

WDLT (WIRELESS DEVICE LOCATION TRACING)

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ABSTRACT

The project entitled as "Wireless Device Location Tracing (WDLT)" Knowing the location of a user is very important for a great variety of services, especially in context aware and ubiquitous computing. Hundreds of applications that we use daily exploit information are about our position, for indoor localization, we are faced with different possible solutions, varying in the frame of reference, in type of signal used, and number of reference points. In indoor localization RSS value of the signal is important with help of that we can localize the position of the device.

So, now a days there is no silver bullet in indoor localization, and the choice of a system with respect to another always involves a difficult compromise between accuracy and costs, besides user acceptance, scalability and security.

Our purpose is the real time tracking of customer's location in the shopping area by triangulation method, in order to provide additional services, enhance profiling techniques and improve overall marketing effectiveness.

KEYWORDS: WDLT, Triangulation, RSSI, Indoor Localization, IP

INTRODUCTION

Wi-Fi is mainly useful because we can use Wi-Fi network while moving within the signal range at office or public place. Wi-Fi allows cheaper deployment of local area networks (LANs). Also spaces where cables cannot be run, such as outdoor areas and historical buildings, can host wireless LANs. Wi-Fi setup and configuration is easier than cabling process, you can add any number of Wi-Fi customers without hassles and moving to other location also Wi-Fi allows managing or communicating network without laying cables, it can reduce the cost of cables laying charges.

The proposed paper is mainly base on our 'WDLT system' which is use for indoor positioning. Today indoor positioning is well developed field today in many companies it uses for security purpose and tracking the movement of the employees from the company. We are trying to implement the indoor localization concept in mall to provide latest offers to customer, enhance the business, tracing the location of customer in mall and provide graph so customer can reach their destination without any conflict.

OBJECTIVES OF THE STUDY

The project addresses the idea of detecting Wi-Fi enable devices and tracing them on the mall graph of Wi-Fi accessible area and trying to enhance the business of the mall by providing the latest offers to customer. An application is run on any Windows OS system. System is itself work as detection and tracing is itself done on same machine. The basic objectives of the project include:

- Setting up a connection between server and customer.
- Wi-Fi network should use by any user.
- Managing user account on the application.

- Developing the application in Windows environment so user should use windows platform.
- Providing the latest offer in mall to customer by message passing.

SYSTEM ARCHITECTURE

The system can detect the Wi-Fi enable devices in our accessible Wi-Fi range, with help of RSS value of the devices of signals from devices. With help of RSS we can find the distance of devices from central system consisting our application.



Figure 1: Architecture of Proposed System

CUSTOMER SIDE SYSTEM

- First login in to the system
- We can find the RSS value using customer application of the wireless networks available in the mall.
- Using this RSS value we will get distances of the wireless network and customer app.
- Location tracing of the customer will be done on the graph of mall.

SERVER SIDE SYSTEM

- Server will assign IP to customers.
- We will provide login to Admin.
- When customers get connected information about the latest offers to customers by passing messages.
- Address of the shop will given to customers.

MODULES DESCRIPTIONS

Login

- We are providing login for customer and server side with SQL database connectivity. The can choose their own username and password.

Message Passing

- From the server side admin can send a new offers to the customers. Offers are send with the help IP address of the customer's device.
- Server side system going to provide IP to customer device by using DHCP server.
- Offers are receive on the customer side system.

RSSI and Distance

- RSSI stands for Receive Signal Strength Indicator, it gets to customer side system.
- RSSI value is depends on position of customer device with respect to the sensors.
- From received RSSI value system going to calculate distance of the customer from respective sensors.

Tracing

- From the calculated distance customer's system going to locate its position.
- Customer's position will be displayed on the blueprint of mall.
- Even though customer is moving system will trace.
- System will also display location of that shop for which offer is provided to the customers.

CONCLUSIONS

The system focused in finding a solution to indoor Wi-Fi localization for the purpose of tracking costumers moving around in malls, in order to provide additional services, offers and improve marketing effectiveness. This system is mainly developed for customers comfort.

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