

Smart Canteen System

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ABSTRACT

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With traditional canteen ordering systems, customers face many issues, including lost account details, reduced security, and manual issues. The purpose of the canteen ordering website is to overcome the shortcomings of traditional ordering systems. It provides customers with calorie consumption reports, more flexibility and reliability.

This white paper outlines new techniques used in canteen ordering systems such as cloud computing.

Keywords: Frequent order, Payment mode, Calorie Report, Diet Plan.

I. INTRODUCTION

Can the Easy Canteen Ordering System increase the efficiency of everyday commerce performed in the cafeteria by computerizing the entire current system? In this new system, many of the existing business processes, such as total amount, are ordered using the user ID of the system. Not only does this save you time, but it also prevents you from getting errors with the correct input. This system provides a user ID and password for secure access from the server side. Provides customers with a calorie report on their daily orders. Users can order for one day or more, such as two or five days. For quick access, prioritize food in your order list and serve it at your convenience. It also provides customers with a frequent order list with a daily calorie report, depending on their daily orders.

II. METHODS AND MATERIAL

A. Literature Survey

We studied the following IEEE paper.

1. IN-Time Billing process for canteen management system[1].

Publication

Held on June 13 2015 in SV College of Engineering, Tirupati.

Author: 1.J.Rajanikanth 2.B.Muniraja

Technology

Microcontroller, power supply, matrix Keypad, RFID reader, PIR sensor, real time Clock, 2 * 16 LCD display

Advantages

- Measures the passage of time to maintain a calendar and clock.
- Ultra-low power design to support battery powered systems.

- Provides seconds,minutes,hours,
- Day of month, month,year,day of week,and day of year

Disadvantages

- This system is costly because the use of ultralow power designs.
- Data is stored in local database

2. Automated food ordering system with real-time customer feedback [2].

Publication

International Journal of Advanced Research in Computer Science and Software Engineering Research Paper (www.ijarcse.com).

Issued 2, February 2013.

Author: 1. Priyanka Shidankar 2. Madhura. M. Joshi 3. Shweta S. Tanpure

Technology

MySQL, Andoid 2.2.3 Gingerbread, AOS-RTF.

Advantages

- It combines wireless technology and android mobile OS to automate food ordering process.
- It eliminate or at least minimize the flaws in conventional system by Automating the Food Ordering System in restaurants.

Disadvantages

- It implements real-time feedback between restaurant owners and customers regarding order status.
- More security is needed because of wireless Technology.
- There will be no Authentication service is provided.

3. Digital Ordering System for Restaurant Using Android[3].

International Journal of Scientific and Research

Publications, Issue 4, April 2013

Author: 1. Apurva Joshi, 2. Prof. Mr. S. R. Lathe, 3. Niranjana Jadhav, 4. Prachi Oke, 5. Ashutosh Bhargave

Technology

Android version 2.2.3, Eclipse Indigo, JSP/SERVLET, SQLite, Java Se 6 programming language

Advantages

- Our implementation works on tablets and Smartphone does not require paper work, so paper waste is avoided. The order does not use paper.
- In addition, menu cards will be digitized.
- Customers who go to restaurants do not have to wait for the waiter to receive the order. As soon as you get to your seat, order whatever you need.
- We will contact you as soon as your order is ready, so even if your food is ready, there will be no delay in delivery.

Disadvantages

Tablets would cost us more as they are more costly the simple paper; hence it would cost us more.

Common Problem with Manual Working

This section concludes the common problems which are occurring with using manual manner as seen in many of the cases in the current system. Since many of the processes are completely done through manual mean, therefore it exhibits the common problem of manual works. First, manual workings are less sufficient. For example, processes such as staff retrieval or payment are slow and time-consuming. Second, manual workings tend to generate incorrect outputs due to mistakes done by human, especially mathematical calculation. Besides, manual system is having difficulty in generating useful reports such as monthly report or order by restaurant report which are helpful and essential in decision making. More importantly, most of the critical information such as order and sales are kept in physical document and the consequence will be severe to have lost these valuable information [4].

Canteen Ordering

When placing an order for a staff member or customer, the staff in the cafeteria receiving the order may miscalculate the total order. What's more, staff also need to remember whose order belongs to whom. Otherwise, it will be confusing.

In addition, since payment for cafeteria orders is made with coupons, staff may forget to issue coupons or customers may lose coupons in the middle of payment.

Canteen Order Payment

Although there are many counters available in canteen, but during peak hour, the queue for payment can be long and cashiers will be occupied serving customer. Hence, increase the opportunity for cashier to make errors. Besides, cashiers need to ensure that there is a enough change for numerous transactions in one day.

B. Objective

1. Efficiency Improvement

This system can increase the efficiency of daily business transactions performed in the cafeteria by computerizing the entire current system. This new online system leverages many of the existing business processes such as totals and orders. Not only does this save you time, but it also causes no errors if you have the correct input.

2. Sales Improvement

This new system can greatly benefit the coffee shop by increasing the efficiency of day-to-day business processes and generating useful reports using user IDs in decision making. Current business processes can be upgraded to speed them up and execute them accurately. Therefore, we can support more businesses at once and expect a direct increase in cafeteria sales.

3. Business Expansion

Computerized systems are the foundation of large companies because they can accommodate the many businesses of large companies. With this system, the canteen business can grow exponentially by speeding up day-to-day business processes to accommodate future growth in business transactions and increase business transaction throughput. In addition, this system can be designed to be scalable to accommodate the future growth of the owner.

III. RESULTS AND DISCUSSION

PROPOSED SYSTEM

A. Cloud Computing

In order to overcome the shortcomings of the conventional system and provide customers with an efficient dining room ordering system, we propose this system using cloud computing technology. Cloud computing provides a means of accessing applications as a utility over the Internet. This allows you to create, configure, and customize her online application. Cloud computing refers to remotely manipulating the configuration and access of hardware and software resources. Provides online data storage, infrastructure, and applications. Cloud computing is platform independent as there is no need to install the software locally on the PC. Therefore, cloud computing makes our business applications mobile and collaborative [5,6].

B. Algorithms

1. Algorithm for setting the priority of food items

STEP 1: Start

STEP 2: Create array „a“ of size 10

STEP 3: Give input „x“ STEP 4: for(i=0; i<=4 ; i++)

```

a[i] = x print sequence = i i++ STEP 5: do{
    switch(sequence) case 0: count++
case 1:count++ case 2:count++ case
3:count++ case 4:count++
}while(i=4)
    
```

2. Algorithm for setting the priority of food items

STEP 1:START

STEP 2: Customer order any entity say "input" STEP

3 :Extract quantity of protein, carbohydrates, fats getting from entity "input" from master

STEP 4: Initialize $p=0, c=0, f=0$

STEP 5:Applying algebraic sum on quantity of proteins, N

i.e $\sum_{i=0} (p,pi)$

STEP 6:Applying algebraic sum on quantity of carbohydrates,

n
i.e $\sum (c,cj)$

j=1

STEP 7: Applying algebraic sum on quantity of fats,

n
i.e $\sum (f,fk) \quad k=1$

STEP 8: $P= 4 * pi$

STEP 9: $C =4* cj$

STEP 10: $F=9* fk$

STEP 11: Print P, C, F

STEP 12:Stop

C. Modules

1. Canteen Order Management Module

User Requirement

In this module, users are able to order their food and cancel their order if necessary.

System Requirement

1.1. Add Order

Input: Customer provides his order information to the order taking staff who will then enter it into the system. Validation check will be performed on inputted data to ensure the accuracy of the data. An error message will be prompted if there is any incorrect input data. Process: System will calculate the total amount for the order and then put the order in a queue.

Output: A new order is finished added.

1.2. Order Sequencing

Process: For newly added orders, the system dequeues to queues on a first-come, first-served basis and is cooked by the chef after all previous orders have been processed. Output: New order is added to the queue.

1.3. Delete Order

Input: The search order process starts first. Process: Staff can now delete the selected record by clicking the delete button provided. A confirmation window appears asking for the user's final decision. Output: The selected record will be deleted from the system and a message will be displayed indicating that the deletion was successful.

1.4. Total Calculation:

Process: System will retrieve the piece of a food for a particular order item in an order and multiply it with the quantity ordered for this order item in this order. The total is then added with the order item in this order. This process continues until all the order items in an order are covered.

Output: The total amount of this order is displayed on the right field by the system.

1.5. Add Payment:

Input: Canteen management inputs the payment information which will be validated into the system. If these information are proved to be false, an error message will be printed to ask user to re-input. Process: These information inputted are storing into the system.

Output: When the addition is done, system will display a dialog to the user which contains the summary of the action.

1.6. Post Payment

Input: The system will go through the search process first.

Process: Users can now choose to post this payment by clicking the payment button provided. Before the actual post, the system will display a dialog to get the user's confirmation.

Output: Displays a window informing the user that the record has been posted and cannot be changed or deleted in the future.

2. Customer Maintenance module:

User Requirement

This module stores and maintains the customer details such as name, phone number etc. which can be used as reference for contacting the customer.

2.1 Add Customer:

Input: Customer information has been entered into the system. A validation check is performed before actually saving the data. If an error is found during data validation, an error message will be printed.

Process: New customer information is stored in the system.

Output: The system will display a dialog informing the user that the new customer information has been successfully saved.

2.2 Edit Customer:

Input: Customer information where the user wishes to delete will be searched first.

Process: User can now edit the fields which he would like to modify. Other unchangeable fields are showed as a read-only. A expected message will be printed to correct the user if he makes a mistake in changing the fields.

Output: System will stored the modified record and a window will pop out after the storing is complete.

2.3 Delete Customer:

Input: The desired record is searched first. Process: Click the Delete button and a dialog will appear asking for user confirmation.

Output: The system deletes the record and displays a message after it is deleted.

3. Order Maintenance module

User Requirement

This module keeps track the catering order of the customer such as make order,changing order as well as cancel order.

System Requirement

3.1. Add Order:

Input: The user enters the order information into the system, a validation check is performed before saving the data and a dialog is displayed to warn the user if the entered data is incorrect. Process: A new order record is stored in the system. Output: The system will display a message after the record has been successfully saved to the system.

3.2. Edit Order:

Input: The system searches for the record that the user wants to edit.

Process: The user can start a change to the order, but the fields that do not change remain. An error message is printed to warn you if the user makes inappropriate changes.

Output: The system updates this record and displays a dialog when the update is complete.

3.3. Complete Order:

Input: The order which will be completed is searched first.

Process: User can now complete the order by selecting the "completed" status from the combo box and save the record.

Output: A window will be prompted to notify the user that the order is marked "completed" and cannot be modified and removed anymore.

3.4. Cancel Order:

Input: The record which user wants to delete is to searched first.

Process: Once a record is found, the user can select the cancel status to cancel this record.

Output: The order is cancelled and a message is printed as a summary of this process execution.

3.5. Total Calculation:

Process: The system calculates the total amount of the order based on a predefined algorithm. This includes order items and their quantities, service fees, and more. Output: Once the total amount of the order has been calculated, it will be displayed in the corresponding field.

3.6. Add Payment:

Enter: Payment details are entered into the system and validated to ensure accuracy. If there is a problem with the input, the system prints a dialog on the monitor to draw the user's attention to the error.

Process: The system creates a new record to hold the new payment.

Output: New payment is successfully saved by printing a message to the user.

3.7. Post Payment:

Input: System will search the payment a user wants to post.

Process: User will click the button to post this payment and a dialog will be displayed to get user's affirmation. Output: Payment is considered posted and henceforth cannot be amended and erased from system.

IV. CONCLUSION

It overcomes the problems associated with traditional canteen management systems and provides scalable and reliable canteen orders. It also produces a calorie report to help customers to know about their daily

calorie intake. Provides a frequent order list for quick orders. And all the data is stored in the cloud.

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