Review on Data Analysis & Broadcasting Using Ibeacon Technology

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Abstract -

Data mining technique provides the meaningful information. This information is useful in market-basket analysis. By applying Apriori algorithm on transactional database with minimal support & minimal confidence frequent item set are generated. Ofers ,sales generated using analysis on frequent itemsets & these result are broadcasted to the customer on mobile with the help of iBeacon device. It provides easy way to promote the products.

1. INTRODUCTION

Data mining is the core process of knowledge discovery in database. Apriori algorithm is improved by reducing the number of scanning database. The algorithm reduces the storage room, improves the competency of performance and correctness of the algorithm.

It helps to generate sales & offers which will be broadcasted using ibeacon technology.ibeacon is a newly emerging bluetooth low energy device (ble) technology useful for indoor tracking.

Ibeacon has its network range like immediate, near, far, unknown.

2. LITERATURE REVIEW

The Apriori algorithm was proposed by Agarwal and Srikant in 1994.Apriori is designed to operate on databases containing transactions (for example, collections of items bought by customers, or details of a website frequentation).

The improved Apriori algorithm can solve the problem of traditonal Apriori algorithm .After analyzing the Apriori algorithm,this algorithm is incapable due to it scans the database several times .Based on the planing of getting to database once,a new recovered algorithm formed on the Apriori is put forward in this paper. Experiments show that it can mostly adds computation competency.[1]

This algorithm is used for calculating support and confidence. iBeacon is a technology standard developed by Apple, that was introduced in 2013 at the World Wide Developer Conference (WWDC).

This technology is used to create a small & secured network. iBeacon broadcast information which is then received by the App of customers. This type of service is not yet implemented in any store like iNSPIRE, Big-bazaar, etc

iBeacons use coin cell batteries for their power supply,but it could be any sort of battery or it can be used for up to 2 years without replacing it and larger batteries have an even longer lifespan[2]

Promising sensing application is the iBeacon indoor Proximity technology proposed by Apple, where a BLE enabled mobile device can determined its position in an area by knowing how close it is to strategically placed simple wireless transmitters , named iBeacon[3]

3. PROPOSED SYSTEM

The proposed application has following objectives:

- *Today we are living in a world where everyone is so attached to the mobile, people want to do every thing on the mobile.*
  Nowadays shopping is also done on mobile phones. So we want to make the real

shopping experience more interesting and interactive.

- *Suppose we are moving by a shop and we want to shop something so we need to reach that shop and ask for product, but if in case you get some notification from the shop that today we are 50% off then you can reach that shop and shop that product.*

- *That's what we want to create an interesting shopping experience.*

The requirements for the project are:

HARDWARE AND SOFTWARE

For Destop Application

- *.Net*

- *mysql*

For Mobile Application

- *Platform:iOS 7.0.1+*

- *Source code:Objective C*

- *Development IDE :Xcode 7.0 BETA*

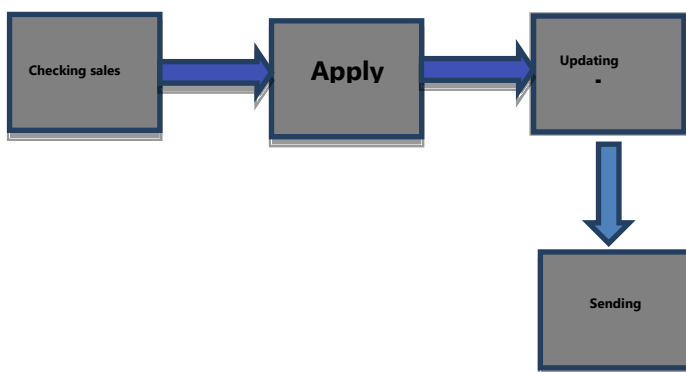- *iBeacon/any apple device*

5) WORK FLOW

Fig (1.0) represents the work flow of our application and the hardware.

I.   *First we are creating the iOS application that detect the iBeacon and we are using iDevice that act as ibeacon. Then whenever we go near to the beacon range the app detects the IBeacon and shows the Offers.*

II. *On the basis of sales i.e. which product sale is high and which product sale is low, we use Apriori algorithm on that database which create offer.*

III. *Apriori algorithm is used for generating offers, for example: customer buy a milk then he also buys bread with it .Apriori algorithm generates offers by calculating support and confidence. FOR creating offers we are developing web application ,which is connected to the database .Using that database we are generating offers.*

6. iBeacon

iBeacon is a protocol developed by Apple and introduced at the Apple Worldwide Developers conference in 2013.Various vendors have since made iBeacon-compatible hardware transmitters typically called beacons –a class of Bluetooth low energy(BLE) devices that broadcast their identifier to nearby portable electronic devices .The technology enables smart phones ,tablets and other devices to perform actions when in close proximity to an iBeacon.

iBeacon uses Bluetooth low energy proximity sensing to transmit a universally unique identifier picked and several bytes sent with it can be used to determine the device's physical location, track customers or trigger a location based action on the device such as a check in on social media or a push notification.

One application is distributing messages at a specific Point of Interest ,for example a store, a bus stop, room or a more specific location like a piece o furniture or a vending machine.

Ibeacon can change the whole shopping expericence in a shopping center.It starts at the entrance to the parking lots. An iBeacon will push a notification when you are planning to visit and the app will navigate you to the nearest parking lot[3].

7. CONCLUSION

This is the complete environment for the retail shops and shopping mails. These two modules(desktop app and mobile

app)helps to analyze the database of shop and send the results to mobile devices in the form of notifications.

These type of projects can be implemented in museums, art galleries

iBeacon technology can be used in various applications such as in art gallaries,retail shops and museums etc .Researcher working on automatic detection of iDevices, minimizing signal damping for long range detection. Apriori algorithm can be improvised by database scan .It requires some data structures to store transactions.

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iBeacon

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Apriori

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