Canteen Automation System

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Abstract - *Now day's we see people don't have enough time to spend in the canteen only waiting for the waiter to consider their order. Many of you visit the canteen for lunch but due to fixed time duration, you need to return to their offices and colleges. So, this application is developed to reduce the time of ordering without any reminders. It is very difficult to maintain the system manually if there is some confidential information then it will be a tedious task to perform. The canteen automation system allows users to register, find, and select the food items from the menu card generated on the webpage for ordering food through online mode. Through e menu card order will directly appear on the chefs' screen who is going to cook food according to your preference.*

Key Words: Automated, Food details, Order Management, Customer Management, System Management etc.

1. INTRODUCTION

In this age of fast food, many canteens believe in quick preparations and speedy delivery of orders in given time duration. Rather than offering reserved dining to rich people. Recently people are placing orders on phones, but still, there are some disadvantages that customer faces an inconvenience that customer didn't have a copy of the menu, lack in order placement that order is correctly placed or not, the necessity of employee also increases at least there is some for taking orders from customers. The canteen automation system involves a technique of ordering food. The main purpose of this system is to greatly simplify the ordering management of the system for both the customer and canteen. Suppose a customer visits a canteen webpage, then he/she clicks on ordering module then a menu card appears with complete available options and amount details according to preference customer made a selection of an item, after ordering the item customer need to review the details before checking out the form system.

This shows an instant confirmation of the selected item for order this represents the accuracy of the system that operations are performed in minimum time duration.

This system shows the total load on the canteens as the entire process is accomplished and the ordering of items are automated

Once the order placing is done on the webpage and all the information is retrieved through the database then the task of an application has to accomplish. After the accomplishment of orders, delivery details are placed in a very concise manner. This allows canteen employees to quickly analyze orders as orders are placed for items that are selected by customers in minimum duration without any confusion.

2. OBJECTIVE

The main objective of this project is to manage canteen details like food, staff, and orders. This project is totally for administrative purposes, only administrators have the authority to access it. The purpose of this project is to build an application and reduce manual work for managing activities. It tracks the details about orders, student details, and staff.

Functionalities are as follows:

1) Rapid food ordering

2) Acquiring orders in minimum time

3) Low cost of items

4) Less use of paper

5) Ordering and billing are computerized

1) **Rapid food ordering:** the ordering of items needs to be done in a minimum time duration without any delays.

2) **Acquiring orders in minimum time:** orders need to be considered in minimum time without any delays.

3) **Low cost of items:** The cost of items needs to be reasonable for customers.

4) **Less use of paper:** Manual work should be reduced.

5) **Ordering and billing are computerized:** Ordering and billing should be computerized, activities like ordering are performed through a web page.

3. PHASES

The product includes 3 major phases are as follows:

3.1) Administrator Phase

- Order Incoming
- Printing of bills
- Add and Remove options are available

- Offers are added
- Updating Inventories
- Count of sales place in week and month
- Count of each individual item sold every day
- Count of Total earnings

3.2) Staff Phase

- Customer placed an order

- Total offers according to item
- Forecasting of Orders

3.3) User Phase

- Selection of items from Menu
- Placing of orders
- Combo Selection of items
- Billing

4. ER DIAGRAM
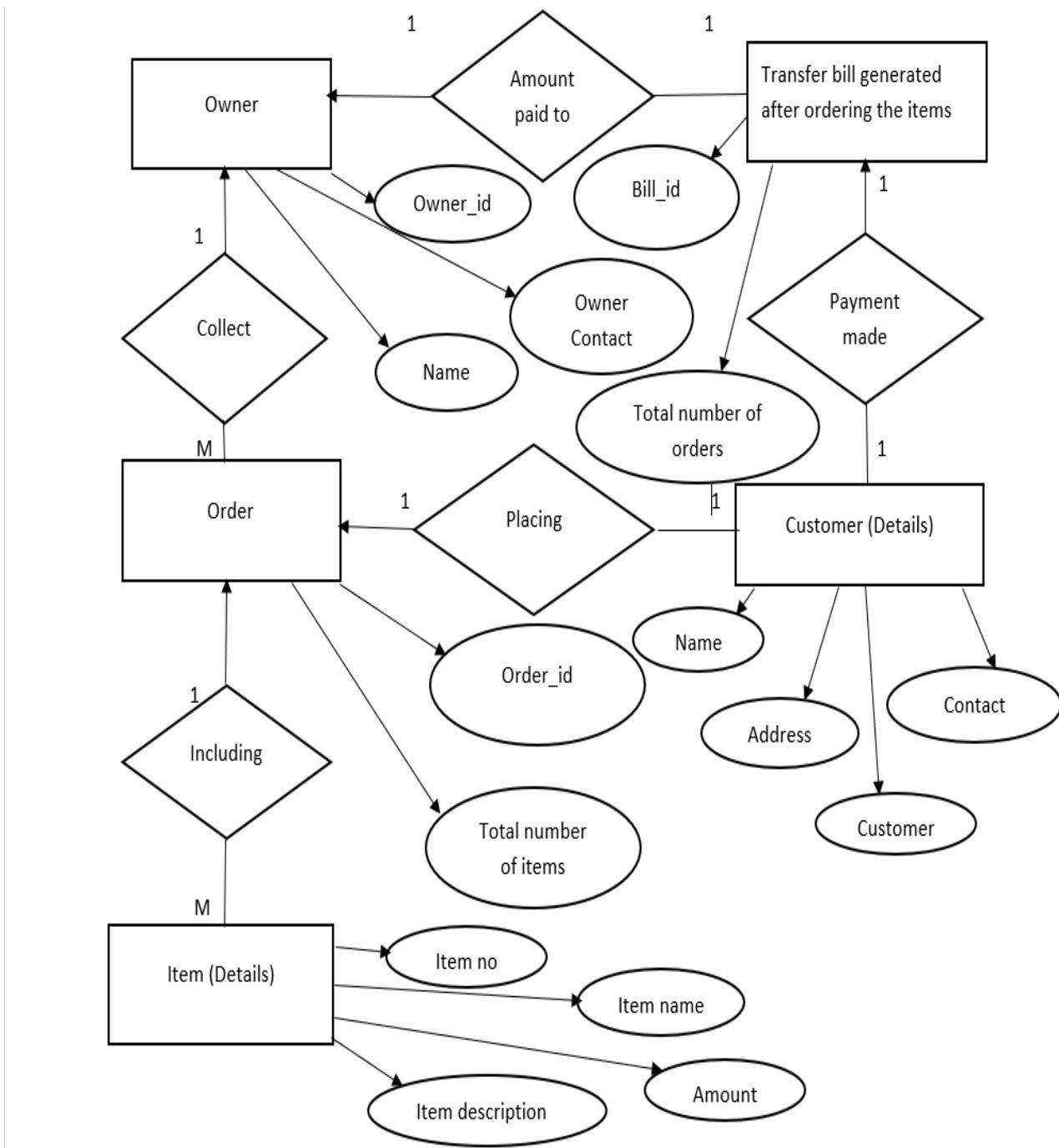
5. ALGORITHM

 Algorithm for the priority of food items:

STEP 1) Begin

STEP 2) Declare array 'i' of size 10

STEP 3) Give input 'y'

STEP 4) for (a=0; a<=5; a++)

 i[a] = y print sequence = a a++

STEP 5)

 do {

switch (sequence)

case 0: count++

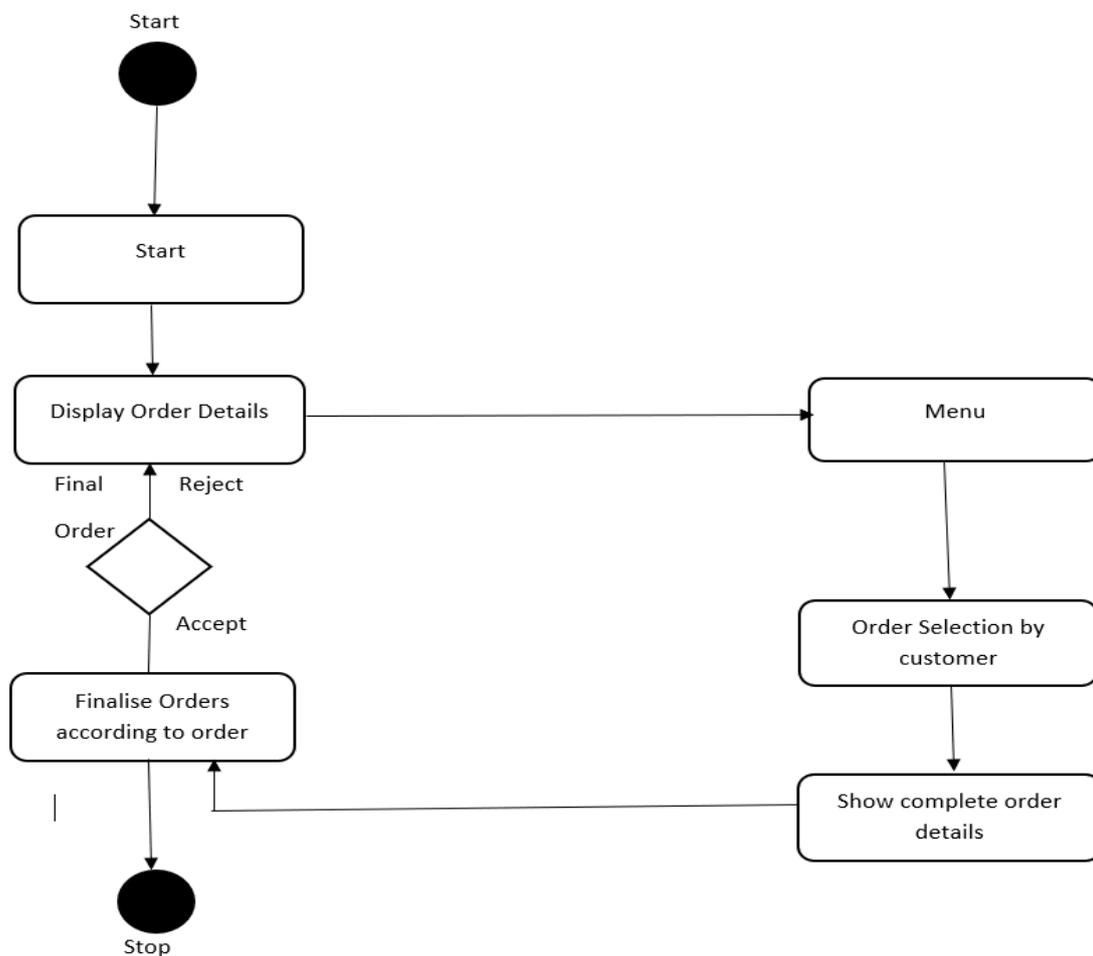case 1: count++

case 2: count++

case 3: count++

case 4: count++

case 5: count++

} while(a=5)

6. ACTIVITY DIAGRAM

7. HARDWARE REQUIREMENTS

- Processor i7 based computer or higher

- Memory up to 8 GB Ram

- Hard drive: 237 GB

- Internet Connection

8. SOFTWARE REQUIREMENTS

- Notepad ++

- Net Beans IDE

- Toad 13.3.0.181

- My SQL 5.5

9. ADVANTAGES

1. Data Security is high

2. Data Accuracy is good

3. Properly controlled higher officials

4. Minimization in manual entries

5. Minimization in time processing of tasks

6. Good efficiency and services

7. Interactive and user-friendly product

8. Tasks are performed in minimum time duration

10. Disadvantages

1. It requires an active internet connection

2. It requires an android phone or laptop for ordering items

11. Applications

This application can be used in the cafeteria, canteen, and restaurants.

12. MODULES

12.1) Order management module: -

- Requirements based according to users:

  According to this module, customers are able to order their food as well as cancel it according to their preference.

- Requirements based according to the system:

12.1.1) Add order module: - In this module information about the order is displayed, staff members need to enter those details into the system. Then the validation process got implemented and checking accuracy is done.

If there are some error occurrences then a prompt message will occur that entered details are invalid.

12.1.2) Sequencing of orders: -Newly orders are segmented in a queue, during the processing of orders system will dequeue according to first come first serve basis, the chef will cook food according to the order which served in front of him.

12.1.3) Deletion of orders: - Staff can easily delete orders by just clicking on the delete button. Only those orders got removed which are canceled by customers.

12.1.4) Total calculation of orders: - In total calculations, all the order details are retrieved from Database. Then each will be multiplied from the total quantity of orders then this process will continue till it covers all the orders. Then the total amount of orders will be displayed on the screen.

12.1.5) Add payment module: - In the add payment module canteen inputs the payment information which will be validated in the system. If the information is incorrect then an error message will occur and ask the user to re-input the details. In addition, there is a dialog box that shows a summary of the actions.

12.2) Maintenance module based on customers: -In this module details of customers are maintained such as an address, contact details, etc. Which can be used as a reference for contacting customers.

12.2.1) Add customer module: - In this module details of customers are entered into the systems. A validation check will occur before the storing of data in the database, if there are some errors then a prompt message will during the validation process.

12.2.2) Edit customer module: -In this module modification in customers can be done. We can add and delete details of customers according to the validation process, rectification of mistakes can be done easily through making changes in fields.

12.2.3) Delete customer module: -the desired record will be searched first, by just clicking on the delete button we can remove the record which is useless after deletion of records message will display that the record is deleted

12.2.4) Order maintenance mode: -

In this module, we are going to keep track of orders changing and cancellation of orders will be also done.

12.3) System Requirements

12.3.1) Add order module: - User will enter details into the system before it got stored in the database, a validation process will take place whether all the details are correct or not, if some details are incorrect, a dialog box will warn the user that some details are incorrect.

12.3.2) Edit order module: -Users can easily edit order details, Modification of orders can be done in this module without any inconvenience, if modification is inappropriate then an alert message will occur.

12.3.3) Complete order module: - This module will then display the completion of orders according to the first-come and first serve process. Users can select complete status after finalization of orders and the record got saved automatically.

12.3.4) Cancel order module: - Customers can cancel orders according to their wish, if a record is not available then it can easily remove from the database and the status will also display that order is got canceled.

12.3.5) Total calculation of orders: -The system will calculate the total amount of orders based on algorithms that are implemented during this process it also includes total quantity and charges based on services.

12.3.6) Add payment module: - In this module, payment details have entered the system. Then the validation process begins and it ensures accuracy if some details are invalid, they will be rectified through dialog and it will grab the error and resolve it.

12.3.7) Post payment module: - It will search the user payment details through the post, then the user will click on a post this payment, and a dialog will display that the user gets affirmation.

12.4) Flowchart
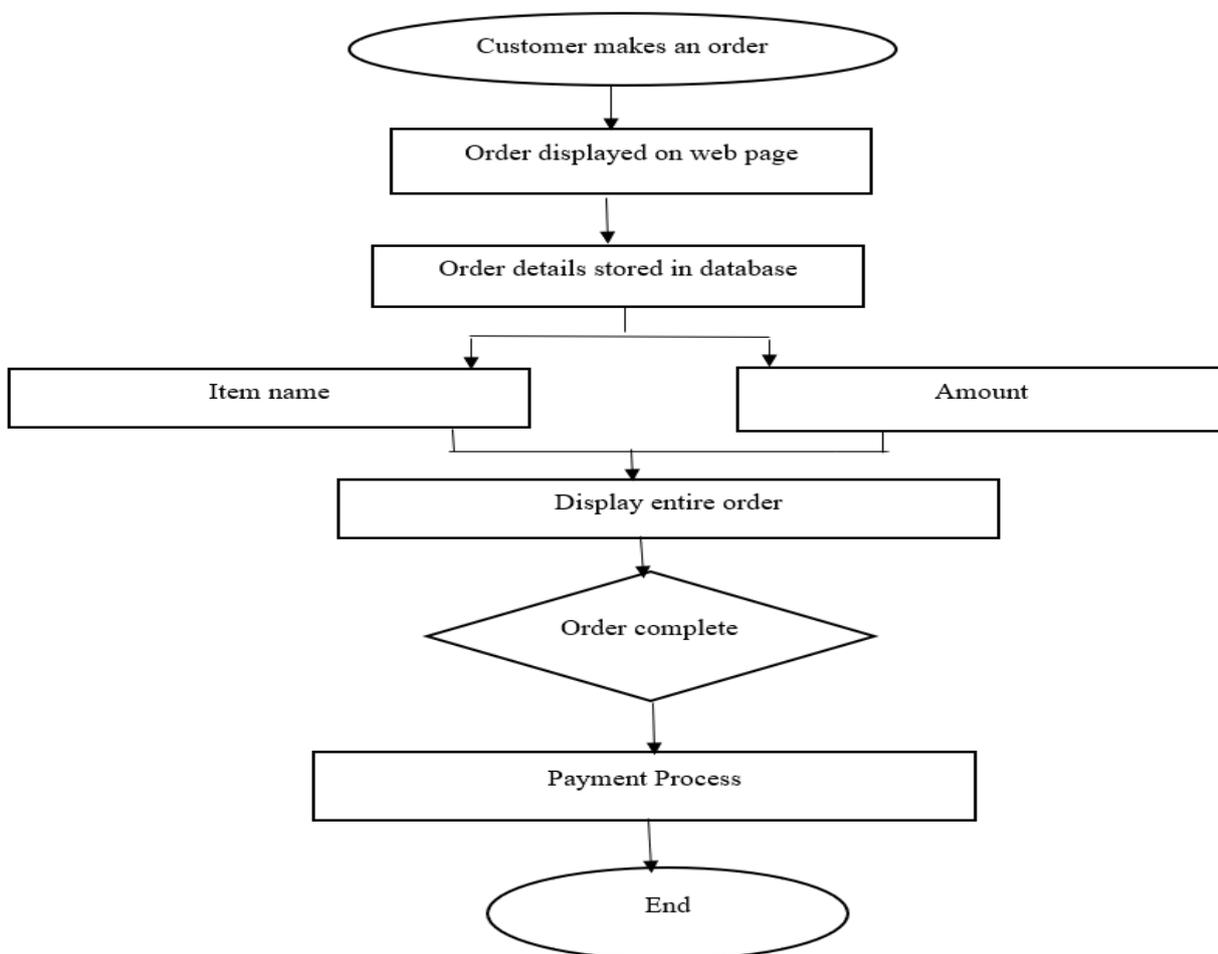
13. SOME MORE FEATURES

13.1) Balancing of loads: - System is developed for admin purposes, loads need to managed in a proper manner so the login activity on the server can be done in a limited time period, there must be an appropriate time period for the server accessibility.

13.2) Easy to Access: - Records are needed to be stored in the database without any loss in a proper manner so that all the details are managed properly according to information which is stored in the database and it can be accessed easily during the requirement of it.

13.3) User Friendly System: - A system needs to be user friendly so it can be easily accessed by users without any issues, some systems are very complex that users are barely able to access them.

13.4) Efficiency and reliability: - Maintaining all details of records in the database on the server which will be easy to access according to the user requirement without any maintenance. Maintenance cost must be minimum and efficient as compare with storing all the customer data on the excel spreadsheet or in physical book records.

13.5) Easy Maintenance: - Maintenance is fully dependent on the design work. If the system is designed in an easy way, not in a complex way then the maintenance will be easy.

14) DATA FLOW DIAGRAM (DFD)

Explanation about DFD: -

This DFD contains 3 levels:

1) DFD LEVEL 0

2) DFD LEVEL 1

3) DFD LEVEL 2

1) DFD LEVEL 0: - In this level of DFD we can see the basic phase of architecture which includes the basic functioning of this phase:

1) Canteen management

2) Food item management

3) Sales management

4) Customer management

5) Login management

6) System User management

1) Canteen management: This phase includes the process of management functioning of canteen that how we can manage the items which are needed to be purchased from the canteen.

2) Food Item Management: This phase includes the process of food management that how we can manage the food items according to quantity and requirements of customers.

3) Sales Management: This phase shows the total number of sales of items that how much number of items are sold to customers.

4) Customer Management: This phase shows the customer details and number of customers who have purchased the items with their total count.

5) Login Management: This phase shows the user counts how many users are logged in to the system.

6) System User Management: This phase shows the interaction between system and user, how the user accesses this system according to his/her requirement.
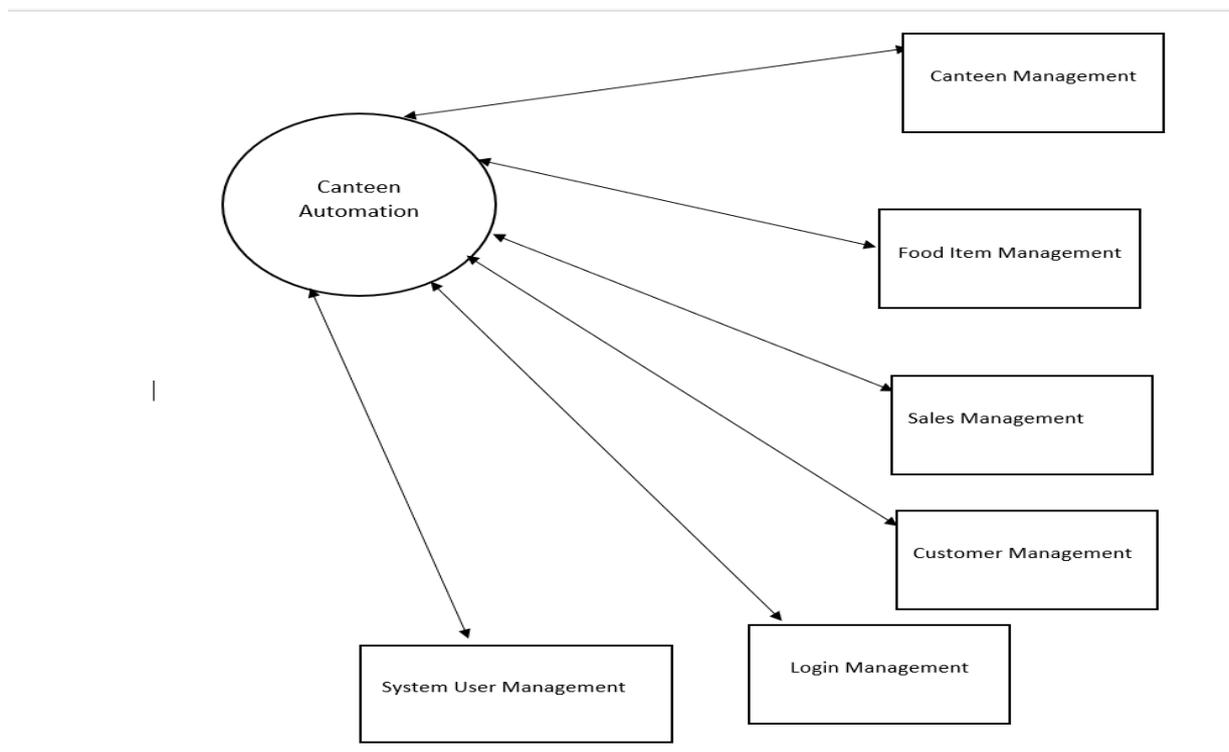
2) DFD LEVEL 1: - In this level of DFD reports are generated for each and every process.

- Canteen Management -> Generate canteen report

- Employee Management-> Generate employee report

- Food Management-> Generate food report

- Sales Management-> Generate sale report

- Login Management-> Check user login details

- System User Management-> Generate system report for user
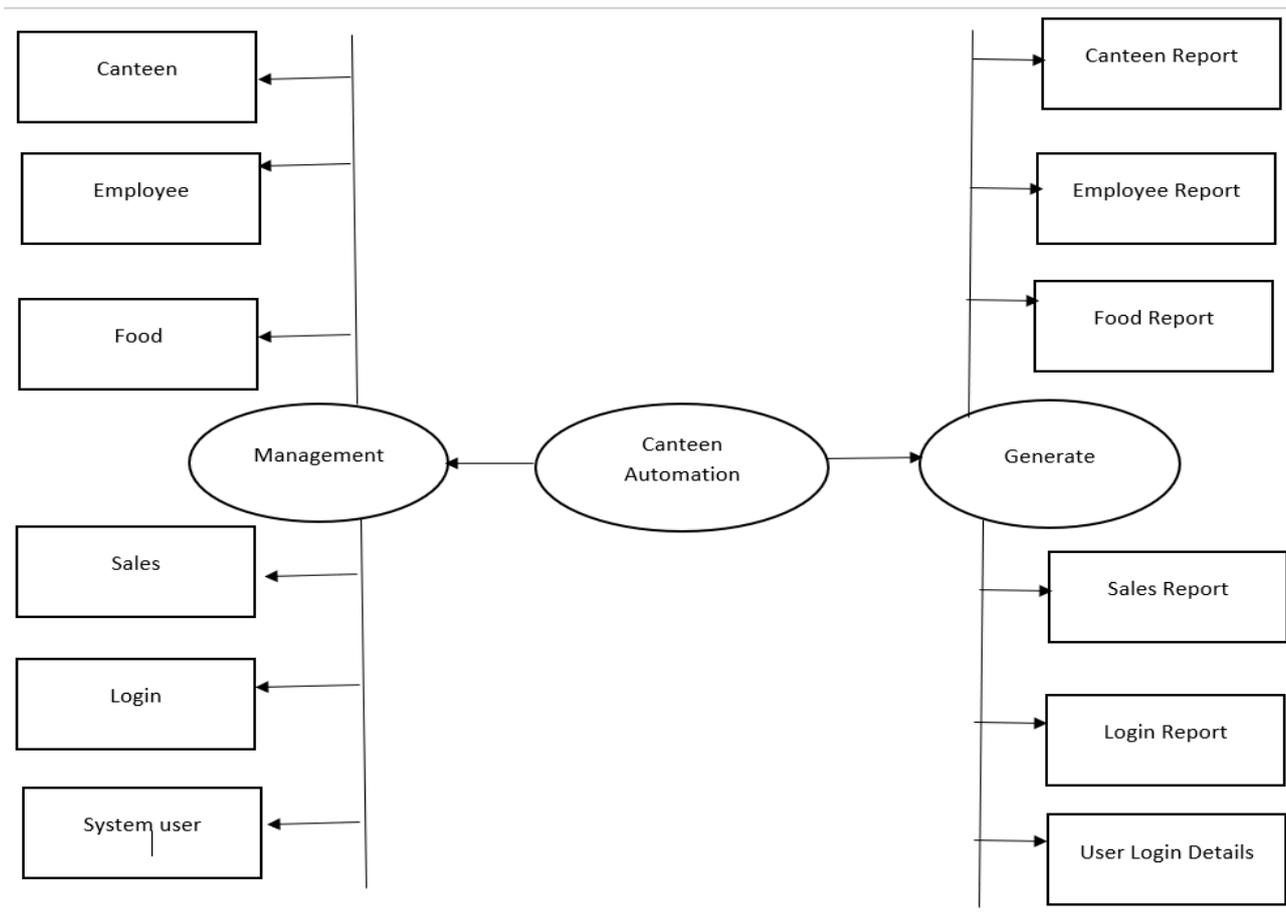
3) DFD LEVEL 2: - In this level of DFD illustration of the whole system in that login in that system is done then it will check all the details of the system after that accessibility check of system is done. After that, there are several modules that are managed such as:

1) Manage system admins

2) Manage roles of users

3) Manage user permission

4) Manage report

5) Manage food meal details

6) Manage employee details

7) Manage item details

8) Manage sales details

9) Manage customer details
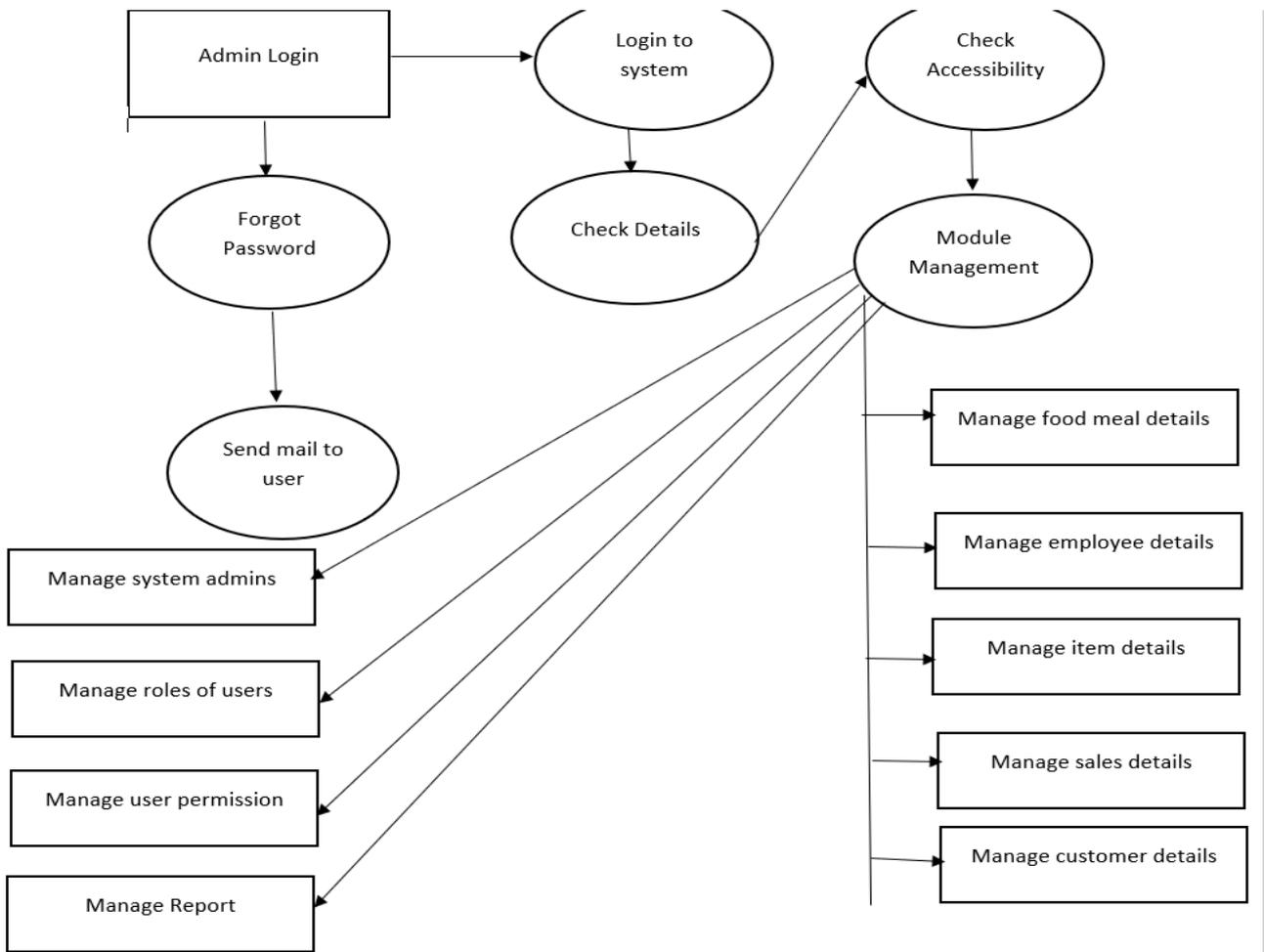
15) SYSTEM WORKFLOW DESIGN
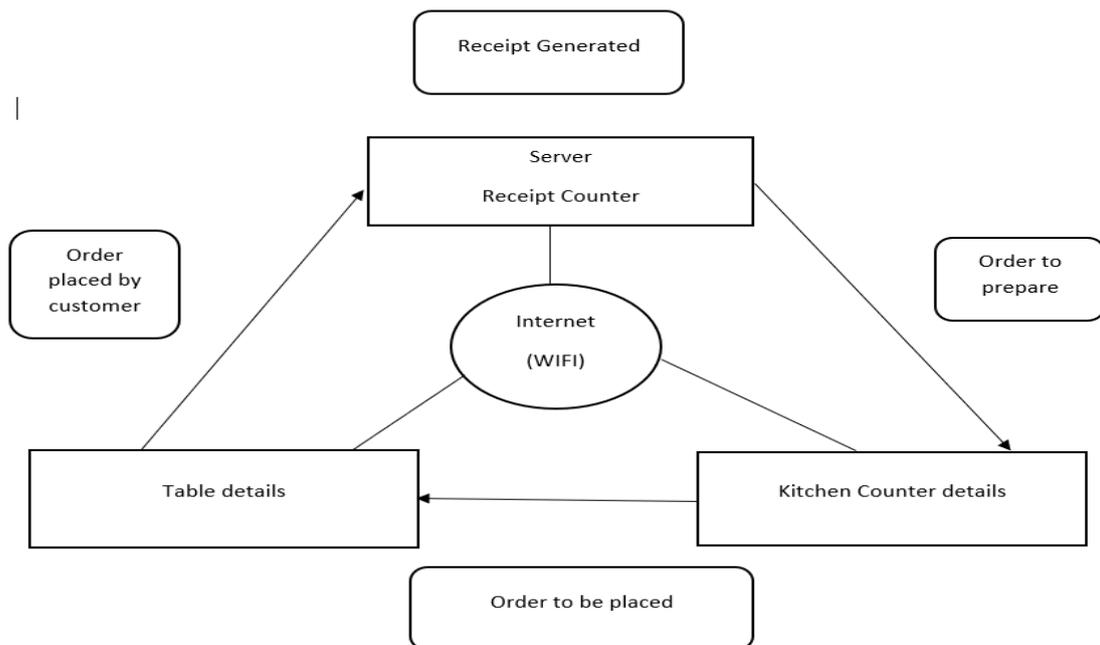
16) CONCLUSIONS

There are many phases involved in the canteen automation system.

Top to bottom approach implementation is used focusing on what first, then how to approach other successive levels of details.

In the first phase, we started a detailed study of problem statements. The solution to these problems needs to be accurate; these problems hindered the effectiveness of the existing system.

In the design phase, all the modules need to be designed properly and met the needs of this product.

During the designing phase, strict adherence was made for principles that need to be proved and met the requirements of the organization.

I hope as a result it will eliminate all restrictions and problems which are occurred during system investigation can resolve during the implementation of the software products.

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