



ADVANCE MALL NAVIGATION

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Abstract — Now Days there are various navigation and tracking systems are available based on GPS, Bluetooth, GSM, IR, Wi-Fi and Radar. A shopping Mall is a vast place, & normally many people get confused with the direction of the nearest Brand Shops, ATMs or even rest rooms. So, we are trying to simplify this method with the “Mall Navigation System”. This Navigation system is a vision-guided navigation system that enables a self-motivated user to easily bootstrap and deploy indoor navigation services, without comprehensive indoor localization systems or even the availability of floor maps. The user can get path the by tracing the map. Thus, system also finds shortcuts whenever possible. In this paper, we are trying to explain how we can solve the practical problems, for ex. robust tracking, short path identification, etc. As we know, time is money, and everyone is struggling to grow up. Considering this factor people are not willing to spend time for small things like move out for shopping for small things. They feel like all the things should ran towards them. To fulfill the needs of the people our system will be helpful to them. Instead for going out and purchasing there in the shop is not mandatory. One thing can happen is we by our own can find a nearest shop, that too by shortest route and buy the items we want to. It's not that always the malls are situated near by our place. to overcome this problem our system will be helpful to solve this.

Keywords: Wi-Fi Router, WPS - Wi-Fi-based positioning system, View finder, Map, Navigation software, WSN - Wireless Sensor Network

I. INTRODUCTION

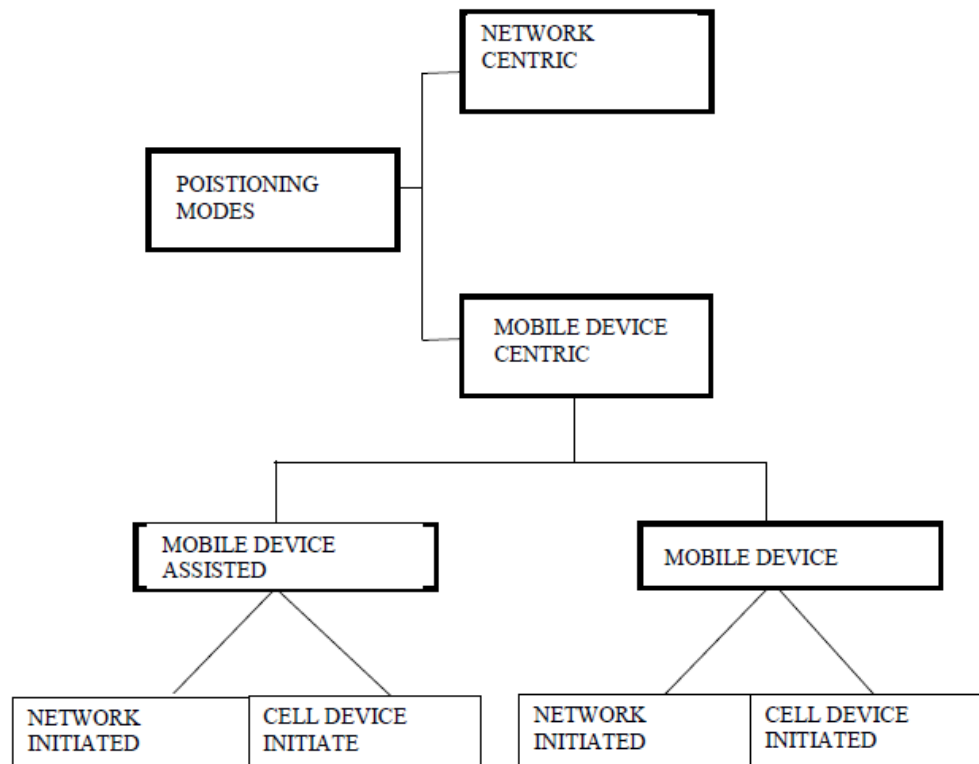
Wi-Fi Navigation concept is very simple to understand because there is no large amount of hardware devices interaction. The most important thing of the system is that database is located on the Android device with a predetermined list of wireless access points in a defined area with corresponding longitude and latitude coordinates. With the large-scale expansion of Shopping malls, Corporate offices and all sorts of commercial and non-commercial buildings has gained lot of importance not only to save time but also to get rapid access to everybody everywhere. Such navigation systems have such varied applications but the most commercially viable ones in the present scenario are those which make use of the existing wireless infrastructure to reduce the equipment and installation cost considerably.

In this Paper we are trying to describe our proposed system which is based on most popular wireless technologies namely Wi-Fi Router for Navigation. This Navigation Software usually provides maps and directions to help you get to your destination based on your current location.

Nowadays Generally all shopping malls provide free Wi-Fi services so as the visitors can access free internet on the go within the mall itself and keeping in mind business strategies the mall database automatically sends advertisement links. Similarly, our proposed system will provide its own navigation system.

Similarly, as we enter a shopping mall and to access free internet we search for the Wi-Fi connection of the place through our smartphones, when our phone detects the router; the router sends a current map of the mall user will use this map for finding location.

II. ARCHITECTURE - PROPOSED SYSTEM



This system presents the most common indoor positioning applications and the types of technologies that enable them in a vendor-neutral manner, although helpful reference is made to a few well-known positioning device brands due to their familiarity. This system explains the basics of how the indoor positioning technologies work. The main purpose of this system is to provide a basic understanding of indoor positioning applications and their use cases along with the technologies that enable them so that security specifies, security systems providers and security practitioners can understand and productively participate in design, planning and deployment activities for indoor positioning system initiatives.

Wi-Fi-based positioning system (WPS)

For getting accurate location information we are using Wi-Fi-based positioning systems (WPS) technology instead of Global Positioning System (GPS). These types of systems have the potential to GPS supplement and in indoor environments GPS is unreliable. The main purpose of this study is to validate the advantages of using a reliable database for a Shopping Mall (a Large area WPS) from indoor environments.

WI-FI as a part of Location Based System (LBS)

WPS - Wi-Fi Positioning System uses wireless Strong network instead of cell tower System or GPS. This is basically consisting of a nationwide access points or network of location beacons used for pinpoint measurement of user's position and is better than satellite positioning system. Several Software's for Wi-Fi positioning is available and that are uses radio signals emitted from routers to find the exact position of any Wi-Fi enabled devices including PC, laptop and smart phone. The operator who provides Wi-Fi services he has their own database which are containing information about every access point in area. So, when a user enters into that area then the software search for access points and then calculates the exact position of the user by selecting and comparing them to the reference database. For more accuracy and better results, there is need of more access points with more Wi-Fi routers.

Advantages:

The main advantage of our system that it will take us to the shop via shortest path and whatever items user wants is categorized into various brands. So that it becomes easy for the user to check from various brands and get a deal on them. Our system makes easy for the user to find the address and follow the sequence of landmark where the shop is situated.

Limitation:

- 1 Application is to be installed
- 2 Wifi needed

Applications:

- 1 Mall
- 2 Shopping Center
- 3 Corporate Offices
- 4 Events

III. HARDWARE REQUIREMENTS

- | | |
|-------------|------------------|
| ➤ System | : Intel I3. |
| ➤ Hard Disk | : 40 GB. |
| ➤ Monitor | : 15 VGA Colour. |
| ➤ Mouse | : Logitech. |
| ➤ Ram | : 3 GB. |

IV. SOFTWARE REQUIREMENT

- | | |
|--------------------|-----------------------------------|
| ➤ Operating system | : Windows XP Professional/7LINUX. |
| ➤ Coding language | : JAVA, ANDROID |
| ➤ IDE | : Android Studio. |
| ➤ Database | : MYSQL/XAMPP DATABASE |

V. CONCLUSION

This paper describes our proposed System to design, implement, and evaluate indoor navigation system for mall. The main idea is providing help to users for finding location for ex. any brand store or ATM in Malls without any Confusion. We incorporate magnetic field distortion and Wi-Fi signals in particle filtering to ensure accurate user tracking. We devise a method to automatically capture shortest route. Likewise, this system can also be used in hospitals, airport, retail etc., which can we future scope.

VI. REFERENCES

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