

TOGOTU

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ABSTRACT

The paper explores a mobile tour guide application that harnesses cloud computing, machine learning, and Augmented Reality (AR) to elevate tourism experiences. This cutting-edge app seamlessly directs users to their destinations via optimal routes while recommending noteworthy attractions enroute. Furthermore, travelers can indulge in narrated descriptions of landmarks as they follow suggested paths. Among the two AR features available, one facilitates directional navigation toward attractions, which is particularly beneficial from elevated viewpoints. It furnishes users with insights into multiple attractions simultaneously, accompanied by pertinent details. Additionally, the AR's 3D object modeling feature enriches the Point of Interest (POI) experience, offering immersive encounters with landmarks.

Keywords– Cloudcomputing ,Machine learnig,Tourism experiences,Augmented reality

I. INTRODUCTION

Nowadays, there's a steady improvement in people's consumption structure, leading to a significant increase in recreational tourism. Tourism stands out as the largest and most robust industry globally, contributing approximately 11% to the global gross domestic product (GDP), employing 200 million individuals, and serving 700 million tourists worldwide. This figure is projected to double by the year 2020. Despite the abundance of travel information available on the Internet, tourists often struggle to access timely information while on the move. Thus, our aim is to develop a mobile tourist guide system using mashup technology to address this issue. Today there is no place for errors, so as to make for a job.[1]

Recent advancements in mobile services incorporate location-aware features, enhancing user experiences. A plethora of mobile applications, many of which are location-centric, have emerged. Location-dependent services, vital for addressing location-related queries, are becoming increasingly prevalent as part of context-aware applications[2]. These services include obtaining local information such as traffic conditions and navigation messages, as well as querying the surrounding environment for nearby amenities like restaurants. We will outline the design, implementation, and deployment of a location-based application named Smart Travel Guide, utilizing mobile phones as the platform. This application enables users to access tour guidance information anytime, anywhere. Notably, tourist data can be browsed or queried through Internet map services like Google Maps.[3]

The mobile client's current location serves as crucial information for location-related systems. Mobile phones must periodically report their locations to remote servers to facilitate suitable queries. While the simplest method for locating users involves manual input of their location, this approach demands extra effort from users. Alternatively, users can be located using various positioning systems. GPS, a ubiquitous feature in modern mobile devices, has revolutionized transportation systems globally by providing accurate location information, including latitude, longitude, and altitude.[4] With GPS modules increasingly prevalent in current mobile devices, users' locations can be pinpointed with high accuracy. searching for right candidates and the prospective candidates are searching for right companies for growth opportunities.so that we can provide a best featured togotu tour guide app for our users[5].

II. LITERATURE SURVEY

M. S. B. W. T. M. P. S. B. Thennakoon [1] developed a app TOURGURU which uses cloud computing, machine learning and Augmented Reality for tourism. These AR features are useful to tourists to find direction a certain attraction is while receiving interesting facts about them. This proposed product mainly focused on AR feature which helps the tourist to find directions and 3D object modelling that helps the user to get the experience of point of interest.

Alexander Smirnov [2] illustrated the category classification of mobile travel applications (Android and IOS). In that most interesting category is "Travel Guides" that combines Information Resources and Location Based Services. He proposed application Tourist assistant-TAIS that is related to Travel Guides category. The information about attractions is extracted from different internet sources.

Ricardo Anacleto [3] proposed a mobile application to provide personalized sightseeing tours, which provides recommendations about point of interests to visit based on tourist preference and suggests visit planning. Other features like to record the tourists moves and tasks to help in presenting the filed experiences.

Aleksey Varfolomeyev [10], narrated the Smart Space based recommendation Service for Historical Tourism. To promote regional historical and cultural tourism as to design special recommendation services for trip developers. The smart space approach employs multi-agent, event-oriented methods of service design with central information hub.

Joan Borrás [4] did survey on Intelligent tourism recommender system, this survey provides some guidelines for the construction of tourism recommenders and outline the promising areas of tourist sites. This survey focused on tourism recommender systems that employ Artificial Intelligence (AI) techniques.

III. PROPOSED METHODOLOGY

The system is designed around two main components, the mobile application and the web server. The web server serves the stored information through the mobile application. The data from the Global Positioning System (GPS) is used to provide location information to the mobile device. "Google Maps" is used where map based services are required. The application may utilize wireless connectivity where available or 5G services to access the central web server

through the Internet. The user interacts with the mobile phone to access the tour guide information. The web server serves the correct information based on the location information and the user selections. This architecture provides high level of flexibility to provide up to date information to the users on request. External database provides a single point of update to the system and reduces the size of the application. Having a light weight application increases the systems usability and reliability. The mobile application is designed to operate in two modes; "Map view" and "Camera view". Map view provides three main functions, Path selector, Information provider and Virtual tour. Map view is developed using the Google Maps API. By selecting the interesting places marked on the map, the user is able to get access to the stored information. The application is able to provide this information while the user visiting the place or as off-site information. The camera view takes advantage of the built in camera of the mobile device and requires GPS location information to be available. In this mode of operation, the application uses the GPS information and the built in magnetometer (compass) to provide Augmented Reality related features.

2.1. Virtual Tour

Tourists have the option to utilize the virtual tour functionality to explore various locations before embarking on their trips, immersing themselves in a complete 360-degree view of each site. They commence their journey at the entrance and follow directional cues to traverse through the virtual landscape, providing them with a preview of the destination prior to their physical visit. Composed of an extensive collection of images captured on-site, meticulously refined, and seamlessly integrated, the virtual tour delivers a realistic three-dimensional representation of the location. This captivating immersive experience holds significant appeal for tourists, potentially igniting their curiosity to discover the destination firsthand.

2.2. Location Identifier

Location-based tagging, a recent technological advancement, enhances Augmented Reality (AR) applications by tagging interesting locations via their GPS coordinates as "points of interest." Using GPS and the built-in compass, the application facilitates camera view and location tagging. In camera mode, GPS data collection begins, and when a user approaches within a 50-meter radius of a tagged location, a notification appears on the mobile device signaling the proximity of the point of interest. Leveraging the built-in compass,

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users are guided directly to the tagged location, simplifying the process of locating points of interest.

2.3. Map based path selector

In Map view, users can navigate using a map interface. Upon specifying the start and end locations, the application presents all available routes to reach the designated destination. Users can choose their preferred route from the displayed options. Once selected, the chosen path is highlighted by the application, along with any points of interest along the way. This functionality is achieved by adding an overlay to Google Maps through the override of the draw method in the "Map Overlay" interface.

2.4. Information Provider

This feature offers details about significant locations along with an audio description for each place. It serves as a convenient tool for accessing comprehensive information about points of interest either before a planned visit or while on-site, eliminating the need to sift through extensive printed materials. Tourists can listen to these descriptions while immersing themselves in their surroundings. Utilizing the Android platform's text-to-speech engine and the SVOX mobile voices, textual information stored in the database is dynamically converted into audio in real-time.

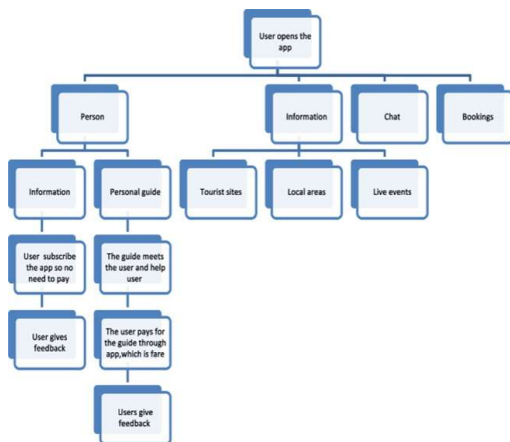


fig.1.flow chart of TOGOTU interface

User:

When the user open's the app he will go to the interface of app.He selects an option which he want.

Person:

user sees the option person,where he needs the help of a person either to collect information or to book a guide. Here user has 2 options

Information through guide:

Here user only collects information from our guide through phone call or chat.
(user don't have to pay for guide)

Personal Guide:

Here user book a guide to explore tourist area more comfortably.

(Our app will give fair charges for a trip)

Information:

Here user selects information option to know about a particular place through our app data.

There are more options like Tourist sites,Local areas,Live events in Information tab.

Map:

User can search for the required destination.

Tourist sites:

if user searches a place then he can see the tourist areas of that places.

Local areas:

The user can also gather information of local areas surrounding the tourist site

Live events:

The user can see the live events of an ongoing event at tourist site.

Chat:

The user can use this chat option to chat with other users as it is an open chat

Bookings:

The user can use this booking option to book hotels,flights,Buses etc..

IV.SOFTWARE REQUIREMENTS

The software requirements for the system are as follows:

Android Studio is Google's official integrated development environment (IDE) for Android app development. It offers a suite of tools including a powerful code editor, layout editor, and performance profiling tools. Built on the IntelliJ IDEA platform, it supports both Java and Kotlin languages. With features like Gradle-based build system, emulator for testing, and seamless version control integration, Android Studio simplifies the entire development process. It empowers developers to design, build, test, and debug Android applications efficiently, making it the go-to choice for millions of developers worldwide.

Visual studio: Visual Studio Code (VS Code) is a popular and powerful code editor that is widely used by developers for various programming languages, including Python and web development frameworks like Django. When working on a Django project with Visual Studio Code, there are several features and

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extensions that can enhance your development experience.

Java is a high-level, object-oriented programming language renowned for its platform independence and versatility. Developed by Sun Microsystems (now owned by Oracle), it's widely used in web, mobile, and enterprise applications. Java's syntax is intuitive and readable, promoting ease of learning and maintenance. Its robust standard library provides comprehensive functionality for various tasks. Java's "write once, run anywhere" principle allows programs to run on any device with a Java Virtual Machine (JVM), enhancing portability. It supports multithreading, exception handling, and dynamic memory allocation, enabling efficient and scalable software development. Java remains a cornerstone in the programming landscape, powering countless systems globally.

CSS: Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable. CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects. CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

HTML: HTML, which stands for Hyper Text Markup Language, is utilized for designing web pages. Hypertext refers to the interconnectedness of web pages through links, while markup language defines the structure and presentation of text within HTML tags. HTML allows developers to annotate and structure text, enabling machines to understand and manipulate the content accordingly.

SQLite3: SQLite3 is a lightweight, file-based relational database management system (RDBMS) that often used as the default database for Django projects, especially during development. It is part of the Python standard library, making it easy to set up and use without the need for additional installations or configurations.

V. CONCLUSION

In this paper, we introduce the design and implementation of a mobile application named

TOGOTU, enabling users to access tourism guidance information conveniently and flexibly. Through TOGOTU, users can obtain detailed information about attractions, including text, images, and videos. Notably, the application offers location-based information, accessible through an integrated map feature. Users can customize their search for nearby attractions by specifying the desired distance from their current location. As users move away from their initial location, the mobile phone automatically updates its position to the server, facilitating the retrieval of an updated list of nearby attractions.

VI. RESULT

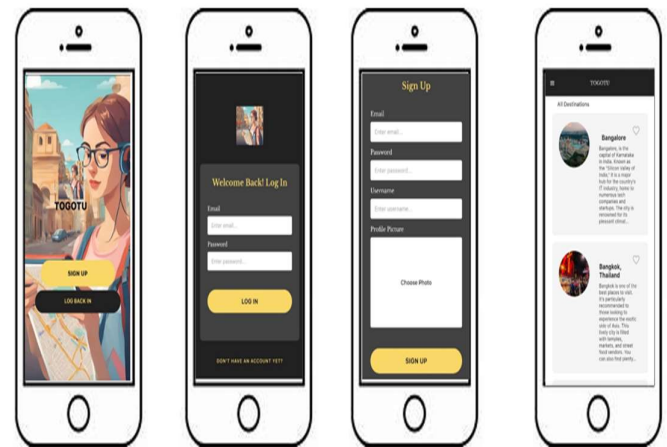


Fig2.interface of TOGOTU

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