IOSR Journal of Engineering (IOSRJEN) **www.iosrjen.org**
ISSN (e): 2250-3021, ISSN (p): 2278-8719
Vol. 09, Issue 5 (May. 2019), ||S (X) || PP 32-37

Design and Implementation of Location Based Application

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Abstract: *This project presents the architecture and implementation of a location based application, called Tour-Pal. It provides search service based on the user's current location. If the user is in any emergency situation or needs to find places (such as hospital, medical shop, police station etc) this application will give the nearest available addresses of the place searched. All these elements will change accordingly as the position of the user changes. Users are permitted to get tour guidance information that they are in need of, anytime and anywhere. The tourist data can be browsed using an Internet map service, Google Maps. This application can be used by people new to the city too, for finding places like hospital, bus stop, railway station, airport, auto-stand, hotels etc also to find places that are either required in case of emergency or in day to day life. The idea behind the system is simple: using personal, mobile wireless computing devices, user can get the tourism guide ubiquitously.*

Keywords: *Android, Global Positioning System GPS,*

I. Introduction

Tour-Pal is an application that provides search service. The focus of this project is on software for location based application. We are not just interested in the location but also other elements that are essential for different types of people in their everyday life, such as

1. Hospitals
2. Medical shops
3. Police station
4. Petrol pump
5. ATMs
6. Restaurants
7. Public toilets
8. Bus stop
9. Railway station
10. Airport
11. Auto stop
12. Vehicle repair shop

All these elements will change accordingly as the position of the user changes. This application shall help the user in finding out the nearby detailed information regarding certain important places linked to their current position. Important places such as hospitals, police station etc. This will include information about: where the above mentioned elements are present at nearby and detail about these elements. Here, the details include address along with Google map showing the exact route from user's current location and other basic info like contact no, email-id etc.

The design, implementation and deployment of a location-based application with mobile phone as a platform. This application permits users to get tour guide information they need anytime and anywhere. The tourist data can be browsed using an Internet map service, Google Maps.

II. Outcomes Of The Project

- A location based app to help the user in finding out the nearby detailed information regarding certain important places linked to their current position. Important places such as hospitals, police station, medical shop, ATMs etc.
- The design aims of the project were as follows:

1. Use off-the-shelf hardware and software components.
2. Simple and easy to use interface.
3. Simple and easy to build new expos.

- We determined the system was required to complete the following tasks:

1. Display attraction information in the form of Hyper Text Markup Language (HTML) pages relevant to the user's position.
2. Display the user's position graphically on the tour map based on their position from a GPS.
3. Limited screen size requires the user interface to be simple yet effective.
4. Provide functionality for other tours to be created and uploaded onto the system and used.
5. Display relevant information to aid in the navigation process.

- This application enables users to obtain relevant location based information quickly and easily. This is achieved by a simple but elegant design of the interface, and adopting a "more is less" approach to quantity of information displayed.

III. Overview of the Operation of the System

A high level overview of the TourPal is presented as a means of showcasing its main features. When the application is first turned on, a Login page is available. Users already having an account may directly Login into their respective accounts. New users will have to create an account by registering themselves; this can be done by clicking on 'Register' available below the Login button.

The registration process is very easy. Users have to only put in their email-id and password then click on the 'Create an account' button. Both the fields are mandatory, validations are applied to check that the fields should not remain empty. Validations are also applied to keep a check on the proper format of the email entered that is to check if the mail id actually exists or not.

Once the user gets logged in into this application, a page divided into two sections is visible. The upper part consists of the Google Map and the second section below this map has a dropdown list. This dropdown list consists of 10 important places required to any person in everyday life or may be mostly at the time of any emergency. These 10 places include: Police Station, Hospital, ATM, Restaurant, Pharmacy, Gas Station, Bus Station, Car Repair, Taxi Stand, and Department Store. These places become a little hard to search for while travelling to new locations.

On the map, user's current location is visible which changes as the user shifts to newer locations. On selecting a particular place from the dropdown list, markers pointing to nearest available places appear on the map, of that particular selected place. Along with the marker a few detailed data of these marked places are displayed below the dropdown list. Places available within the radius of 3.5km from the current location of the user are only displayed. Different places have different color markers to point the location.

User can also get the exact directions for reaching his selected destination from the map. On clicking any of the markers the option of Google route/direction pops-up on the bottom right corner of the map. User gets redirected to the Google Map application where he gets the direction from current location to his selected destination.

IV. Design

This is an android based application Developed using flutter framework, android studio and dart language along with the online server firebase. Its features are user friendly. Flutter is an open-source mobile application development framework created by Google. It is used to develop applications for Android and iOS.

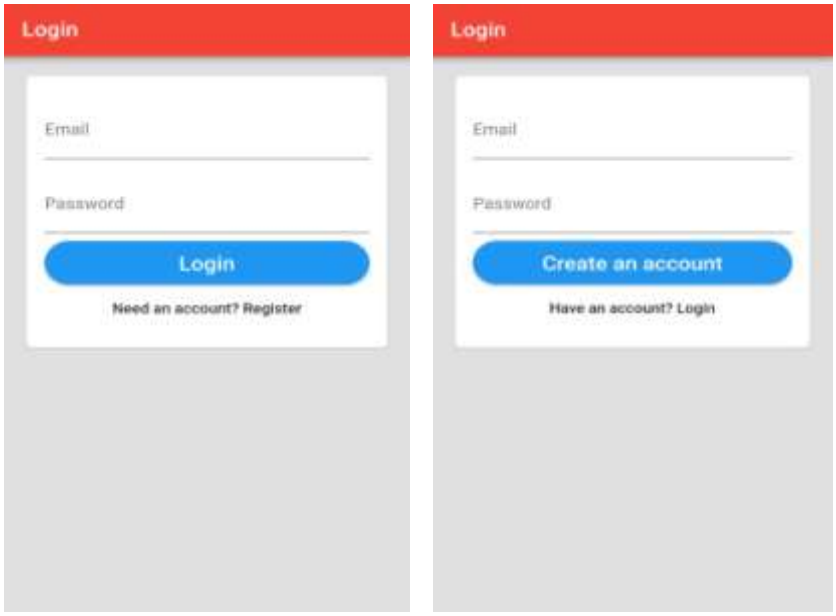
Flutter apps are written in the Dart language and make use of many of the language's more advanced features. On Android, and on Windows, macOS and Linux via the semi-official *Flutter Desktop Embedding* project, Flutter runs in the Dart virtual machine which features a just-in-time execution engine. Due App Store restrictions on dynamic code execution, Flutter apps use ahead-of-time (AOT) compilation on iOS.

Flutter is a cross platform for native applications. A native app is built for use on a particular device and it's OS; it has the ability to use device-specific hardware and software. Native apps can provide optimized performance and take advantage of the latest technology, such as a GPS, compared to web apps or mobile cloud apps developed to be generic across multiple systems.

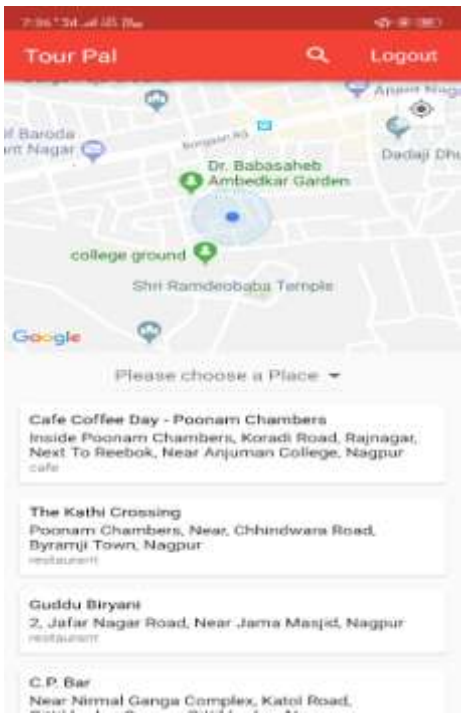
The online server used here is the firebase server. Firebase provides a real time database along with backend as a service. Firebase Storage provides secure file uploads and downloads for Firebase apps, regardless of network quality.

V. Implementation

As soon as you open the application you need to get logged in. If it's a new user then create an account then get logged in. New user will register for a new account.

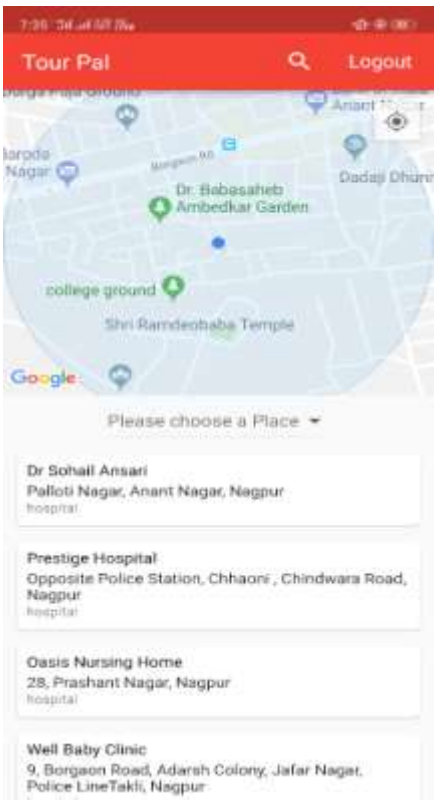


After logging in, the page split in two sections is visible. Upper section consists of a google map. Below section consists of a dropdownlist containing 10 places.



The dropdownlist consists of following places:

On selecting a particular place, displaying that places available in a radius of 3.5km are displayed by markers. Along with a detailed description of that place gets mentioned below the dropdown.
For example: if we select hospital.



On selecting a particular place, you get to see an icon of Google Mapfor directions), at the bottom right corner on the map.

On selecting the direction button, you get routed to the gogle maps app. Which will show you the directions to your selected destination.

VI. Conclusion

Tour-Pal is an application that will help its users finding places (such as police station, hospital, etc) that can be necessary in any emergency situation. User might also need to find places like banks, ATMs, medical shops etc if the user is new to that area. Also a user (say, tourist) new to the city may also search for places like nearest hotels, restaurants etc.

This application shall prove to be the easiest way of finding out places nearest to user's current location.

Instead of having many different apps (ex: one for nearest hospitals, another for restaurants, etc) this application alone will provide nearby locations of almost all types of places.

Future Scope:

At present this application will be providing a few essential places to its users.
Later in future the following fields might also be added:

1. Petrol pumps.
2. Vehicle repairing garage.
3. Railway Station.
4. Bus/Auto stops.
5. Tourist places, etc.

References

[1]. S.Bhattacharya and M. B. Panbu, ―Design and Development of Mobile Campus, an Android based Mobile Application for University Campus Tour Guide‖, International Journal of Innovative Technology and Exploring Engineering,Vol-2, Issue-3, February 2013.

[2]. P.Mate and H. Chavan, ―Android Based Continuous Query Processing in Location Based Services‖, International Journal of Advanced Research in Computer Science and Software Engineering,Vol.4, Issue 5, May 2014.

[3]. U. Thakur, V. Nagare and M.Shimpi, ―Tour Guide System using Augmented Reality: A Review‖, International International Journal of Science, Engineering and Technology Research (IJSETR), Volume 5, Issue 3, March 2016 774 ISSN: 2278 – 7798 All Rights Reserved © 2015 IJSETR Journal of Soft Computing and Engineering (IJSCE) Vol-5 Issue-5, November 2015.

[4]. S. A. Jordan and Irbid, ―Building Mobile Tourist Guide Applications using Different Development Mobile Platforms‖, International Journal of Advanced Science and Technology Vol. 54, May, 2013.

[5]. L. R. Pawar and S.S. Patwardhan, ―Problems & Suggestions for Android City Tour Guide System Based on Web Services for Mumbai‖, International Journal of Advanced Research in Computer Engineering & Technology (IJARCET),Vol- 4 June 2015.