

ANDROID BASED INTERNAL CAMPUS NAVIGATION SYSTEM

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Abstract-A college campus may be very large or it may have many buildings. New students and parents will face trouble to find the exact places in the college where the different blocks are located. To make easier for the new comers we developed an application to find the route map inside the campus for the various locations with voice alert using the android system. The voice alert system gives the detailed information about the places that we search in the application, hence this application will be useful for visually impaired people also. Android navigation based technology enables the provision of variety of information such as root and location of campus in the navigation field. In our project we give the route without using GPS and its gives the exact output. We also use Visual Trace Method (Marker method and Marker less Method) especially for the visually impaired visitors. A visual traceroute provides image of the hops involved in one or additional traceroute paths wherever an error was detected. The visual traceroute acts as a map, showing all the paths, such as routers and switches, that data packets pass, or hop through, on their way to their destination. For the Visual Trace Method, the marker installation and digital information should be assigned while the Non-visual Trace Method requires the use of phones. Most of the ideas can only show the path from a user's current location to their destination. Our idea, the design and implementation of an augmented reality program is discussed. Provides useful, informative, android based solution for navigation inside a campus, which will contain all the necessary details, to ensure that it is easy, accurate navigation and identification of various buildings, departments and help the visitors to reach their desired location without any manual or guide assistance. The main goal is to provide information regarding the current location of the museum, distance to reach the destination as well as provides the exact path to the visitors.

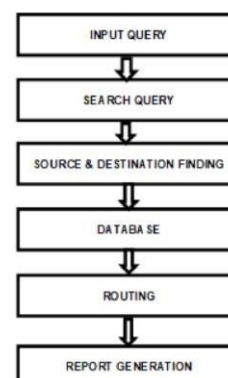
Keywords-College Campus, Visual trace method, Navigation, Route Path.

I. INTRODUCTION

A campus is a complex infrastructure. Particularly new students and people for the first time have a hard time to find places. The campus occupies more square kilometers. The campus has many different buildings.

Buildings are connected to each other, even by subways. There are maps at some points on the campus, even users do not have continuous help to get to their end destination. They can find a way to get to their target on these maps, but as soon as they start walking in the target direction they didn't have depend help any more. Whereas it is very common to use navigation systems in cars to reach destination. It is possible to help freshmen and other inexperienced people in the campus and support them finding a specific places on campus with the help of modern techniques. The solution to the present question is "CAMPUS NAVIGATION SYSTEM". This enables users to obtain routes that are much more detailed than an existing application can provide. Our implementation of a navigation application calls for much greater complexity than the simplest version of this type of application. The campus would be represented as a Graph structure, with locations on campus stored as vertices of the Graph and transitions between the locations stored as edges between the vertices. This application directs the user from the main gate to the exact location he searches in the campus. It helps the user to walk all over the campus without confusion.

II. FLOW DIAGRAM



III. METHODOLOGIES

The Navigation component consists of three key parts that are described below:

- **Navigation graph:** An XML resource that contains all navigation-related data in one centralized location. This includes all of the individual content areas within our app, called destinations, as well as the possible paths that a user can take through our app.
- **NavigationHost:** An empty container that displays destinations from our navigation graph. The Navigation component contains a default Navigation Host implementation, Navigation Host Fragment, that displays fragment destinations.
- **Navigation Controller:** An object that manages app navigation within a Navigation Host. The Navigation Controller orchestrates the swapping of destination content in the Navigation Host as users move throughout our app.

As we navigate through our app, we tell the Navigation Controller that we want to navigate either along a specific path in our navigation graph or directly to a specific destination. The NavigationController shows the appropriate destination in the NavigationHost.

The Navigation component provides a number of other benefits, including the following:

- Handling Up and Back actions properly by default.
- Providing standardized resources for animations and transitions.
- Implementing and handling deep linking.
- Including Navigation UI patterns, such as navigation drawers and bottom navigation, with minimal additional work.
- Safe Args - a Gradle plugin that provides type safety when navigating and passing data between destinations.
- ViewModel support - we can scope a ViewModel to a navigation graph to share UI-related data between the graph's destinations.

IV. MODULE DESCRIPTION

A. Input Query Module

This module defines the user to give input as a request appears in the query panel.

B. Search Query Module

Finding the possible routes and destination

C. Finding Database Module

Using SQLite, the database is stored it will retrieve as per the user request.

D. Routing Module

The routing module is voice enabled. So the students or parents can use navigation by giving user input and voice is also playback as per the request.

E. Report Generation

A report generator is a computer program whose purpose is to take data from a source such as a database and use it to produce a document in a format which satisfies a particular human readership. Report generation practicality is sort of invariably gift in info systems, wherever the supply of the info is that the info itself. It can even be argued that report generation is component of the purpose of a spreadsheet. Standalone report generators may go with multiple data sources and export reports to different document formats. Data systems theory specifies that data delivered to a target human reader must be Timely, Accurate and Relevant.

V. SOFTWARE DESCRIPTION

A. SQLite

SQLite is an open-source software. The software system doesn't need any license when installation. SQLite is serverless because it does not want a distinct server method or system to work. SQLite facilitates you to figure on multiple databases on constant session at the same time, so creating it versatile. SQLite may be a cross-platform software which will run on all platforms, together with macOS, Windows, etc. SQLite does not need any configuration. It wants no setup or administration. SQLite is employed to develop embedded software system for devices like televisions, cell phones, cameras, etc. It will manage low to medium-traffic hypertext transfer protocol requests. SQLite will amend files into smaller size archives with lesser data. SQLite is employed as a brief information set to induce processed with some data among associate degree application. Beginners use SQLite for learning and coaching functions, because it needs no installation and configuration.

B. JavaScript

Java has been tested, refined, extended, and verified by a fanatical community. And enumeration over half-dozen.5 million developers, it is the largest and most active on the world. With its skillfulness, efficiency, and movableness, Java has become priceless to developers by sanctionative to:

- Write package on one platform and run it on just about the other platform
- Create programs to run among an online browser and internet services
- Develop server-side applications for on-line forums, stores, polls, markup language forms process, and more
- Combine applications or services victimization the

Java language to form extremely bespoke applications or services

- Write powerful and economical applications for mobile phones, remote processors, low-priced client product, and much the other device with a digital heartbeat.

C. Eclipse IDE

It is a multi-language software system development environment comprising an integrated development environment (IDE) and an protractile plug-in system. The initial codebase originated from IBM Visual Age. The Eclipse SDK (which includes the Java development tools) is supposed for Java developers. Users will extend its talents by putting in plug-ins written for the Eclipse Platform, like development toolkits for alternative programming languages, and may write and contribute their own plug-in modules.

Features Of Eclipse IDE

- For any software package the software package update system is often the key mechanism. For the eclipse IDE the software package update system is incredibly easy because the developer will simply add the plug-ins that facilitate the developer to develop the advanced version of applications.
- The dependencies are terribly restricted within the eclipse platform because the IDE offers the ability by providing easy panel within which user choose the software package and add-ons that required to be in eclipse platform.

D. ADT Plugin

Android Development Tools (ADT) may be a plugin for the Eclipse IDE that's designed to administer you a strong, integrated atmosphere within which to make mechanical man applications. ADT extends the capabilities of Eclipse to allow you to quickly found out new mechanical man comes, produce associate application UI, add packages supported the mechanical man Framework API, rectify your applications victimization the mechanical man SDK tools, and even export signed (or unsigned) apk files so as to distribute your application.

The Android Development Tools (ADT) plugin adds powerful extensions to the Eclipse integrated development setting. It permits you to form and right your humanoid applications easier and quicker.

It provides you access to different humanoid development tools from within the Eclipse IDE. as an example, ADT permits you to access the numerous capabilities of the DDMS tool: take screenshots,

manage port-forwarding, set breakpoints, and look at thread and method info directly from Eclipse.

It provides a replacement Project Wizard, that helps you quickly produce and discovered all of the essential files you'll have for a replacement humanoid application. It automates and simplifies the method of building your humanoid application. It provides Associate in Nursing humanoid code editor that helps you write valid XML for your humanoid manifest and resource files.

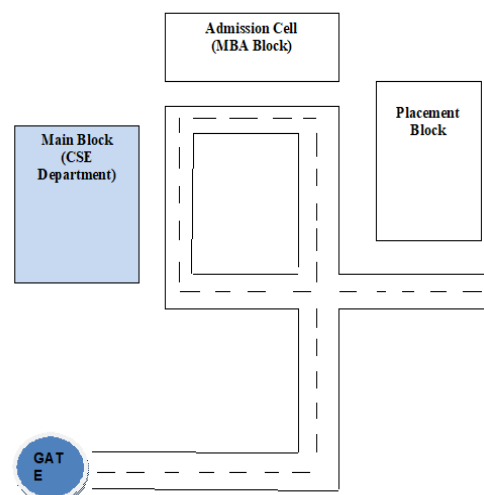
VI. CONCLUSION

The problem and motivation of this paper is that most of the existing navigation system are unable to provide routes accurately as well as further information of the building within a region such as campus, department, hostel and etc without using GPS. Furthermore, the method of by typing words is sometimes inconvenient, an advanced search method by using images can be used to substitute the method of typing words into the search engine. Mobile Campus Navigation Application with Augmented Reality is an application with severely unique functions and properties that delivered in a well user-friendly way to typical users of the system. It apparently gives the user productivity with the combination of technical and user requirements in advance.

OUTPUT

Gate To Main Block (Cse Department):

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Gate to Main Block (CSE Department) – 170m

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