

IT5311- PDS LAB

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2020506001

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## **RESTAURANT MANAGEMENT SYSTEM**

**Aim:** To develop a restaurant management system in c programming using data structures **(Linked List)** which helps us to store and access data when required.

### **Problem statement:-**

Creating a restaurant management system which has both an admin view and a customer view. We can enter the admin view only if the password is correct.

From the **customer** point of view, the customer can

- Can order food items
- Can look into his cart
- Can add more items in his cart
- Can remove items from his cart


- Can see the food items by filtering by the type of food(North,South,Chinese etc)
- Can finish ordering and see his final bill


#### THE **ADMIN** CAN:

- View the total sales (with each product that has been sold with their quantity and the cost(amount) of that particular product sold. Also the total cost paid by the customer(sales) is also displayed).
- Can view the order menu
- Can add items in the order menu
- Can delete items in the order menu
- Can update the price of a particular food item


Thus we can make a note of the items that the customer orders and calculate the final bill and display it. And as admin we can manipulate the food items, it's price and can know the total sales in that day, thus creating an efficient Restaurant management system!

## KEY FUNCTIONS (with explanation)

 **cr\_ad()**-> Creates an admin record which takes the starting address of the linked list(self referential structure), the serial number of the food item, food name, price and quantity)


 **cr\_cus()**-> Creates a customer record which takes the starting address of the linked list, food serial number and the quantity.


 **Disp()**-> Displays the order menu


 **Disp\_type()**-> Displays the food item details according to the type provided by the user


 **Update()**-> Updates the price of the food item


 **Total\_sales()**-> Calculate the total sales on that day


 **Delete()**-> Deletes a record given the head and tail of the linked list


 **Delete\_admin()**->Deletes a food item from the order menu


 **Delete\_customer()**-> Deletes a food item from a customer's cart


 **Display\_bill()**->Display's the bill of a particular customer after ordering the food items


 **Del()**-> After displaying the bill , deletes the record of that customer

 **Admin()**-> If the user enters the admin point of view, all the necessary actions are handled by this function

 **Customer()**->If the user enters the customer point of view, all necessary actions pertaining to the customer are handled by this function

 **Main\_menu()**-> Instructs the user and helps him decide which from view point he wishes to continue

 **Ad\_men()**-> If the user enters the admin point of view, this function prints the details of what actions will be carried out on giving which commands

 **Cust\_menu()**->If the user enters the customer point of view, this function prints the details of what actions will be carried out on giving which commands

## **DATA STRUCTURES USED(and their significance in this project)**

The data structure used in this project is LINKED LIST, which maintains the records of both the admin(food items) and the customers' food items.

As linked list is used, the list can be extended or shrunk according to the requirements of the admin/customer

Also sequential access becomes easier in linked list , thus enabling us to access the food items in order

Also, insertions and deletions become easier in linked list

Thus , food items can be added, deleted and updated and the total cost can be calculated by using a linked list easily.

## OUTPUT SCREENSHOT:-

```
-----  
AAKASH RESTAURANT MANAGEMENT SYSTEM  
-----  
1. ADMIN LOGIN  
2. CUSTOMER VIEW  
3. Exit  
  
Enter Your Choice:1  
  
ENTER PASSWORD:  
dontknow  
SORRY, INVALID PASSWORD!
```

```
SORRY, INVALID PASSWORD!  
  
-----  
AAKASH RESTAURANT MANAGEMENT SYSTEM  
-----  
1. ADMIN LOGIN  
2. CUSTOMER VIEW  
3. Exit  
  
Enter Your Choice:1  
  
ENTER PASSWORD:  
admin  
  
-----  
ADMIN SECTION  
-----  
  
1. View total sales  
2. Add new items in the order menu  
3. Delete items from the order menu  
4. Display order menu  
5. Back To Main Menu  
  
Enter Your Choice:1  
  
List is empty!  
  
Total sales Rs.:0
```

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu

Enter Your Choice:4

#### ORDER MENU

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 2 | pongal  | 70.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu

Enter Your Choice:2

Enter serial no. of the food item: 9

Enter food item name: Falooda

Enter price: 60

Enter Type:Dessert

New food item added to the list!



1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu

Enter Your Choice:4

#### ORDER MENU

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 2 | pongal  | 70.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu

Enter Your Choice:3

Enter serial no. of the food item which is to be deleted: 2

ITEMS IN CARTn

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu

Enter Your Choice:4

#### ORDER MENU

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu

Enter Your Choice:5

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#### AAKASH RESTAURANT MANAGEMENT SYSTEM

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1. ADMIN LOGIN
2. CUSTOMER VIEW
3. Exit

Enter Your Choice:2

-----  
CUSTOMER SECTION  
-----

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:1

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

Enter number corresponding to the item you want to order: 5

Enter quantity: 4

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:1

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

Enter number corresponding to the item you want to order: 3

Enter quantity: 2

Enter number corresponding to the item you want to order: 3  
Enter quantity: 2

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:2

Items in cart

|   |       |   |        |       |
|---|-------|---|--------|-------|
| 5 | idli  | 4 | 200.00 | South |
| 3 | poori | 2 | 160.00 | South |

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:3

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:3

Enter serial no. of the food item which is to be deleted: 3

UPDATED CART

|   |      |   |        |       |
|---|------|---|--------|-------|
| 5 | idli | 4 | 200.00 | South |
|---|------|---|--------|-------|

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:4

FINAL AMOUNT(Bill)

5        idli        4        200.00    South

Total price: 200.00

Press any key to return to main menu:

-----  
AAKASH RESTAURANT MANAGEMENT SYSTEM  
-----

1. ADMIN LOGIN
2. CUSTOMER VIEW
3. Exit

Enter Your Choice:2

serial number of food to update:

4

Enter new price of the food item:100

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu
- 6.update

Enter Your Choice:4

#### ORDER MENU

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 2 | pongal  | 70.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 100.00 | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |

Thus price of dosa is changed to Rs.100!

```
1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu
6.update

Enter Your Choice:6

Serial number of food to update:

Enter new price of the food item:90

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu
6.update

Enter Your Choice:4

ORDER MENU
```

Now on updating the price of dosa, we are changing it back to Rs.90!

1. View total sales
2. Add new items in the order menu
3. Delete items from the order menu
4. Display order menu
5. Back To Main Menu
- 6.update

Enter Your Choice:4

#### ORDER MENU

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 2 | pongal  | 70.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |



-----  
CUSTOMER SECTION  
-----

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:1

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

Enter number corresponding to the item you want to order: 9  
Enter quantity: 1

Enter number corresponding to the item you want to order: 9  
Enter quantity: 1

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:1

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

Enter number corresponding to the item you want to order: 8  
Enter quantity: 1

```
Enter number corresponding to the item you want to order: 8
Enter quantity: 1
```

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

```
Enter Your Choice:1
```

|   |         |        |         |
|---|---------|--------|---------|
| 1 | vada    | 30.00  | South   |
| 3 | poori   | 80.00  | South   |
| 4 | dosa    | 90.00  | South   |
| 5 | idli    | 50.00  | South   |
| 6 | naan    | 110.00 | North   |
| 7 | noodles | 200.00 | Chinese |
| 8 | tikka   | 180.00 | North   |
| 9 | Falooda | 60.00  | Dessert |

```
Enter number corresponding to the item you want to order: 6
Enter quantity: 2
```

```
Enter number corresponding to the item you want to order: 6
Enter quantity: 2
```

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

```
Enter Your Choice:2
```

```
Items in cart
```

|   |         |   |        |         |
|---|---------|---|--------|---------|
| 9 | Falooda | 1 | 60.00  | Dessert |
| 8 | tikka   | 1 | 180.00 | North   |
| 6 | naan    | 2 | 220.00 | North   |

```
1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:5

Enter type of food:South,North,Chinese
Chinese

No    Name    Price    Type
7     noodles 200.00   Chinese
```

```
1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:1

1      vada    30.00   South
2      pongal  70.00   South
3      poori   80.00   South
4      dosa    90.00   South
5      idli    50.00   South
6      naan    110.00  North
7      noodles 200.00  Chinese
8      tikka   180.00  North

Enter number corresponding to the item you want to order: 7
Enter quantity: 1
```

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:2

Items in cart

|   |         |   |        |         |
|---|---------|---|--------|---------|
| 8 | tikka   | 1 | 180.00 | North   |
| 6 | naan    | 2 | 220.00 | North   |
| 7 | noodles | 1 | 200.00 | Chinese |

1. Place your order
2. View your ordered items
3. Delete an item from order
4. Display final bill
5. Display items according to type
6. Back To Main Menu

Enter Your Choice:4

FINAL AMOUNT (Bill)

|   |         |   |        |         |
|---|---------|---|--------|---------|
| 8 | tikka   | 1 | 180.00 | North   |
| 6 | naan    | 2 | 220.00 | North   |
| 7 | noodles | 1 | 200.00 | Chinese |

Total price: 600.00

Press any key to return to main menu:

```
-----  
                                AAKASH RESTAURANT MANAGEMENT SYSTEM  
-----  
                                1. ADMIN LOGIN  
                                2. CUSTOMER VIEW  
                                3. Exit  
  
                                Enter Your Choice:1  
  
ENTER PASSWORD:  
admin  
  
-----  
                                ADMIN SECTION
```

```
                                1. View total sales  
                                2. Add new items in the order menu  
                                3. Delete items from the order menu  
                                4. Display order menu  
                                5. Back To Main Menu  
  
                                Enter Your Choice:1  
  
                                5      idli      4      200.00  South  
                                8      tikka     1      180.00  North  
                                6      naan      2      220.00  North  
                                7      noodles  1      200.00  Chinese  
  
                                Total sales Rs.:800  
  
                                1. View total sales  
                                2. Add new items in the order menu  
                                3. Delete items from the order menu  
                                4. Display order menu  
                                5. Back To Main Menu  
  
                                Enter Your Choice:5
```

```
Enter Your Choice:5

-----
AAKASH RESTAURANT MANAGEMENT SYSTEM
-----

1. ADMIN LOGIN
2. CUSTOMER VIEW
3. Exit

Enter Your Choice:3

Thank you!visit again!
```

**RESULT:** Thus using linked list to store the records, we have eased the traversal through the list and all records can be easily accessed. Thus customer is able to order through this application and the admin is able to view and update the food items and can also calculate the total sales for the day! Thus, an efficient restaurant management system has been designed using data structure(linked list)in C programming!