COLLEGE ROUTE NAVIGATION

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Abstract

The proposed system is a useful tool in navigation of a campus area. Parents and visitors find it difficult to explore new areas or unknown locations by themselves. Hence the proposed system will serve as a helper to them and aid in navigation through the campus, as we have selected campus area for our study. We currently aim at developing a system that shall enable a new person to explore unknown campus area which he is unfamiliar to. Furthermore, the proposed system will also display the information about events, circulars etc.,

Introduction

Navigation is the technique of appropriately setting up the user's position after which displaying instructions to manual them thru viable paths to their desired vacation spot.The global Positioning machine is the maximum not unusual and the most utilized satellite navigation system nearly each aircraft and ship inside the international employs some shape of GPS era. it is a era Framework providing place offerings for outdoor situations. whilst GPS does not deliver the precise region inside any big homes – Airports, Hospitals, workplace buildings, huge institute and so forth. Our system will provide the smooth localized navigation in huge institute through the use of the beacon sensor. Beacon body is one of the management frames in IEEE 802.eleven based WLANs. It contains all of the records about the network. Beacon frames are transmitted with the aid of the get entry to factor (AP) in an infrastructure fundamental service set (BSS). In IBSS network beacon era is sent among the stations. We proposes the shortest route shape the supply choice vicinity, we also uses the sound tag for clean conversation and for better expertise for give up user. in addition to for the correction of indoor positioning algorithm for indoor map framework they uses map data get entry to which provide a common get admission to to indoor map facts and this access can be used not only for positioning purposes but additionally for drawing maps, separated positioning modules which has a common interface e. g. for function updates of placed objects and for the configuration of sensors, map and object rendering it generate a map that is based on uncooked geographical information is referred to as rendering, seamless indoor and outside maps it's far the calculation of combined outside and indoor routes and the provision of correction facts for positioning, encapsulated and selectable framework Modules it encapsulate extraordinary rendering, positioning, r outing and particular visualizations in a modules, cross platform assist many methods which are applied to attain an indoor map use sensor platform to a quire the geometry of an indoor space like octomap library with the aid of hornang that is implementation in robot working gadget (ROS) etc. with the realized framework it's far viable to cowl new project and with out re-growing repeating task

Back Ground Work

Thomas Graichen[1], proposed an approach, "A map framework using crowd-source data for indoor positioningand navigation" which presents a framework for indoor positioning and navigation cause by the use of open avenue map (OSM) for rendering commend outdoor and indoor maps and in addition they calculate the navigation routers. kamphaeng kungeharoen[2], proposed an approach "Development of GPS-Based navigation for kasetsart university, kamphaes seen campus" Considering fact that college campus like kasetsart university campus is very large, consisting of many places and landmarks so tourist or the official receivers may face some problems such as confusion & delay while visiting. To solve this type of problem they have guidelines on that campus for the travelling inside this campus so for this GPS-Based navigation is introduced with help of this tourist or other person get help or knowledge about that place .the primary cause of that is to broaden a GPS-primarily based navigation device integrate with POI (factor of interest)

database of area & locations in this campus. To do this, network application for phone was develop running on web browser. There system consist of some module like Map Configuration which uses Google Map APIs for connection to an application in order to display map, Destination Specification These process start with defining function which consist of java variable related to

object current coordinates and destination coordinates, They uses PHP, AJAX, JAVA and JavaScript programming, Database Creation which is to get the coordinates of location they use to store that location information in MySQL database, Route Calculation by using principle of GPS technology they calculate the distance between the satellite and the GPS receiver.

System Analysis

ExistingSystem:

We have many mobile apps but they are developed either for navigation or for giving information but not both are not included in the same app. If we want information regarding events, we need to install multiple apps which is not preferable.

ProposedSystem:

In proposed system we are developing an app which can be used for both navigating and giving information regarding different events happening in college. Only one app can guide the new faculty, students, parents, visitors and also give information to the students. We need not install multiple apps.

METHODOLOGY

Wayfinding. The real-world wayfinding task consisted of 6 wayfinding trials which varied in difficulty in terms of the number of streets to be navigated, the number of goals and the relative location of the goals to each other. Each trial consisted of a different starting point and required exploration through different street networks South of the British Museum in London (Covent Garden area) and South of the Montparnasse cemetery in Paris. We chose less busy streets to avoid traffic and made sure the participants were not familiar with them. Before each trial, participants were shown a map that only indicated the facing direction, the network of the local streets and the location and the order of the goals. Maps were displayed on a tablet (IPad MP24B/A, 9.7 inches). The goals were doors and gates with distinct features (e.g. specific colour, size, or material). Participants had up to 1 min to memorize the map. Once the minute was up, the map was removed and they were asked to go locate the goals. During navigation they were provided with colour photographs of the goal. To calibrate the time limit of each route, we pilot tested 3 participants in London and 2 participants in Paris, not included in the analyses. We chose these time limits to allow for a few mistakes at a reasonable walking pace. Pilot testing indicated that if participants required any longer than that these time restraints they were likely guessing and had failed to remember the goal locations or street layout. To take into account the fact that some participant did not finish some routes, we divided this distance by the number of goals reached by the participant plus 1. We added 1 to cope with cases where the participant didn’t reach any goal (this only happened once). We refer to this as the metric normalized distance, and summed it over routes 1 to 6. If participants reached the limits of the defined region shown in the map they had studied then they were told by the experimenter that they had reached the edge of the search area and should turn back. In London, route one: 6 minutes, route two: 6 minutes, route three: 6:30 minutes, route four: 6:30 minutes, route five: 12 minutes, route six: 14 minutes. In Paris, route one: 5 minutes, route two: 8 minutes, route three: 8 minutes, route four: 9 minutes, route five: 16 minutes, route six: 20 minutes.

The coordinates of participants’ trajectories were sampled at Fs = 1 Hz with the experimenter’s smartphone GPS via the Beeline app. We visually inspected all recorded GPS trajectories to deal with potential losses of signal. For losses of signal where the participant did not make any turn, we linearly interpolated between the first and the last missing points. When we couldn’t reconstruct the trajectory because the participant changed direction during the loss of signal, we discarded the data (5 trials out of 180 in Paris, 6 out of 180 in London). Performance was quantified with the Euclidean distance travelled in each route (in meters).

Path Integration. The real-world path integration task consisted of 4 path integration trials which varied in difficulty in terms of the number of turns they featured. To avoid familiarity effect, path integration routes were chosen not to intersect with any wayfinding route. Participants were informed when they were at a starting point then they were asked to follow the experimenter to an endpoint where they were instructed to point back toward the starting point. We used a numeric compass to precisely record the direction. Performance was defined as the inverse of the angle between the direction pointed toward by the participant and the ground-truth, in degrees. We then summed the absolute values of the path integration error angles.

CONCLUSION

The extensive survey is carried out and is summarized in the Table 1. The approach [1] gives the indoor positioning by using OSM and using Robot operating system it gives the correct positioning inside the building. It is more cost effective as compared to other approaches. The other approach uses the magnetic field inside the building for indoor positioning which increase the cost of the system and also degrades the performance when the climate changes.

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