# Trekvisor
# Enhancement of Trekking Experience & Convenience using Android App

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*Abstract-* **In the age of mobile communications and social media, users are connected to interact with other people, and often obliged to be socially active as technology drives to connect us. In this project, we harness the technology for the helping people during trekking activities. We have developed the concept of a trekking application (app), in which users can get particular trek information, time to time weather forecasting, live location etc. In addition, to make the application react to dynamic changes in the environment, we developed a mobile application prototype that provides all these features by getting data from varied number of sources. In addition to the concept design and the functional prototype, we present findings on people's, especially hikers, need for solitude, and introduce user feedback from each stage of the prototype design process as well as design recommendations for a social navigation application. This system is made, so that customer can easily book ticket for all packages of tourist place such as hills, trekking, adventures, spirituals. The project 'Trekvisor' is developed to replace the currently existing system, which helps in keeping records of the customer, details of destination. It saves the precious asset that is time, and also accuracy, reliability and uniformity can be maintained. This project is useful for the manager of the company as it helps them to search the data faster than existing system, to get customer record easily and report of the customer payment, etc are generated as per requirement. Details of different types of tours which include tours like family tours, couple tours, general tours, date and time of departure and the fair of the tours etc are maintained. Through this app we can provide different types of travel facilities to the customers. This app provides everything related to it itineraries**

*Keywords:* **Android App Development, GPS, Google Maps, Weather API, GCM.**

## I.INTRODUCTION:

The past decade has witnessed the rapid raise of mobile communications and social media applications, which lets us be connected with other people virtually always and everywhere. Many mobile applications are designed to exchange information between people and bring them closer together by digital means.

With increased use of mobile phones and ever-evolving mobile Internet access, people are nowadays more connected than ever. For instance, smart phone users are reported to spend the average of an hour daily using apps. Following this trend, mobile map and travel applications are one of the most popular application categories in various online application stores for mobile devices.

Classical location-based services (LBS) are taking advantage of this fact by providing more and more social services and add-ons. These range from commercial applications such as Foursquare, Google Latitude, (recently merged into Google Plus), or other friend-finding services to research prototypes.

However, it has also been reported that users sometimes wish to be unavailable and disconnected, and purposefully avoid responding to communication attempts. In this project, we want to more closely examine people's wishes and behaviour on seeking solitude, focusing on the specific context of hiking.

This application is used to book a tour from anywhere in the world by a single dynamic website which will help the user to know all about the places and tour details in a single place. Nearly Everyone goes on a vacation, for this 'Trekvisor' would play a vital role in planning the perfect trip. The tourism management system allows the user of the system access all the details such as location, weather, etc.

## II.PROBLEM DEFINITION

The particular area of studies shall be focused on the environment and the needs of trekkers in Maharashtra. Research would be done to gather more information and requirement through trusted sources such as the officials, professional trekkers and research related to trekking and its information. The project is concerned on developing an android mobile application to consolidate these sources of information into a single application that contains all of the gathered information. The scope of study would be on:

1. Problem faced by trekkers in Maharashtra due to unavailability of mountain trekking trails.
2. Study on the current available mobile application consisting of relevant platforms, functionalities and supporting technologies.
3. Develop an Android Mobile application on mountain trekking that could serve as a single source of information to accommodate the needs and requirements of mountain trekkers.

### III. LITERATURE SURVEY

Kray et al. [1] compared different wayfinding visualization techniques on a mobile phone, and found out, e.g., that people used the 3D virtual world representation to compare the view to their surroundings and orientate themselves.

May et al. [2] report that in their study on pedestrian navigation, landmarks were the most used category of navigation aids, when compared to distance, junctions, and street names or numbers.

Schöning et al. [3] used content mined from Wikipedia to automatically generate location-based audio stories between different POIs.

Hile et al. [4] combined landmark-based navigation with geotagged photos, which are shown to the user on the mobile phone screen together with instructions with direction.

Kenteris et al. [45] is a paper that focuses on the evaluation of research and commercial applications which are used by tourists (and not only) to get information, navigation, guidance or just cultural information using a mobile device. It classifies these applications "using a detailed set of evaluation criteria to extract design principles". This includes parameters such as the architecture/network infrastructure, input/output modalities and position/map technologies.

Karanasio et al. [43] is another secondary study used as reference. In this paper the authors propose a frame of reference for the categorisation of mobile tourism applications (not exclusively tour guides) and a framework for evaluating mobile tourism applications. This framework includes parameters such as customization and the type of service delivered.

Borràs et al. [11] review a number of MTGs (named as intelligent tourism recommender systems) according to their interfaces and functionalities, but also according to the type of recommendation techniques and artificial intelligence techniques used by these systems. Additionally, this article also provides some guidelines for the development of future MTGs.

Finally, Gavalas et al. [37] is an article that reviews mobile recommender systems in the 14 2.3. RELATED WORK subject of tourism. In this article we find classification propositions for these systems according to the services offered, based on the architectural style of the system, based on the degree of user involvement and based on the criteria taken into account for deriving recommendations.

### IV. METHODOLOGY

1. The trekking app consists of various modules and is developed in Android Studio.
2. The language used for development is java.
3. Trek Info module displays information regarding selected trek.
4. Live Location Module provides live location of the user which can be shared.
5. Trek maps are one of the part of trek info module and shows a profound map of the respective trek.
6. Weather forecasting APIs are also added to the system.
7. Nearby facilities can be viewed for availing services during trekking.
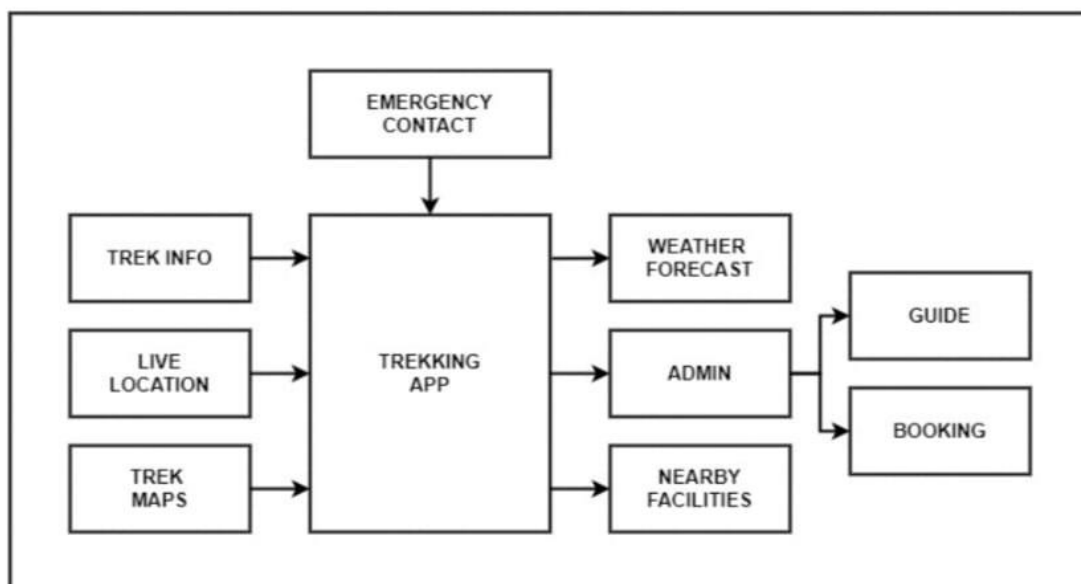8. Admin can assign guide and take bookings in the app.



**Fig. DFD level-0 Diagram**

### V. TECHNOLOGY

**ANDROID APP DEVELOPMENT:**

Android is an open source and Linux-based operating system for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies. This tutorial will teach you basic Android

programming and will also take you through some advance concepts related to Android application development. Android programming is based on Java programming language. Android Studio is the official IDE (Integrated Development Environment) for Android app development and it is based on JetBrains' IntelliJ IDEA software. All non-Java virtual machine (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 and 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.

**GPS:**
GPS (Global Positioning System) is a satellite network-based system that provides navigation, positioning, and timing services. As all modern smartphones have a built-in GPS module, this technology has managed to achieve wide adoption in mobile app development. Today GPS-powered tools are applied for building not only navigation solutions but also a wide range of other software products that are intended for offering location-based features. Today a wide range of mobile applications are enriched with geolocation features. While for some apps these features are a core functionality (such as navigation GPS app solutions), in other cases geolocation data helps to ensure a better, more highly personalized user experience.

**Google Maps:**
Android allows us to integrate google maps in our application. You can show any location on the map, or can show different routes on the map etc. You can also customize the map according to your choices. Android provides facility to integrate Google map in our application. Google map displays your current location, navigate location direction, search location etc. We can also customize Google map according to our requirement.

**Weather API:**
An API (Application Programming Interface) is a function that allows applications to interact and share data using various components and microservices. Weather API provides a fast and elegant way to fetch weather data. An app that will find the device's location coordinates (longitude and latitude). Then we will send this data to the API via an API key (which we will see later). The API will send us a JSON from which we will extract the required data that is the temperature and city of the location.

**GSM:**
GSM (Global System for Mobile communication) is a digital mobile network that is widely used by mobile phone users in Europe and other parts of the world. GSM uses a variation of time division multiple access (TDMA) and is the most widely used of the three digital wireless telephony technologies: TDMA, GSM and code-division multiple access (CDMA). GSM digitizes and compresses data, then sends it down a channel with two other streams of user data, each in its own time slot. It operates at either the 900 megahertz (MHz) or 1,800 MHz frequency band. GSM, together with other technologies, is part of the evolution of wireless mobile telecommunications that includes High-Speed Circuit-Switched Data (HSCSD), General Packet Radio Service (GPRS), Enhanced Data GSM Environment (EDGE) and Universal Mobile Telecommunications Service (UMTS).

## VI. CONCLUSION
In the present system a customer has to approach various agencies to find details of places and to book tickets. This often requires a lot of time and efforts. A customer may not get desired information from these offices and often the customer maybe misguided. It is tedious for a customer to plan a particular journey and have it executed properly. The existing system is manual based and need lot of efforts and consume enough time. In the existing system we have to use various other required resources for considering a location for tourism which consumes lot of time and can result in variable or improper information. It may lead to improper planning of tourism as well as lack of information such as real time weather forecast, tourists live location and the suggestions of most popular treks based on the greatest number of bookings done. The existing system does not deal with tourists booking status.

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