically displays their travel plans and schedules. The application also decides to access the site faster.

This system is designed to help travelers who are new to the city or anyone who wants to explore the city at a specific time. Users are required to enter their preferences and preferences during registration. After creating an account, users can choose a destination or allow the system to capture their current location as the start and end of their trip. Then the start and end time of the journey must be specified by the user. Since all user trips are recorded, previous trips can be viewed. Smart City Explorer, as the name suggests, intelligently evaluates the user's interests and preferences, as well as the time the user is willing to explore a place, and creates travel plans and routes for himself, including the best tourists around. Choose a location and easily return to the starting point for the last time. This uses the shortest path algorithm to determine the path. Generally speaking, most tourists are attracted to famous attractions and the unique charm of the local area. place.

To achieve this, we recommend using a system that automatically displays the route and prepares it for the user. Electricity also allows you to choose where you want to go faster and enjoy it.

### 2. REQUIREMENT ANALYSIS

TECHNOLOGIES USED :-

ANDROID STUDIO as a tool for creating applications, clients and Admin end. The XML language is used to create screens (user interfaces) of Android applications. Java language is used as listener to access user context. API<sup>TMS</sup> (Application Programming Interface) is developed and implemented in Android studio to communicate with the server. All databases will be stored in SQLITE databases.

**Hardware Requirements :-**

Mobile Application

- Processor - 1GHz and above
- Battery - 1200mAh and above
- RAM - 512 MB and above
- Memory - 2 GB and above

#### Required Software :-

- Operating system : Windows 7 Ultimate and above
- Coding Language : JAVA
- Front-End : XML
- Data Base : SQLITE
- Software Android studio

### 3. LITERATURE REVIEW

Android is a widely used mobile operating system that provides a range of functionalities to its users. In this literature review, we will explore some of the key functionalities of Android that make it a popular choice among users and developers alike. Android is a widely used mobile operating system that provides a range of functionalities to its users. In this literature review, we will explore some of the key functionalities of Android that make it a popular choice among users and developers alike. Android is a widely used mobile operating system that provides a range of functionalities to its users. In this literature review, we will explore some of the key functionalities of Android that make it a popular choice among users and developers alike. Android is a widely used mobile operating system that provides a range of functionalities to its users. In this literature review, we will explore some of the key functionalities of Android that make it a popular choice among users and developers alike. Android is a widely used mobile operating system that provides a range of functionalities to its users. In this literature review, we will explore some of the key functionalities of Android that make it a popular choice among users and developers alike.

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Android is a widely used mobile operating system that provides a range of functionalities to its users. In this literature review, we will explore some of the key functionalities of Android that make it a popular choice among users and developers alike. The path planning of scenic tourism is a relatively new research field. Overview of Travelers in Smart Cities In recent years, the concept of smart cities has gained significant attention worldwide. A smart city leverages advanced technologies and data-driven solutions to improve the quality of life for its residents and visitors. Travelers play a vital role in the smart city ecosystem, as they contribute to the economic growth and cultural exchange of the city. With the increasing popularity of travel and the rise in smartphone usage, there is a growing demand for mobile applications that cater to the needs of travellers in smart cities.

**Overview of Smart City Travelers** : - In recent years, the concept of smart cities has attracted the attention of many people around the world. Smart cities use technology and data-driven solutions to improve the quality of life of residents and visitors. Travelers play an important role in the smart city ecosystem as they contribute to the city's economic growth and cultural exchange. As travel becomes more popular and smartphone usage increases, the need for mobile applications that make urban travelers smarter also increases.

Travellers' Requirements in Smart City Travel Apps Travelers in smart cities have specific requirements and expectations from travel applications. These requirements go beyond general information and include features that enhance their travel experience. One of the primary challenges faced by travellers is navigating an unfamiliar city and finding efficient transportation routes. They also seek information about local attractions, events, dining options, and cultural experiences. Additionally, travellers are interested in personalized recommendations and suggestions based on their preferences and interests. Meeting these requirements can greatly enhance the usability and effectiveness of a smart city travel app

**Travelers need to travel to smart cities** :- Smart City travelers have special rights and expectations regarding travel practices. These requests go beyond general information and include features that will enhance travel experiences. One of the biggest problems travelers face is navigating the unknown city and finding good transportation. They also seek information about local attractions, activities, dining options and cultural experiences. In addition, travelers can benefit

from personalized recommendations and recommendations based on their interests and preferences. Following these rules can increase the usability and effectiveness of smart city travel applications.

**Android Platform for Smart City Travel Apps** The Android platform has emerged as a dominant player in the mobile app market due to its widespread adoption and open-source nature. Android devices offer a range of features, including high-performance capabilities, extensive customization options, and a large user base. These factors make Android an ideal platform for developing smart city travel applications. Android apps can leverage the platform's advanced functionalities, such as GPS, location services, and real-time data integration, to provide seamless and personalized travel experiences to users.

#### **Android Platform for Smart City Travel Applications :-**

The Android platform has become a major player in the mobile applications market due to its widespread use and open structure. Android devices have many features including high performance, extensive customization options and large user base. These factors make Android the best platform for developing smart city tourism applications. Android apps can use the platform's advanced features such as GPS, location services, and real-time data integration to deliver interactive and personalized travel experiences to users.

**Android Platform for Smart City Travel Applications :-** Android platform has become a major player in the mobile application market due to its widespread use and open structure. Android devices have many features including high performance, customization options and wide users. These factors make Android the best platform for developing smart city applications. Android applications provide users with seamless and personalized travel by using the platform's advanced features such as GPS, location assistance and instant data integration.

**Working of the application :-** Users have asked some questions Group studies filter when searching for places, places are shown on the map, giving ideas about moving away from the place and going from one place to another, from the starting point to the final location. The user will also be asked if they would like to visit an adventure park, water park, temple, or have a coffee, and will be shown options based on the place's ranking and review. Since the traveler might be a new city and doesn't know any place, in the map view, if the user clicks on the marker, he/she can see the ratings and comments from br> br. > Foursquare itself. The best thing is that the user is also sent an email with information about their plan. The system always requires an internet connection for the app to work properly. Since the traveller may be new to the city not knowing any place, in the map view if the user clicks on the marker, he/she can see the ratings and reviews which are recorded from the Foursquare itself. The best thing is that the system will also forward a mail to the user containing information about his/her plan. The System requires a working internet connection all the time f How Location Detection works in android Android Studio provides several ways to detect a device's location, including GPS, Network Location Provider, and Fused Location Provider. GPS: Android devices have a built-in GPS chip that can be used to determine a device's location. The GPS system works by using a network of satellites to triangulate a device's location. Network Location Provider: Android devices can also use network-based location detection, which uses information from cell towers and Wi-Fi access points to determine a device's location. This method is not as accurate as GPS, but it can provide a rough estimate of a device's location. Fused Location Provider: The Fused Location Provider is a combination of the GPS and Network Location Provider methods. It provides the best possible location accuracy by using both GPS and network-based location detection methods.

**How location tracking works on Android :-** Android Studio offers several ways to determine the location of the device, including GPS, Network Location Provider, and Fusion Location Provider. GPS: Android devices have a built-in GPS chip that can be used to determine the device's location. GPS systems work by triangulating a device's location using a network of satellites. Network providers: Android devices may also use network-based location sensing, which uses data from mobile phones and Wi-Fi access to determine content, device location. This method is less accurate than GPS but can provide a rough estimate of the device's location. Fusion service provider: Fusion service provider is a combination of GPS and network service providers. It provides the best location accuracy using GPS and network-based location tracking.

**Controlled Model View** The Control-Model-View (CMV) metaphor is used for software design in the Smart City Traveller application. The Control represents the "user" input and timed events within the software game. In Android programming, the Control is the "Main Activity" that first opens on execution of the program. Model represents the data structure of the objects and the functions that govern the flow of logic and action in an application. The View retrieves positions, orientation, data, and graphics from the Model and draws them on the screen.

**Control Model View :-** Control Model View (CMV) example is used for software development in Smart City Traveler application. Controls represent the "user's" input and program in software games. In the Android operating system,

control is the first "main function" that opens when the program is run. Models represent data models of objects and functions that control the logic and operation of an application. Get locations, directions, information, and sketches from the model and draw on the screen.

**Map View** When the user has selected the venue, all the venue locations, along with the current location are shown on the map. For this, GoogleMaps. Direction API is used. The API returns the most efficient routes when calculating directions. Travel time is the primary factor optimized, but the API may also take into account other factors such as distance, number of turns and many more when deciding which route is the most efficient

**Map View** : - When the user selects a location, all addresses and available locations are displayed on the map. Google Maps for this. Use API instructions. The API returns the best method when calculating the expression. Travel time is the most important factor for optimization, but the API takes into account distance, number of roads, etc. when deciding which route to choose. It will also take into account other factors such as.

**API Usage** : - API level is a numerical value that indicates different API updates from the Android platform version. The Android platform provides an API framework that applications can use to interact with the Android platform. Framework API includes : Core set of packages and classes.

**Foursquare API** :- Foursquare API is a proven data source that allows developers to access data on millions of locations and interests around the world. It provides a comprehensive site database with details such as site names, locations, categories, ratings, reviews, photos and more. On Android, developers can use the Foursquare API to integrate workplace into their applications. For example, they can use the API to search for nearby places based on the user's location, display the details of the place, and allow users to review or comment and prescribe. Foursquare API provides many endpoints and parameters to customize search and store location information.

**Google Maps API** The Google Maps API is one of those clever bits of Google technology that helps you take the power of Google Maps and put it directly on your own site. It lets you add relevant content that is useful to your visitors and customise the look and feel of the map to fit with the style of the site. The API automatically handles access to Google Maps servers, data downloading, map display, and response to map gestures.

**Google Maps API** :- Google Maps API is one of the smart Google technologies that helps you leverage the power of Google Maps and display it directly on your website. It allows you to add useful content to your audience and adjust the look and style of your report to match your website's style. This API accesses Google Maps servers, downloads information, maps, and responds to map pins.

**Geocoding API** :- Geocoding is the process of converting addresses (such as street addresses) into geographic coordinates (such as latitude and longitude) that you can use to place symbols on a map, share, or view a map. Reverse geocoding is different from geocoding. Reverse geocoding converts coordinates into street/location addresses. This API is widely used in Android Smart City Traveler to translate addresses.

## 4. PLANNING OF WORK

### 1. Design principles

In order to be effective in design, the following points are taken into consideration. These decisions include :-

I. If you want to go to Kashmir and there are not many queues and you are coming for the first time, it will be difficult and correct to talk to the tour guide or driver Costly >.

II. Our Android travel guide will offer you the best and shortest route to your chosen destination and offer the shortest route. It will also show you the best places to visit in your chosen area.

III. You can choose the advice that suits you best.

### 2. Functional model of Android as a travel guide

UML use case of Android as a travel guide. Everyone involved in the system is described in detail here. Get the departure and destination from Google Maps on Google Play services, then follow the route saved in the file and check the current location on Google Maps.

### 3. Design Model

The object model is represented in UML by a class diagram that defines the structure of the Android language as a description of objects, properties, entities, and work. A diagram of a planning process describes the process group, its components, functions, and their relationships. In UML, classes and objects are defined by blocks consisting of three parts. The top pane shows the name of the category or item. Properties appear in the middle pane, and properties appear in the bottom pane. Projects and tasks may be removed for clarity. This diagram describes the behavior of the process defined by activities. Activities are structures that represent the completion of tasks. Completion of a game may result

from the completion of other activities, possessions, or external events. The scheme of the notification application shows the activities related to the proper management of the road. Rounded rectangles represent activities arrows between events represent controls, and thick bars represent combinations of controls.

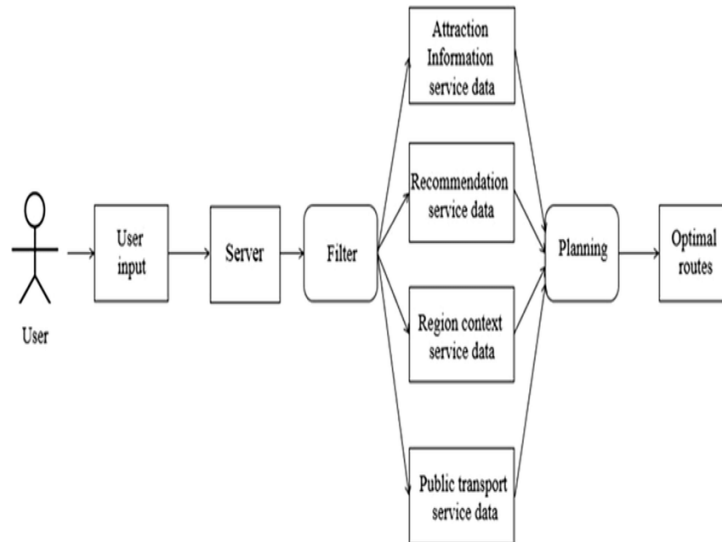


Fig.1 Architecture Diagram

## 5. CONCLUSION

Since travelling is one of the important aspect today, it is very necessary that proper planning need to be done beforehand in terms of time management. Most people without using the latest technology waste a lot of time just planning trips. So, an application like Smart City Traveller really helps tourists to utilize their precious time to the fullest and also enjoy their trip at the same time.

## ACKNOWLEDGMENT

In the exciting journey of bringing the Smart City Traveler app to life, we, as the Smart City Traveler team, would like to express our gratitude to everyone who contributed with their expertise, passion and dedication to making the project a reality. Each team member played a key role in making Smart City Traveler's innovative and user-friendly platform the platform it is today.

We would also like to express our gratitude to our mentors, advisors and everyone who provided guidance and support throughout this project. Your wisdom and courage bolster our resolve and encourage us to push the boundaries of innovation.

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