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Jntua Campus GPS Android Application

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Abstract: College campus is new to visitors entering inside. Every year new students are get admitted in the university so finding their buildings may be time consuming. Google Maps API provides a number of utilities for adding individual contents to the Google map and various web map applications can be explored. Making a separate campus assistance application with GPS provides helps to the visitors. Finding the user destination is very easy by using Google Maps, but all of the buildings are not added in the Google Maps. Our Campus Navigator application enables users to obtain routes that are much more detailed than an existing commercial application can provide. When the user gives a destination address, it shows the directional path from current location to destination with distance and duration. Making this application reduces the user stress to find out their desired location.

Keywords: Android, GPS, Navigation, Map Type.

I. INTRODUCTION

Global Positioning System is the field of study that focuses on the process of monitoring and controlling the moment of travel from one place to another. Application allows to the user to enter a destination address and based on their current location, it displays the route path to the destination. Developing Customized buildings android application to the campus can easily find out their destination path with distance and duration. Our Campus Navigator application enables users to obtain routes in inside the campus This application direct the user from his current location to the exact location he or she searches in the campus. It reduces the effort of the user to walk or drive in all over the campus. [2] Adding driving mode and walking mode to the application, an user can be easily found their route with required mode from current location to destination location .An application provides you two radio buttons to select user required mode ,when we have selected any mode on display it shows different duration.

A. Background

Technology is improving day-by-day with new innovations ,every user has to confused or frustrated when visiting new places .To avoid this problems ,we have a GPS to track from current position to required destination. We have many applications on location based tracking system for providing different features to access easily using mobile phones on android platform. Using google maps we cannot get the routes as per user required buildings. Developing campus buildings navigation on android platform to the user can find out their required building path easily using this application.

B. Motivation

Developing location based services to the campus will reduce the time complexity .when we have given destination address in the search bar automatically displays current position to destination route with distance and duration. Adding modes of travel to the application like driving mode and walking mode, The user will find their duration based on selected mode of travel.

C. Scope

Activities of an application

- 1) When we have opened the application it displays all the markers related to campus buildings and also displays the current location of the user.
- 2) When we have given destination address it shows the route from current location to destination with distance and duration.
- 3) Providing modes of travel to the application, we can easily find their duration based on required destination.
- 4) Providing navigation button to moving a marker from user place to destination.

D. Objective

Develop an useful ,informative, android based solution to the campus with necessary functionality , user can easily identify their buildings in inside the campus. Provide driving and walking mode to the application ,visitors easily find the duration with out any inconvenience.

E. Organization

Generate an API key to access the map data for developing campus GPS android application. Designing user interface by using XML file and functionality of this user interface is written in java code. Some of the permissions are taken based on requirements that are placed in manifest file. we are providing only one search bar to the input as destination address .To accessing or functioning of the input address or destination address ,we have to click the GO button. Once you have clicked the GO button it displays the current location to destination with route distance and duration. The functionality of this application is showing current location of the user or device while opening the application and also displayed overall markers which is added required coordinates. The destination addresses are working only on JNTUA campus buildings coordinates .

Some of the required permissions are used in my application.

```

<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.WAKE_LOCK" />
<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
<uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />
<uses-permission android:name="android.permission.USE_CREDENTIALS" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.ACCESS_WIFI_STATE" />
<uses-permission android:name="android.permission.CHANGE_WIFI_MULTICAST_STATE" />

```

When we have opened application it displays all the markers with the current location of user.

Providing map view to the application shows an attractive or effective display, Which includes road map, Satellite, Terrain and hybrid view. We can select as per user required type to display the view of the map type as shown in fig2

fig1:displaying markers

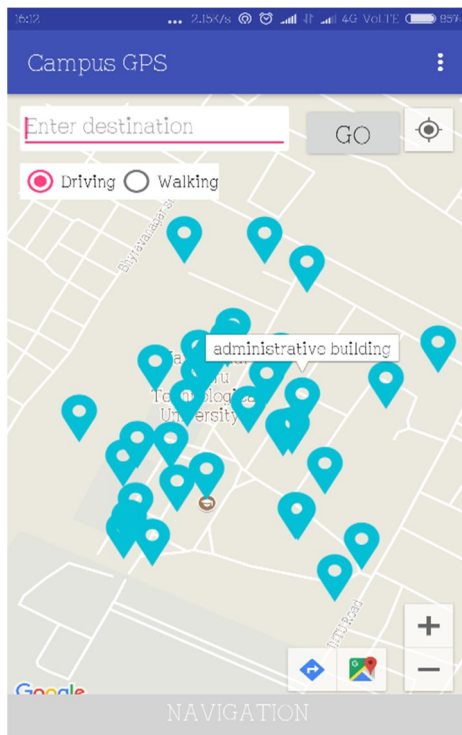
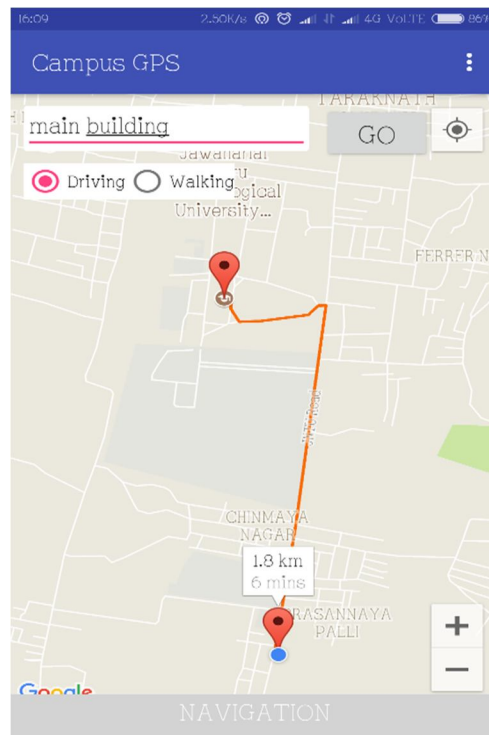
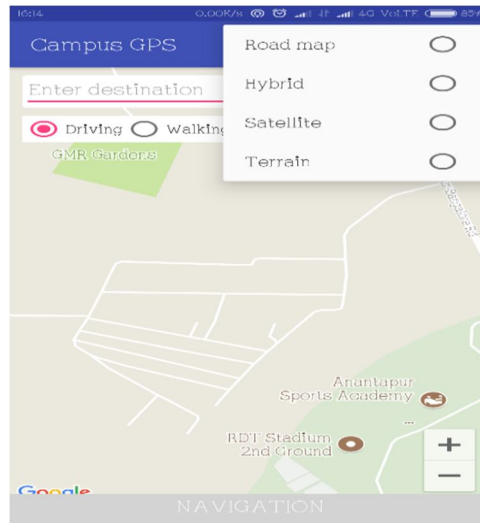


Fig2: Map Types



When we have given a destination address it displays route path with distance and duration and also can select required mode like driving mode and walking mode with different duration. The route will be shown from current location to destination. The route will be displays based on latitude and longitude coordinates. Initially it displays the current location of the user and it fetches the current location coordinates and then displays the route as per the destination coordinates.

Fig3: road path



The application has included navigation button for moving the marker as per changing the location of the user. When clicking of navigation button the marker move to current location of the user then the marker moves when the user will move to the destination.

Fig 4 shows the navigation functionality.

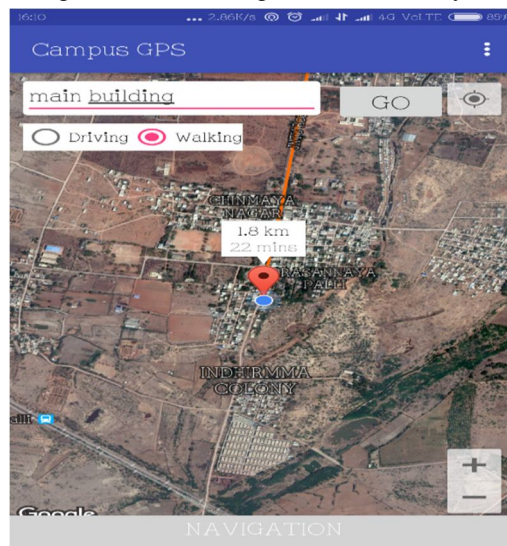


Fig 4: navigation

II. LITERATURE SURVEY

Location based navigation are growing with different features by using Google Map as per their requirements. Yogesh B.Thosar, Vaishali P.More developed location based task remainder .This application shows the current location of the user with coordinates. The application indicates that to save the current location coordinates with name of the place for place remainder. Once the location been saved in application it can also shows the distance from current location to destination. For developing of this application must have to take the permissions that are placed in manifest .xml file to access the map data based on their requirements.

[4]Muthumurugesan D1, Nalini S2, Vinodini R3 developed Smart Way to Track the Location in Android Operating System. This application indicates the south india travel with include rating, plan the trip ,place of origin and distance buttons to functioning their related operation, it contains the Phrase book to language interpretation, and it shows the distance by fetching current location. The distance would be shown based on driving mode. User can filter based on state wise destination. For this application we have to generate API key with SHA fingerprint to access the map data by using API key.



[3]Vaibhav Anpat and Ashutosh Shewale developed Campus Navigation on Android Platform which shows the live events and also provided navigation with path and distance. They have mentioned drop box to selecting list of buildings like canteen, bus stop, library etc.

From this literature review ,we are developing the personalized campus building navigation application included with this functionality like map types ,road way path with distance and duration. providing moving marker when the navigation button is clicked. adding driving and walking mode with different duration.

III. CONCLUSION

Developing customization GPS to the campus on android platform will reduce the time complexity of user and providing different functionality to the application can be handle user friendly. Providing campus map application to the users can easily access their desired location so it reduces the user stress.

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