

E-Guide with Tracking System

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ABSTRACT

We are developing a framework to solve the problems related to campus guide and improve the whole concept of it. We are going to make a system hardware which will be given to a tourist, which will give all the information about a particular Geo-fence zone i.e., campus.

Keywords

mobile country code(MCC), location area code (LAC), cell identifier (cell ID)

Introduction

Traditionally, a human guide is allocated to a group of people to tour the campus such as museum or in some cases even human guide is not available, instead a written sign with information is given, which makes a tour little boring or less interesting. In case of human guide, everyone will have to follow on his instructions, and no one will have that independence to spend desired time at a place he/she have more interest in.

In our project we are developing a system in which user or tourist will be given a hardware where he will receive all the information while he is roaming the geo-fence zone (campus). System will track hardware's location through GPS and accordingly play a video on a hardware display giving all the information about the spot user is standing in front.

We are replacing such hectic guide system with our technological invention. We have taken an initiative to make tours more interesting and more engaging.

Currently there are many systems are available which use for guiding purpose. All the systems are based on GPS but all that systems are used for reach at particular area/resort/museums/hotels etc. But no one has tried to make a system which use for guiding within a particular campus.

Literature Review

We researched many of the literatures during our investigations about geo-fence and the ways to use it.

Methods, program products, and systems for multitier geo-fence detection are revealed. In general, in one aspect, a mobile device can be configured to perform a task when the mobile device enters a geographic region. The mobile device can monitor a current location using a multi-tier approach. A baseband Subsystem can monitor a coarse location of the mobile device using various coarse location parameters. Such as a mobile country code (MCC), a location area code (LAC), or a cell identifier (cell ID), as the mobile device moves closer to the geographic region. Upon determining that the mobile device is in a cell that intersects the geographic region, the baseband Subsystem can transfer the monitoring to the application Subsystem. The task can

be performed when the application subsystem determines that the mobile device is currently located in the geographic region.

[1] [2]

According to patent, when system is start first system initialization is required then system will check data is available or not, if yes then program loads into memory then it check current location data. Now find difference between those two data is available or difference is non-zero then user terminate the request. If system has no available data then system will recheck data.

According to another patent, there is multi Geo- fence zones when one system can move one geo- fence to another, system can reach at particular location. That location is differentiated with nearby geo-fence zone location means difference between those two locations can decide that system is present in which geo-fence zone.

In our case we study that patents we use only small single geo-fence zone because we develop small area application which is use for particular area only, we also defined our geo-fence zone according to our requirements. In our case first we find current location of system. After that we find difference between system current location and our geo-fence zone origin distance. If this difference is in our geofence zone than system play video if system is not available in geo-fence zone than system cannot play video.

We also studied a research paper on bus tracking with raspberry pie, which was very helpful and similar to what we were trying to do. [3]

Materials and methods

We initially began with analyzing the issue and synopsis about the undertaking and looked profoundly into where it will be utilized, by whom it will be utilized and what sort of exercises or administrations it will perform. We likewise arranged how it will collaborate with individuals.

Subsequent to completing all that, we began chipping away at the significant part of the undertaking that is the means by which client will feel while and in the wake of utilizing the gadget. We isolated great and conceivable awful viewpoints that our framework may contain, we handled a ton of considerations about client experience and began actualizing

all the smart thoughts about client experience and attempted to improve the terrible ones for better understanding.

We at that point, reprocessed everything from the earliest starting point, and managed improved thoughts and attempted to consider the arrangement and give mechanization in Geo- fence zone visits barring the physical and less effective human aides.

Subsequent to finishing our investigation part, we began building up our framework with the systems we arranged. To begin with we rattled off all the parts we could have in the framework that are Raspberry Pi USB GPS Receiver and GLCD Display. We

began gathering them. At that point we executed the methodology of the methodology we would place into the improvement of the framework. [4]

Here is the block diagram of our system.

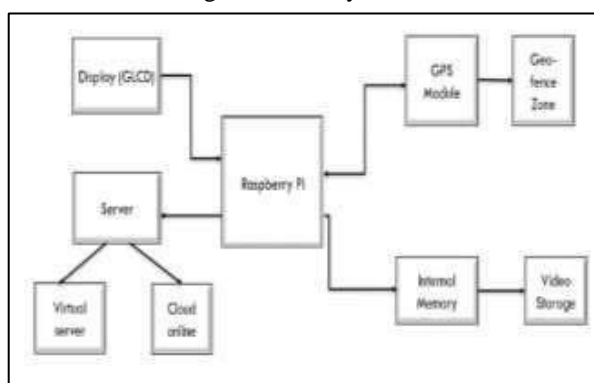


Fig. 1 Block diagram

We connect the raspberry pi with 2ampere connector then power ON the raspberry pi. Raspberry pi has Micro USB port which is use to power raspberry pi and it requires only 2ampere power only. So we can use simple mobile phone charger to power the Raspberry pi.

In Raspberry pi we can give instruction using Python programming Language. Python is very popular programming language. Unlike other language Python is interpreted language which means interpreter reads Python instruction then perform desired action. Raspberry pi supports bothPython2 and python3.Getting python program to run on raspberry pi is easy with an OS like Raspbain.

We are constantly getting GPS data from G- STAR receiver which gives us the longitude and latitude of the location where our device is present at any moment.

We than match the location data with Geo- fence Zone.

If we get the desired match, the system will then match the location with the area id that lies in Geofence zone.

When we get the match location with area id, the system will play the video which is related to area.

The video will be played on the GLCD display connected to the raspberry pi.

Here is the flowchart of the system.

or at some point a human guide is committed to serve us, who anyway prone to be less expressive or less well-disposed at times. We have disengaged such undesirable circumstances with the assistance of innovation. So that, any one will have the option to appreciate every single snapshot of their visit to the spot without tailing somebody with whom client's recurrence will more averse to coordinate.

Our framework likewise lessens human endeavors and important human opportunity with regards to clients and the visiting place manage too.

In existing framework, there exists human aides which are will in general be less adequate and less amicable here and there. In such cases, client will feel little distress. This issue will be completely expelled. This sort of circumstances can be decreased by the framework. Client will have the option to wander with no anxiety at the top of the priority list and client will have full and precise data through video played by the framework. It can likewise be found in a manner to lessen labor and sparing worker hours.

Our undertaking is easy to use, efficient, vitality sparing and novel framework. Guide's endeavors will be diminished, clients will encounter something one of a kind while finding out about the spots and in addition, by a long shot the most significant part of the framework is that it will be an activity to the Digital India battle just as help our nation to be digitalized.

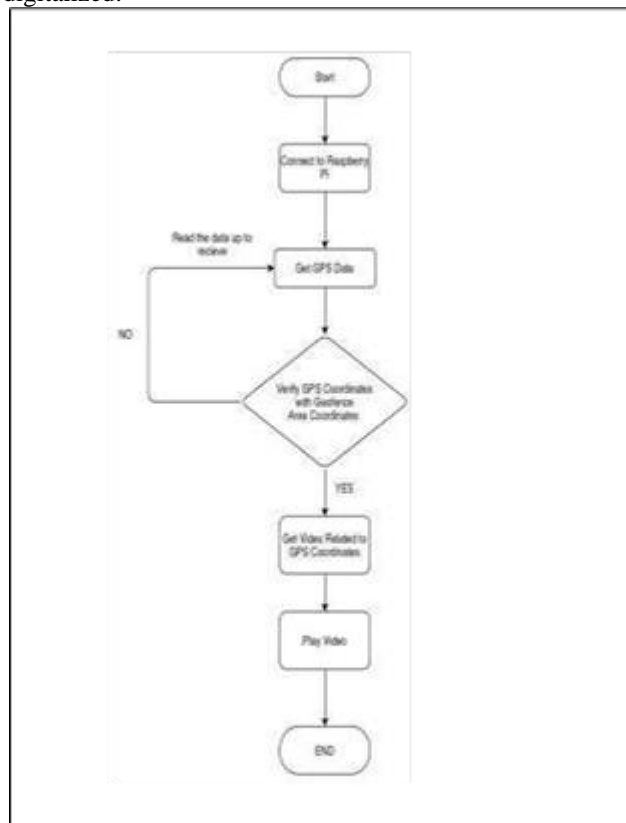


Fig. 2 Flow chart

Conclusion

To conclude the discussion, I Would say that we are very much successful to implement our idea of making introductory tours more fun and more engaging. We have successfully created the device which is working 100% in defined geo- fence area. It is showing all the information about the location within the geo-fence area through videos after detecting the location of user via

Results

Users who needs to wander in an obscure Geo- fence zone, will feel less-information with no direction. In our framework, we are giving direction through innovation. By a wide margin we have seen the notes written to depict the spot GPS..

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