Bakery Management System

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Abstract: It is built to manage the bills, orders, client, sales report, stock management and other additional options to increase both customer satisfaction and also the growth of the bakery. Bakery Management System is a flexible and versatile package which is customized to meet customer needs, through 12 hours of call and email availability to order products and thus this application paves the way for the next generation of green computerized baking.

Index Terms: Bakery, Management, Online, Alerts, Billing.

I. INTRODUCTION

The Bakery Management System project is based on .NET (read as dot net) platform. The bakery is part of a large food service chain that provides desired food items to the customers in person and taking orders is also a part of this firm. The manger of this bakery shop is concerned about managing the bakery and also is keen about the customer satisfaction. The complex part of business making is to maintain the firm, gather reports and know the revenue of the bakery. Thus the main theme behind this project is the facility to easily maintain the bakery and also collect orders to the customers via phone call and e-mail. This project gives major importance to customers by giving discounts based on their purchase history. Thus the more the customer consumes the greater he becomes the asset of the company.

II. THE EXISTING MODEL

The model or methodology that is still being used are defined the existing model. The existing models used in small scale bakeries are just the pen and paper work, so every paper should be filed thus this leads to a hectic problem when the report is needed to be generated, thus when the man power increases there is chances of getting lots of errors. So it is an intelligent plan to get upgraded to a management system. But whereas the large scale bakeries are practical using softwares but these softwares are limited in options. Some of the disadvantages of the existing model are:

A. Only billing software is available

The software used in large scale bakeries do billing very well and it could also partially manage the bakery by providing limited options like revenue report, stock report etc. But there are several other problems that are difficult to manage. For example, there is no record maintained for the employers working in the bakery which is an important task in management.

B. Lots of man work

As discussed earlier, since only billing is concentrated there is a larger part of work that needs attention. Every firm uses the software because of a single reason that it must reduce the work of the user. For example, the cost of raw material that are purchased for the bakery is need to be manually calculated by the admin and he must get the revenue report for the software, and deduct with the raw material expense and at last calculate the overall revenue of the bakery because the software doesn’t keep track of the daily expenditure. Thus doing this process in daily basis is a hectic job.

C. Usage of paper

Since the small scale bakeries still use pen and paper methodology there is lots of usage in paper. These papers are not even recycled in an small bakery because these are needed for the revenue calculation each month or year. Even though the large scale bakeries use software for billing, there is still usage of paper in the form of bills, reports, order slip etc.

D. Zero Security to data.

Since still in many bakeries pen and paper work is done there is necessity of maintaining registers, thus there is no security for the data, and hence there is a chance of information leakage about the company’s assets to others.

E. No Alerting System

Even though stock management is being covered by the existing software, there is no alerting option in the software for the admin, so each time the admin or the user must be aware of the stock by cross verifying it regularly. This is a major problem seen in an large scale bakery.

F. Order Management

The orders are taken only in person or via phone call; there is no alternate method for taking orders. Moreover orders are managed very poorly because these are managed only with pen and paper.

III. THE PROPOSED SYSTEM

As said earlier the proposed model of the bakery management system is based on .NET platform. The proposed model is separated into four parts logically as Billing, Management, Alerts and Orders. These are categorized in such a way that the complex part of the whole bakery management is separated into four smaller categories such that it is easy to maintain the bakery.
The main goal of this proposed model is to overcome the weakness of the existing model and make the task of managing a bakery easier than usual. Some of major improvements in the software are discussed below:

A. Importance for Management

A regular management software consist of management options like stock management, revenue management etc. But there are other additional option that are required, for example Employee Management, Some employers get salary on daily basis and some weekly and some on monthly basis, so there is an necessity to keep track of this, moreover in an large scale bakery it is difficult to keep track of all the employees. Hence this software gives importance to the complex part of running a business that is the management; this software has additional options like Employee Management, Product Management, Customer records and also keeps track of the daily expenditure of a bakery.

B. Customers, The priority

The customers are given first priority in any business firm because without customers there is no business. Hence here the customers are given offers and discounts based on their purchase history. Here a database is made for customers and each time he buys products, the total cost of products bought by the customers is recorded in the database, hence tracking this helps the admin to give special offers and discounts to particular customers based on their purchase value. This increases the customer satisfaction and the customers bond to the firm.

C. Reducing paper usage

One of the major goals of this proposed model is to reduce the usage of paper and is reduced in most of the places like not using papers for reports, billing and in orders. The reduction in usage of paper in billing is explained with an example, each time a customer asks for a bill, the admin fetches the customer records and collects his e-mail id and mails him the bill. Thus the papers are reduced in large quantity and this helps the company to move green.

D. Alerting System

As discussed earlier in a large scale bakery it is difficult for the admin to keep track of his stock, because each time he can’t go and check for his stock regularly. Hence here as a part of the proposed system some new ideas are introduced like payment alert, stock alert and event alert. A part of the alerting system is explained here with a example, Consider there a product named A, if the stock of A gets reduced less than certain value, then the admin is alerted with an message box that the products are being out of stock.

E. New way of taking orders

Usually the orders are taken in person or via phone calls only, and since the company is moving green and a new methodology of taking orders is introduced (i.e.) orders taken via E-mail. Thus by giving an standard email id to the customers and efficient usage of the software, it is easy to maintain the orders without any issues and also move green by avoiding papers.

IV. MODULES

Modules are set of standardized parts or independent units that can be used to construct a more complex structure, such as the bakery management system. Since the software is fully used by the admin, only admin modules are available and thus each module is explained below:

A. Billing

Clicking onto the billing module an menu is seen this helps the admin to bill the purchased products of a customer. The procedure takes place as follows, after the customer selects the items from the bakery, and he is ready for payment, he’s sent to billing counter where this software is used to print the bill for the customer, and then payment is done. The bill are printed only when requested by the customer or else the bill would be e-mailed to the customer.

B. Management

Clicking onto the management module, it is separated into sub modules based on their usage, each module is explained below:

1) Revenue Management

The revenue management option helps the admin or the system operator to know both the monthly and yearly sales report of the organisation. This module shows the overall sales report, the amount of raw material purchased, product returns etc. Thus deducting the raw material cost and product returns from sales, the revenue of the organization is obtained by using this module.

2) Product Management

Each product from the market is given a unique id by the admin and this is termed as product id. The product id is the key thing in product management. Here by using this module the user or admin can enter the
product id and know all the details about the product, create new id for a new product, alter the rate of existing product and can also change the cost price and selling price of the product if necessary.

3) Customer Records
   A database is maintained for the customers by using the mobile number as customer id and details like customer name, address, phone number, e-mail id, date of birth, customer value etc. is maintained. The value of the customer is decided by recording the amount of products brought from the bakery. If the customer buys more, he remains a valuable asset to the firm.

4) Employee Management
   By clicking on this module, it helps the admin to manage his employee, each employee is given an employee id and this id helps the admin to keep track of his employee by knowing details like employee’s name, salary, designation, phone number, address etc. This also acts as a major tool in calculating the revenue of the organisation.

5) Daily Expenditure
   By clicking onto this module it takes the admin to a form where the admin can keep a note of the daily expenditure of the bakery, it may be buying raw material, doing payments, giving salary etc. this helps for revenue calculation of the firm.

C. Alerts
   1) Payment Alert
      Each time the admin commits for a payment for someone via a bank or cash, he immediately notes down this in the application, specifying the cash along with the date of payment. At the beginning of each day the admin gets the alert for the payment to be done that day and also whether it’s done via bank.

   2) Stock Alert
      This is one of the most useful option, here the products are set a minimum value by the admin, if the number of products go less than that of the specified count the admin is alerted by the system. For example, consider there a product named A, if the stock of A gets reduced less than certain value, then the admin is alerted with an message box that the products are being out of stock.

   3) Event Alert
      In the customer records database, the date of birth of the customer is collected, and during that day, an alert is shown in the event alert area to the system user, this helps the admin to wish his customer on his birthday via an SMS in behalf of the bakery, this helps the admin to increase his customers value towards the bakery.

D. Orders
   A database is maintained for the orders by using the order id and details like customer name, address, phone number, e-mail id, product name, date of delivery, quantity etc. is noted. This helps the admin to easily maintain his orders and delivery the products in time.

V. RESULTS AND DISCUSSIONS
   The input here is the user giving inputs to search records and the records that are fetched back are the results. For example, entering the user id is the input and when all the details are generated about the customer it is the output or the result. Refer figure 2 for further understanding.

   ![Figure 2](image-url)
   This project gives advanced security to the data and the admin needs not to worry about information leakage or data loss. The bakery management system is designed in such a way that each user has their own type of restriction; the following are the system user and their restrictions.

A. Administrator
   The admin is given an admin id and password, after entering this, authentication process takes place and the admin is let in if he is genuine. The admin can perform each and every task in the system; he has zero restriction and can use all the four section (i.e.) Billing, Management, Alerts and Orders. The admin can later add his first priority and second priority user by authenticating them with individual user id and passwords.

   ![Priority Diagram]

B. System operator (Priority 1)
   The system operator is a single user who is the first priority according to the admin. Hence the system operator has the second most rights after the admin for the system. The system operator is also given a user id and password by the admin such that the user is given restrictions based on his priority. The system operator can use all the four sections (i.e.) Billing, Management, Alerts and Orders. But the restrictions given by the admin to the system operator is the system operator
cannot access the revenue reports of the firm, but can access, edit and save other process in the system.

C. User (Priority 2)

The user may be a single user or multiple users who are given the second priority according to the admin. Hence the user has the third most rights after the admin and system operator for the system. The users are also given an single user id and password for all the users such that these users are given restrictions based on his priority. The user can use only a single section (i.e.) billing. Thus the user cannot edit or save anything in the save but only can type and print a bill for the customer.

CONCLUSION AND SCOPE

The bakery management system has been successfully developed and implemented to deliver orders to customers and also it increases the customer satisfaction as required. The developed system may be updated or modified at any point of time. Also the system serves a good purpose, as it is very helpful to all those who needs to carry the business and run the firm in an effective, successful and easy way. Owing to the widespread necessity of this utility for long time the above mentioned system has been implemented.

The further scope is that in future the developer who is interested in this system, can use further technologies and can bring in facilities like sending SMS and E-mail from the application rather than using a third party application.

References


