



Product Management & Shopping Guidance System using GSM & Object Oriented Programming

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ABSTRACT: Main aim behind this system is guiding a consumer for shopping by sending one SMS to supermarket inquiry number to inquire about goods information from anywhere and at any time like quantity, price whether item is available in stock or not, in which rack or floor the item is placed etc. This system provides good service to consumer at very low cost and reduces the wastage of time to find the particular item. Selling will be definitely increased and it is beneficial for both consumer and merchant. Inventory management is also easy for merchant.

Keywords: GSM, PC, SMS, Microsoft Visual Studio

I. INTRODUCTION

Supermarket has a lot of stock of different goods and other materials. Consumer is facing the problem to find particular items what they want to purchase. They are frustrated about where to find things, determining the right price and the impersonal nature of service. This is only cause the waste of time. Sometimes it is also happen that when we go for shopping to purchase goods but it is not available in stock then it is worthless for consumer and it is totally wastage of time. And because of large stock of goods, there are facing problem by merchant for arranging new inventories all time.

Above mention problem is resolved by using this system. Consumer is sending one SMS to Supermarket number to inquire about the items which he wants to know. Example supposes any consumer want to purchase shirt then first he/she will check the status of item by sending SMS like "SHIRT" to particular inquiry number from anywhere and anytime and replay will be sent back to consumer which will contain the information like "Product-Shirt, Quantity-300, location -2, Product is available". If product is not stored in database and consumer send product name to the inquiry number then replay will be sent back to consumer which will contain information like "Product is not available". And from merchant side, once location of goods is fixed, it is to be easier to maintain product data base by adding new product name, quantity and location in table row and save it.

II. RELATED STUDY

For shopping guidance in existing system, there is one intelligent cart which will be equipped the RFID reader for the consumer to inquire about goods information. It provides location of goods. But it is too much costly because RFID readers are set up in each cart and one server is for goods database and merchant have to manage all the reader information using server. If one RFID reader is faulty then corresponding programming is need to change [1, 2, 7]. By using of RFID tags and readers, it's convenient for consumers to find their goods in the shopping mall. However, its disadvantages are very obvious, such as the significantly increasing cost by using customer terminal integrated RFID reader, and the difficulty of arrangement of label because it may bring about many problems like label collision [3, 4]. The wireless touch screen is integrated in the shopping cart can automatically broadcast guiding information of goods. There is an extra cost for LED and it is not effective due to the noise, distractions and the impersonal nature of the method. [5]. The personal shopping assistant (PSA) is provided to the consumer and a centralized server

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communicates consumer using PSA. But for small shop or supermarket, cost for implement this system is not be accepted. And for new consumer, shopper has to modify in programming for providing new PSA [6].

III. METHODOLOGY

Block diagram of this system is shown in figure 1. This system contains PC, SIM 300 GSM module, RS-232 cable and user mobile.

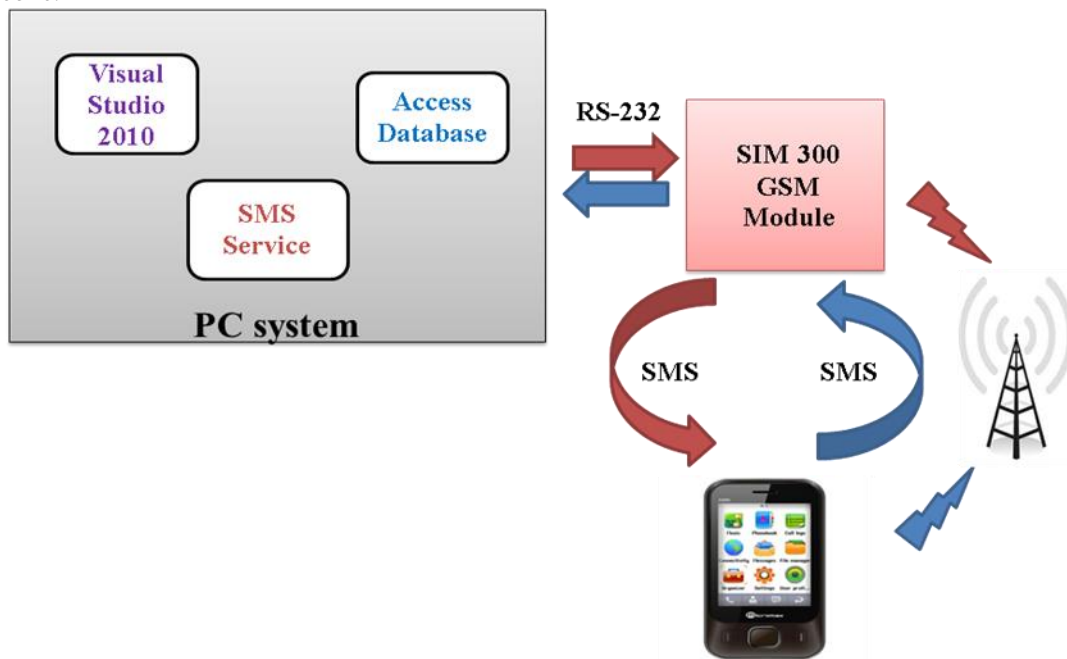


Fig.1 Block diagram

A. PC system

As shown in figure 1 PC system contain main three parts: Access Database, SMS Service and Microsoft Visual Studio 2010 software.

1) SMS Service

Most of the applications have a SMS feature in-built enabling the users to send a simple text to mobile numbers for instant correspondence. For its speed, accuracy and increased productivity, SMS is one of the most successful services among the various wireless services.

To run this application first of all double click on SMS service and then after one window is open, in that window two box is shown. One is for start SMS service and another one is to stop SMS service. Whenever SMS service is start, it is possible to receive SMS from consumer and corresponding replay is send to consumer mobile.

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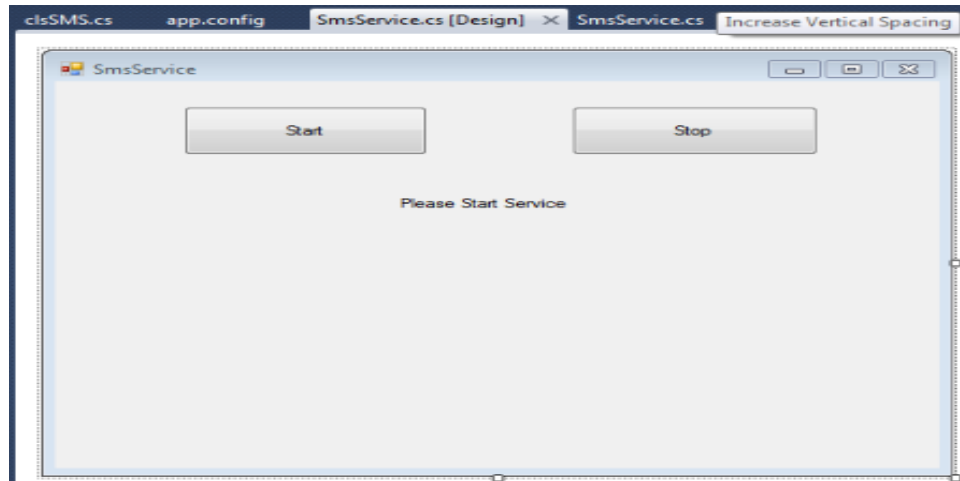


Fig.2 SMS service

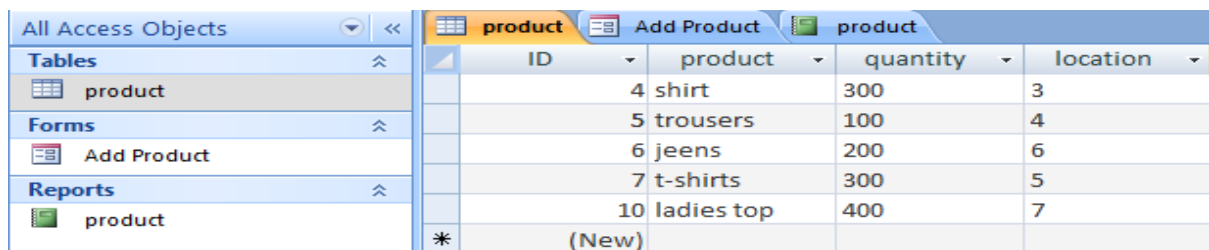
2) Access Database

Access database is a database management system from Microsoft that combines with software. It can link directly to data stored in other applications. Some applications such as Visual Studio will use the Microsoft Access database format for its tables. Database table is used to record all goods' information of supermarket. It is managed by merchant for inventory management.

Features:

- Edit in existing data in the database, such as changing the location of an item.
- Delete information, if an item is discarded.
- Add new data to a database, such as a new item in an inventory.
- Organise and view the data in different ways via SMS.

For example here, row of table is defined for product and column is defined for product name, quantity, location of goods. We can also include price and other details of goods. And all time, there is no need to change in programming for new inventories. So it is very flexible inventory management for merchant.



ID	product	quantity	location
4	shirt	300	3
5	trousers	100	4
6	jeans	200	6
7	t-shirts	300	5
10	ladies top	400	7
*	(New)		

Fig.3 Product Database

3) Microsoft Visual Studio 2010

Software designed for this system is Microsoft Visual Studio 2010. Object oriented programming providing a model with a set of controls and infrastructure that make simple web application to build. It includes a set of control that encapsulates common user interface elements, such as text boxes and drop down menus. The visual studio includes tools for developing applications for smart devices. Using that you can create, build, debug and deploy application that run in PC, mobile phones, and other resource-constrained devices.

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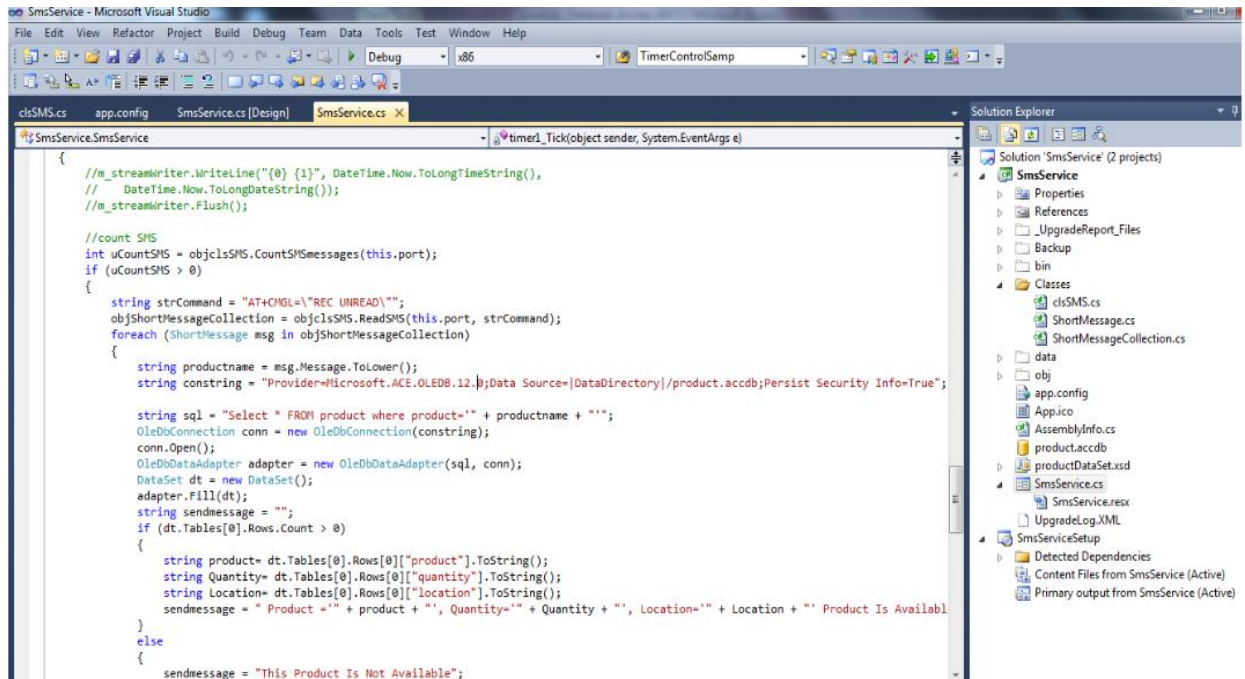


Fig.4 Microsoft Visual Studio

B.GSM MODULE

GSM Modem is able to accept any GSM network operator SIM card and act just like a cell phone with its unique phone number. It can also work in GPRS mode to connect internet. AT command is used to communicate between PC and SIM 300 modem. The modem can either be connected to PC serial port directly by using RS-232 cable. 12v power supply is applied to GSM modem to activate it.



Fig.5 GSM SIM 300 modem

IV. EXPERIMENTAL RESULTS

Figure 6 shows the connection between PC and SIM 300 GSM module using RS-232 cable. After set-up this connection, start SMS service which is described in figure 2. Now it's possible to receive SMS from consumer and to send SMS to corresponding consumer.

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Fig.6 Connection between PC and GSM SIM 300 using RS-232 cable

Result of this application is shown below. For example one consumer want to know the information of shirt before going to purchase it, so he is sending one SMS “SHIRT” to inquire number and automatically corresponding replay is send from system to that consumer’s number, it is shown in the figure 7. This replay contain the information of SHIRT like, “Product-‘Shirt’, Quantity-‘300’, Location-‘3’, Product is available”.

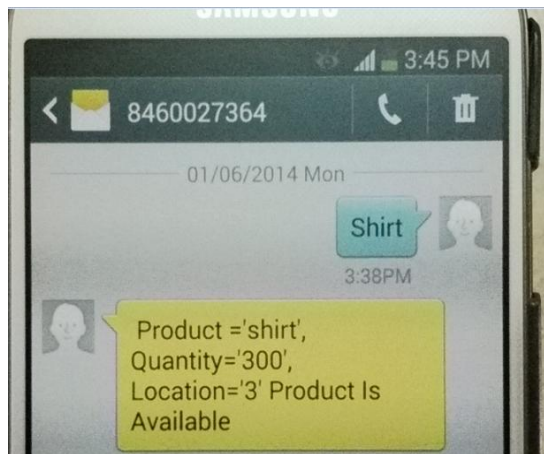


Fig.7 Consumer mobile with replay from system

Suppose product is not recorded in database by merchant and one consumer is sending product name “DRESS” for inquiry to inquire number then replay is back to consumer’s mobile which contain information “Product is not available”, it is shown in figure 8. we can show that DRESS is not stored in the product database in figure 3.



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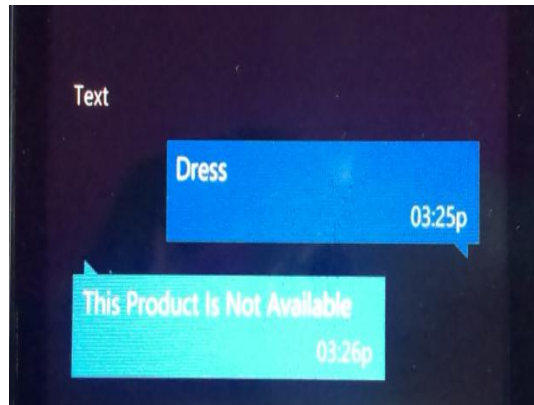


Fig.8 Consumer mobile with replay from system

V. CONCLUSION

From this paper we can provide good service to consumer to inquiry about goods by using just one SMS and it overcomes lots of disadvantages in traditional shopping guide system for supermarket, such as inefficient management of commodities and inconvenient shopping .It is at very cheaper than existing system for both merchant and consumer. This service provide attention to consumer based on individual needs, without movement over and there to find items, or causing distractions for other in the supermarket .It facilitates, save time, satisfy the consumers' requirement and consumer can enjoy the convenient service. And for merchant it is very easy to maintain stock details in database. There is no required extra memory for receiving SMS of consumer because once it is read receiving SMS, it is automatically deleted by system.

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