INDOOR WIRELESS TRACKING USING WI-FI

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ABSTRACT

Wireless location is finding is one of the key technologies for wireless sensor network. GPS is the technology used but it can be for the outdoor location. When we deal with the indoor location. GPS does not work. Indoor location includes building like super market, big malls, parking, universities and location under the same roof. In these areas the accuracy of the GPS location is greatly reduced. Location showed on the map is not correct when the GPS is used under the indoor environment. But the indoor localization requires the higher accuracy GPS is not feasible for current view and also when the GPS is used in the mobile device it consumes a lot of mobile battery to run application which causes the drainage of the mobile battery within some hours. So find out the accurate location for indoor environment RSSI-based literal algorithm.

Keywords:
Networking, Wi-fi, Localization, Markov model, &Tracking.

INTRODUCTION

It Indoor location include buildings like supermarket, big malls, parking, universities and location under the same roof. we can search rooms using nearby Wi-Fi system. User tries to search for any specific room then the application display map of the location along with the current location of the user. Path from the user's current location to the user entered destination is displayed.

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We can search rooms using nearby Wi-Fi system .User tries to search for any specific rooms then the application display map of the location along with the current location of the user.

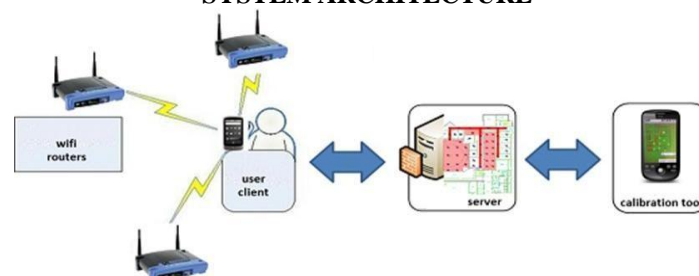Path from the user's current location to the user entered destination is displayed.

PROBLEM STATMENT

Propose a system to find out the different indoor objects over the large area with the wireless networks. The location of the different indoor areas is tracked with the feature of the navigation. System finds out the accurate location of the area and also consumes the less battery of the smart phone.

Implementation of the system to enable the tracking of the GPS isolated areas i.e. the indoor tracking of the areas and get the complete path of navigation.
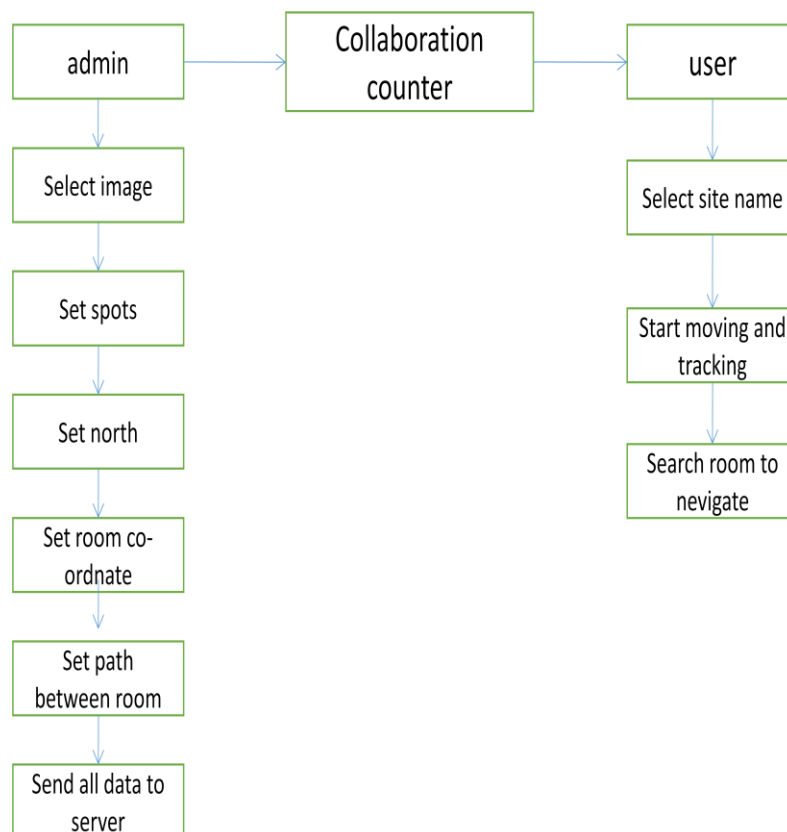
In this system we use Wi-Fi system for tracking user's location. User tries to search for any specific room then the application displays map of the location.

SYSTEM ARCHITECTURE

- The user first logs into the system using the valid information.
- This user then downloads the map of the site where he wants to carry out the tracking.
- Once the map is downloaded the location of the user is calculated using the data from the Wi-Fi routers and from the sensor of the smart phone and the location is plotted on the map.
- Using the searching functionality the user can search the desired location and can enable the animated path to reach to the destination.

Proposed system Architecture

IMPLEMENTATION

.**Mathematical Module:**
- The system uses the values from the Wi-Fi routers and uses these values for finding the location of the user and the level are used to calculate for the distance.
- *Input:*
  1. Frequency of the router.
  2. Level of the router.
- **Triangulation Algorithm:**
- Triangulation offers a way to locate yourself in space.
- While triangulation method uses angles for locating the points, whereas trilateration uses lateral distances.
- The technique can be extended to 3D, finding the intersecting region of spheres surrounding the points.
- For the triangulation algorithm the input is from the WIFI routers.

- It takes the values of the frequency and the strength or the level and calculates the distance using the Free Space Path Length.
- Then the circle is drawn taking that as radius and for all the routers and the location is determined.
- As the number of the router increases then algorithm gives the exact location of the smart mobile.

GOALS & OBJECTIVE

The main objective of system is used search room and current location of the user whenever user reached any room he has to scan QR-code present on the door of that room so that we can try that user location and to give him navigation for other room. By scanning QR-code we can determine how many time users were present in that room. Systems find out the accurate location of the area and enable the tracking of those areas from the user's location with less consumption of the smart phone battery.

FEATURES

The main goal of the system is to provide a way to track the indoor areas with the less consumption of the smart phone battery.

System should predict the accurate location of the indoor areas.

Our model can find out the accurate location of the indoor area and can provide a feature of the navigation through which the user can have the live tracking to reach to the destination.

CONCLUSION

In this system we use GPS and Wi-Fi system for tracking indoor rooms for user. User tries to search for any specific room then the application displays map of the location along with the current location of the user. Path from the user's current location to the user entered destination is displayed. These techniques don't require any additional hardware and as the sensors require very less battery consumption than the GPS it can be used to save the battery life.

It uses a cross-calibration technique and energy minimization framework to reduce the calibration over heard to linear in the number of location

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