CAFETERIA MANAGEMENT SYSTEM

A Project Final Report

Submitted in the partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

BE CSE – BDA

Submitted by:

VISHAL SAXENA

20BCS4459

Under the Supervision of:

GURPREET SINGH PANESAR

CHANDIGARH UNIVERSITY, GHARUAN, MOHALI - 140413, PUNJAB

MAY 2022

ACKNOWLEDGEMENT

We would like to thank my project supervisor and Co- supervisor, for providing an awful amount of guidance and input throughout the writing of this report. In addition, we'd like to thank my family member friends and team mates for the support throughout this semester, and for checking over my report and giving ideas for better project.

ABSTRACT

This report is conducted in order to set the foundations upon which the final project. The title of the project is: "Dark Town Café". It is a website that is used to manage the cafeteria.

The main target of this report is to conduct a thorough and in-depth analysis of the vast field of Software engineering and at the same time explore the opportunities and the conditions that could lead into building a successful website. The simplicity and ease of access of a menu are the main things that facilitate ordering food in a restaurant. A menu completely revolutionizes the patron's dining experience. Existing programs provide an app that restaurants can use to feed their menus into website and make it easier for the diners to flip, swipe & tap through the menu.

The purpose of this website is to automate the existing manual system to help the computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with.

We here aim to provide the restaurants with a website menu that would recommend dishes based on a recommendation algorithm which has not been implemented elsewhere. We use a MY SQL server for storing the database which makes it

inexpensive & secure. For User Interface we use HTML, CSS and JS for making our website attractive and responsive.

TABLE OF CONTENT

S. No.	Title	Page No.
1.	List of figures……	4
2.	Introduction ……	5
3.	Literature Review ……...	7
4.	Problem Definition …….	9
5.	Design Flow	11
6.	Objectives ……...	13
7.	Result	16
8.	Conclusion and Future Scope	20
9.	Reference ……..	23

List of Figures

1. Figure 4.1[Component Diagram]
2. Figure 4.1.1[Level Zero Diagram]
3. Figure 4.1.2[Level One Diagram]
4. Figure 4.1.3[Level Two Diagram]
5. Figure 4.1.4[Use Case Diagram]
6. Figure 4.1.5[Sequence Diagram]

Chapter - 1

INTRODUCTION

The traditional system is a restaurant paper menu and ordering system is replaced with an electronic medium i.e. a website. Due to a digitalized system, the risk of manual errors is eliminated, thus eliminating the communication barrier.

The website displays all the information the customer needs to know about the order he has placed. It has been developed to override the problems prevailing in practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this in existing system. Moreover this system is designed for the

particular need of the company to carry out operations in a smooth and effective manner.

This website is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. It is user friendly. It can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. It will help organization in better utilization of resources.

This self-service fast food restaurant will be equipped with a user-friendly touch screen, a credit/debit card reader, and software for completing the process at the backend. For this system there will be a system administrator who will have the rights to enter the menu with their current prevailing prices. He/she can enter anytime in the system by a secured system password to change the menu contents by adding or deleting an item or changing its price.

Now when the customer enters the restaurant, he will place his order with the help of the touch screen using the intuitive graphical user interface, right from the selection of language till the payment confirmation. He will select from the food options according to his choice and the system will display the payment amount he has to make once he has finished with his order.

Customer get many benefits via online ordering this helps cafeteria to build long-lasting and profitable relationship with their customers. For making strong relationship with these users it is very important to focus on the customer as a whole and making sense of a flood of real-time information that goes well beyond demographics or shopping behavior.

There are two entities who will have the access to the system. One is the admin and another one will be the registered user. Admin can add product details, view all the order details and can also view the sales of the products.

User need to register with basic registration details to generate a valid username and password. After the user logins, it can view all the products that are recommended on the homepage compiled by the system based on user's information. From the recommended menu card, the user can even further view its details and then if interested to order, the system gives add to cart option for purchasing the product.

The system even has an AI bot with the help of which the user can get answers to queries like prices, facilities, etc. details of the cafeteria. This AI Bot even converts text to speech. After selecting the particular food, user can do payment for the particular food online. Users can view their order history of their purchased food. They can also show their delivery boy details too.

Every organization whether big or small, has challenges to overcome and managing the information. So, we design exclusive employee management systems that are adapted to our managerial requirements. This is designed to assist in strategic planning, and will help us to ensure that our organization is equipped with the right level of information and details of our future goals. Also, it allows us to manage work from anywhere anytime. These systems will ultimately allow us to better manage resources.

Chapter – 2

LITERATURE REVIEW

The system is implemented to reduce the manual work and enhances the accuracy of work in a restaurant. This system manages and maintains the record of customers and their order online. This Android App has been made in a user friendly interface. So that Customer can add and delete the food items easily.

[1] The menu card of different restaurant consists of various food varieties available in the restaurant. Through the place ordering menu, the customer can simply click and order the food. The messaging module tells the supplier to supply the particular food. Also tracking module track the order. The billing system prepares the bill according to the delivered food. This system entirely reduces the unnecessary time. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time.

[2] The purpose of Canteen Management System is to automate the existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with.

[3] Cafeteria Management System is computer that system that help cafeteria to manage their cafeteria dairy process, such as order, reservation, redemption and etc. The entire system consists of back end and front end, which back end was an offline application and front end was a web site. The offline application allow cafeteria to manage the cafeteria information and managing the dairy process such as seat admission and order. And the system allow cafeteria to manage their meal menu and promotion. And all the updated meal menu

and promotion will be show on the web page automatically upon the completion of updating.

[4] The perspectives of organizational, marketing and strategic management theories provide a reliable theoretical groundwork to understand the important managerial aspects of menu. For instance, organization theory explicitly emphasizes the influence of external environment both on the decisions of firm managers and the survival of firms on the long run.

[5] More specifically, external environment is one of the central themes of organization theory and the relevant studies primarily propose that managers essentially consider the influential external factors that create uncertainty, diversity and volatility while making their decisions. Planning and operating menus in a restaurant context involve considering external factors such as customers, rivals, and vendors that have a great potential in creating uncertainty, diversity and volatility in the restaurants' immediate business environment. Complementing this view, marketing theory recognizes the importance of identifying the needs and expectations of customers, and developing and improving products and service perfectly fit to those needs and expectations.

[6] Additionally, pricing, promoting and distributing the products and services should also be consistent with the customers' needs and expectations on the one hand, and with the firm's objectives on the other hand. Thus, in the restaurant context, it is imperative that menu as the food and beverage combinations offered by a restaurant reflects the expectations and needs of customers. Moreover, managing menus involves planning, pricing, designing, distributing and promotional decisions which are also the main issues of marketing.

[7]Conversely, when a differentiation strategy is chosen, a restaurant manager is expected to be attentive to (i) selecting or innovating unique menu items, (ii) setting higher prices with an expectation that customers are willing to pay premium for a differentiated product, and (iii) heavily concentrating on

attractively presenting unique items on menu card to create a positive image of a unique meal experience. Thus, all managerial decisions with reference to planning, pricing and designing menus are the reflections of the chosen strategy such as low cost leadership or differentiation.

[8] The total front end was dominated using HTML standards applied with the dynamism of JAVA server pages. At all proper levels high care was taken to check that the system manages the date consistency with proper business validations. The database connectivity was planned using the Java Data Base Connectivity, the authorization and authorization was cross checked at all stages. The user level accessibility has been restricted into two zones the administrative and the normal user zone.

Chapter – 3

PROBLEM DEFINITION

The purpose of any website is to help customers narrow down their broad ideas and enable them to finalize the products they want to purchase. For example, suppose a customer is interested in ordering a Chinese food. His or her search for a that should list Chinese food categories size and all other features as facets. As the customer selects more and more features or options from the facets provided, the search narrows down to a small list of Chinese food that suit his or her choice. If the list is small enough and the customer likes one of the Chinese food listed, he or she will make the order.

The challenge is also that each category will have a different set of facets to be displayed. For example, searching for main course should display their format, as in paper pack or hardcover, name, and other facets related to books. These facets were different for Chinese food that we discussed earlier. Similarly, each category will have different facets and it needs to be designed properly so that

customers can narrow down to their preferred products, irrespective of the category they are looking into.

The takeaway from this is that categorization and feature listing of products should be taken care of. Misrepresentation of features can lead to incorrect search results. Another takeaway is that we need to provide multiple facets in the search results. For example, while displaying the list of all food, we need to provide facets for a brand. Once a food is selected, another set of facets for other features has to be provided. As more and more facets are selected, we still need to show facets within the remaining products.

Chapter – 4

DESIGN FLOW

The Dark Town Cafe system is designed based on a mixture of multitier architecture, RESTFUL architecture style [5] and Model View View Model (MVVM) pattern [7]. The multi tier architecture provides a model to create flexible and reusable components in a web application. It segregates the application into several tiers, where developers can add/modify the functionalities on a certain tier instead of modifying an entire application. This allows the functionalities of the system to extend for future development.

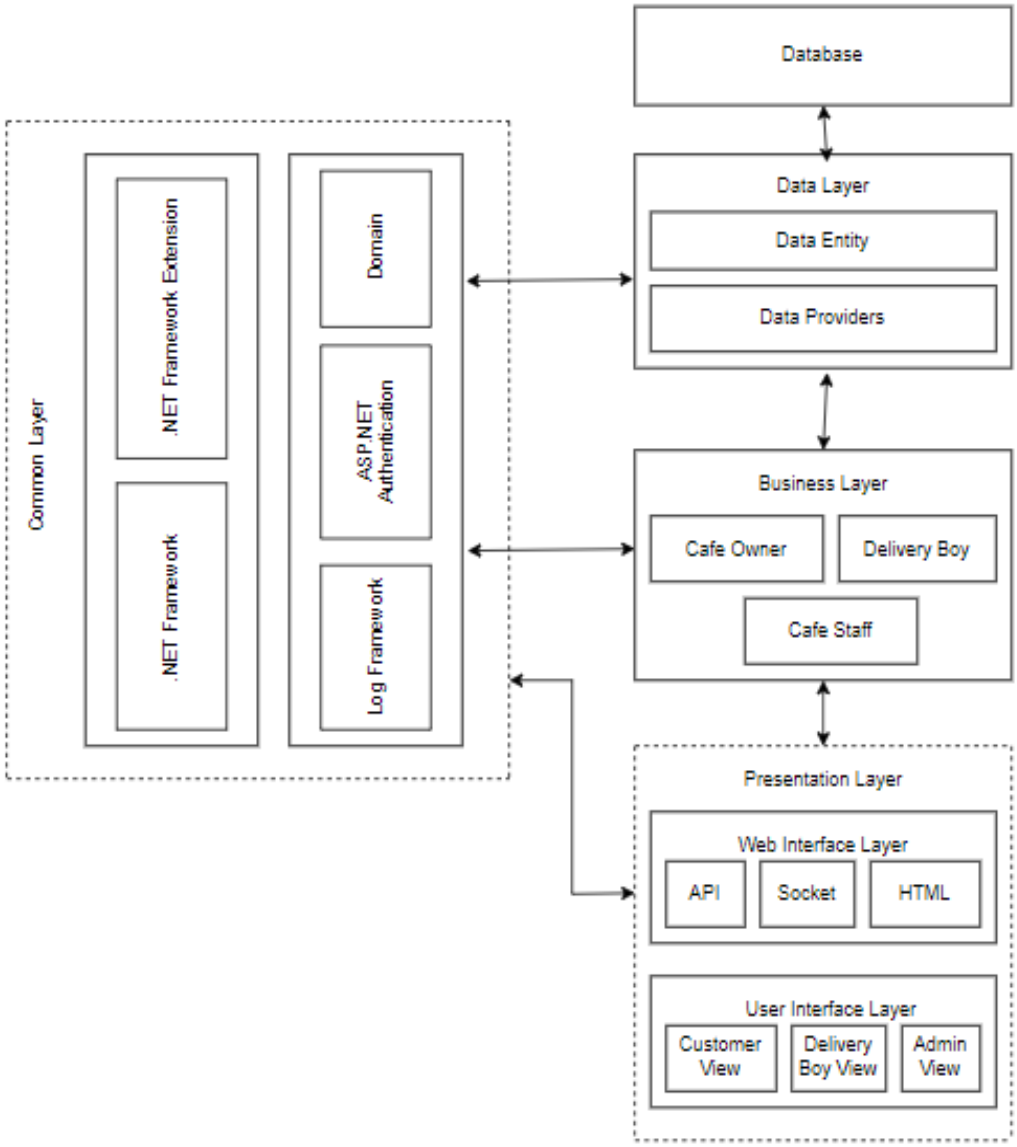


Figure 4.1[Component Diagram]

The RESTFUL architecture style provides core functionalities of the system as web services for different devices and platforms as mentioned in requirements R1, R2 and R5. The MVVM pattern [7] allows developing the User Interface (UI) with clear separation of UI components and presentation logic. The core system has three main layers: Data Layer, Business Layer and Presentation Layer. The Presentation Layer is further divided into two layers, namely Web Interface and UI Layers. These two layers are loosely coupled and connected with web services. All these layers are cross-connected with the Common Layer, as shown in Figure 4.1.

4.1 DFD ON CAFTERIA MANAGEMENT SYSTEM:

- Level Zero Diagram:

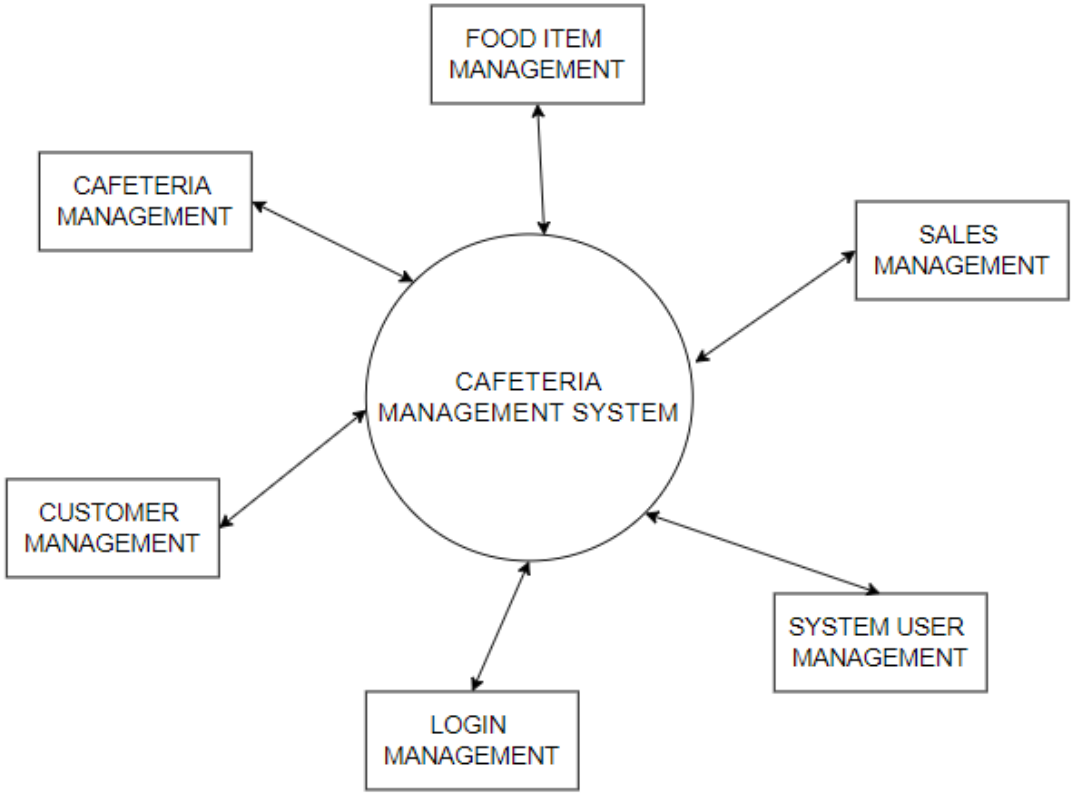


Figure 4.1.1[Level Zero DFD]

Level One Diagram:

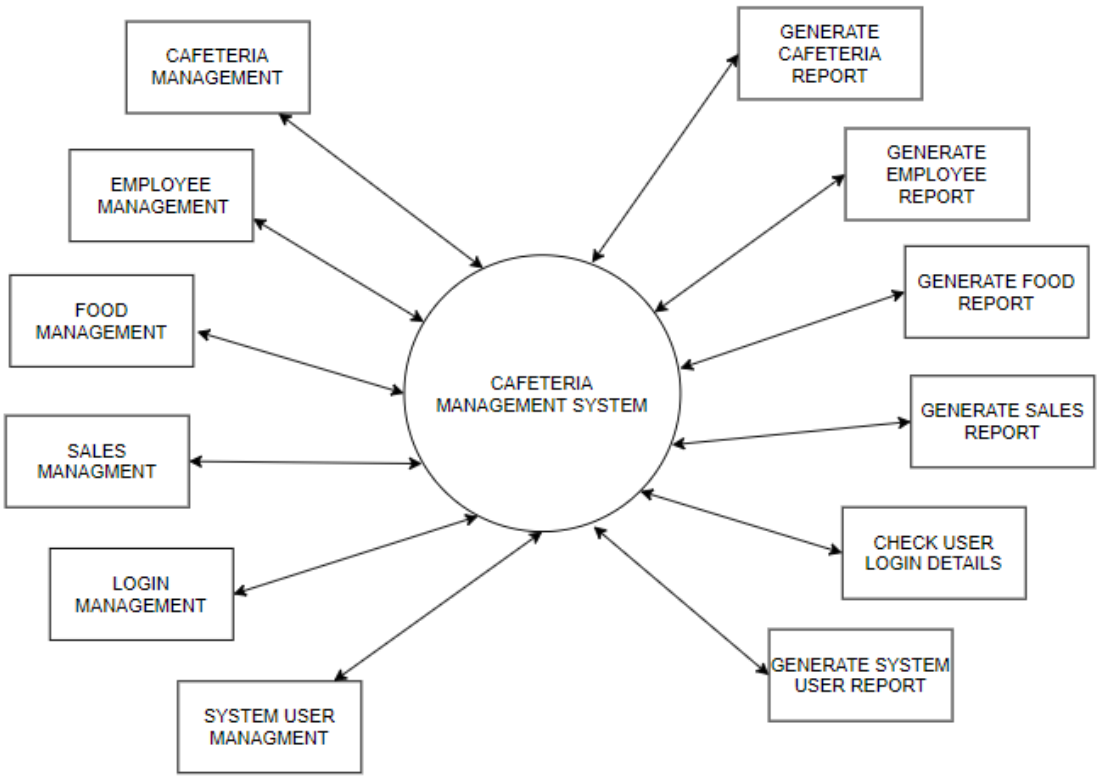


Figure 4.1.2[Level 1 DFD]

- Level Two Diagram:

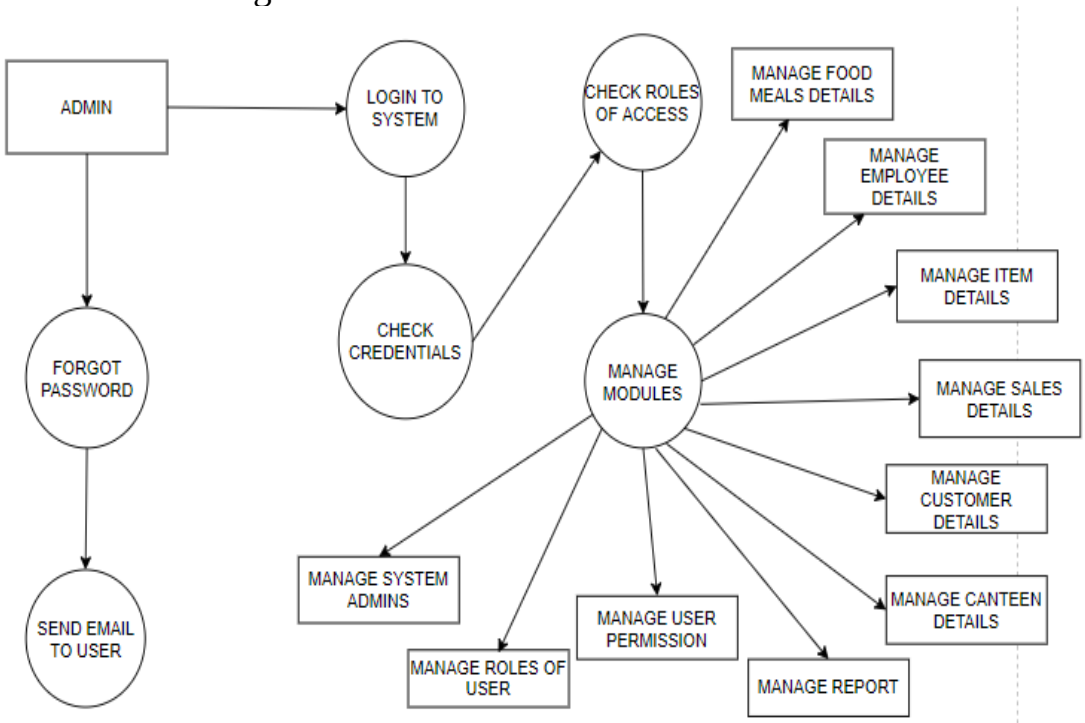


Figure 4.1.3[Level 2 DFD]

4.2 Use Case Diagram:

Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors. The use cases and actors in use-case diagrams describe what the system does and how the actors use it, but not how the system operates internally.

Here users and admin are the actors and the working of the system is use cases.

Fig 4.2.1[use case diagram]

4.3 Sequence Diagram:

A sequence diagram is a type of interaction diagram because it describes how—and in what order—a group of objects works together. These diagrams are used by software developers and business professionals to understand requirements for a new system or to document an existing process. Here this sequence diagram shows how the system works in step by step.

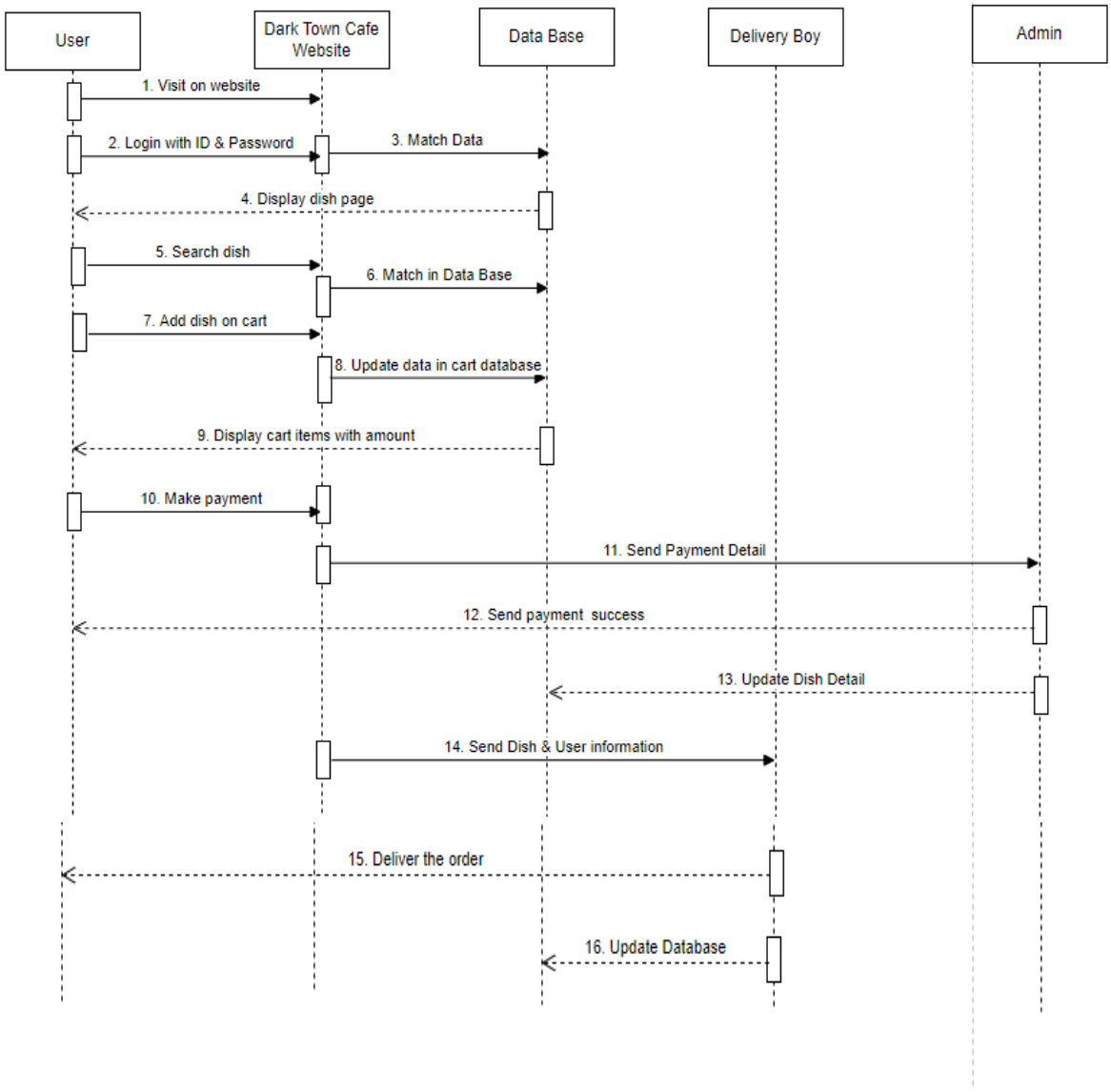


Fig 4.3.1 [Sequence Diagram]

Chapter – 5

OBJECTIVES

The main objective of this project is to manage the details of cafeteria, sells, meals. It manages all the information about cafeteria, meal type, meal. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build a website to reduce the manual work for managing the cafeteria. It tracks all the details about the sells, product, meal.

Functionalities provided:

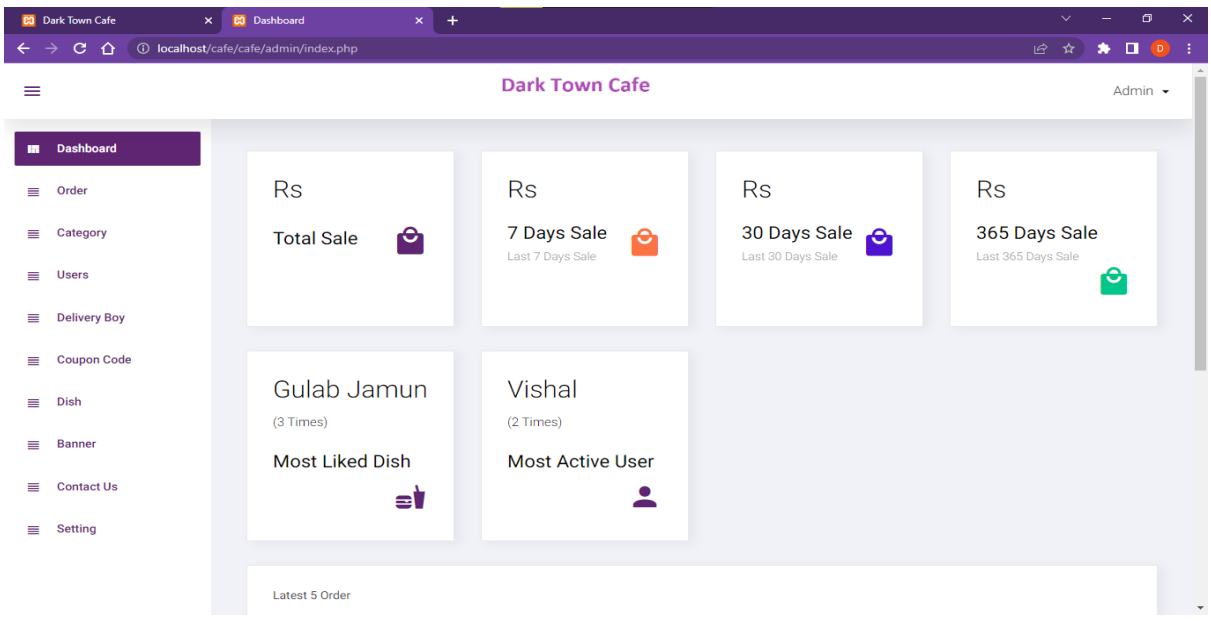
1. Provides the searching facilities based on various factors such as cafeteria, sells, product, meal.
2. Manages the meal type details online for product details, meal details, canteen.
3. Tracks all the information of company, meal type, product, etc.
4. Manages the information of the café.
5. Show the information and description of Café, sells.
6. To increase efficiency of managing the canteen.
7. Deals with monitoring the information and transactions of product.
8. Manage the information of canteen.
9. Editing, adding and updating of records is improved which results in proper resource management of café data.
10. Manage the information of product.
11. Integration of all records of meal.
12. Chat assistant is added to assist new users.
13. This will minimize the number of employees at the back of the counter. This will avoid long queues at the counter due to the speed of execution and number of optimum screens to accommodate the maximum throughput. The system will be less probable to make mistake, since it’s a machine. The system will help to reduce the cost of labor.

Chapter – 6

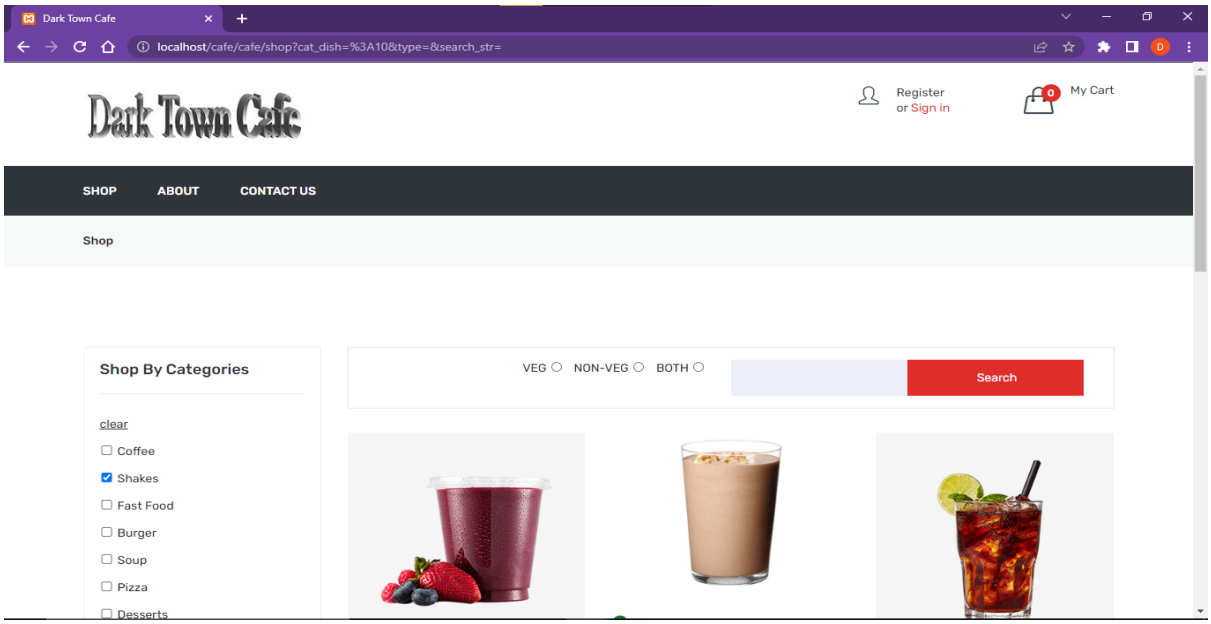
RESULTS

User Interface:

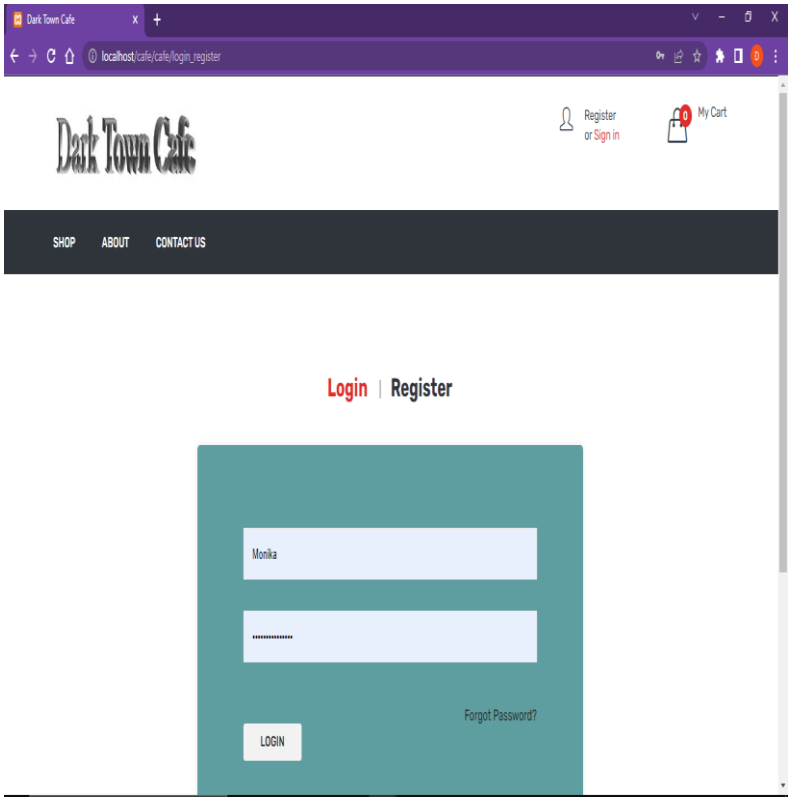
Admin Page:

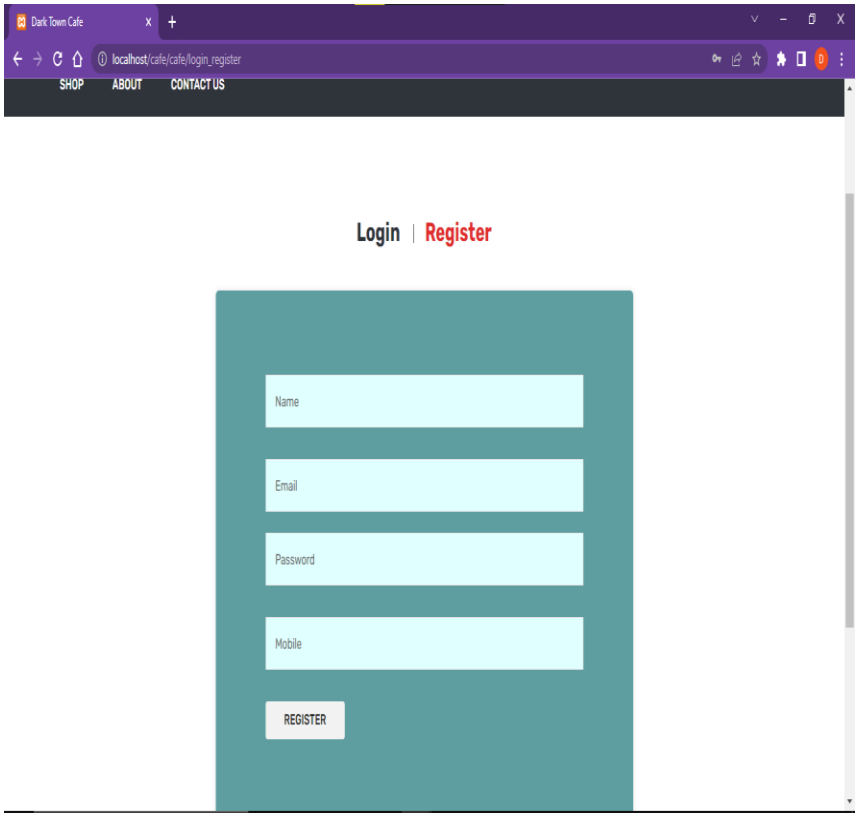


Shopping Page:

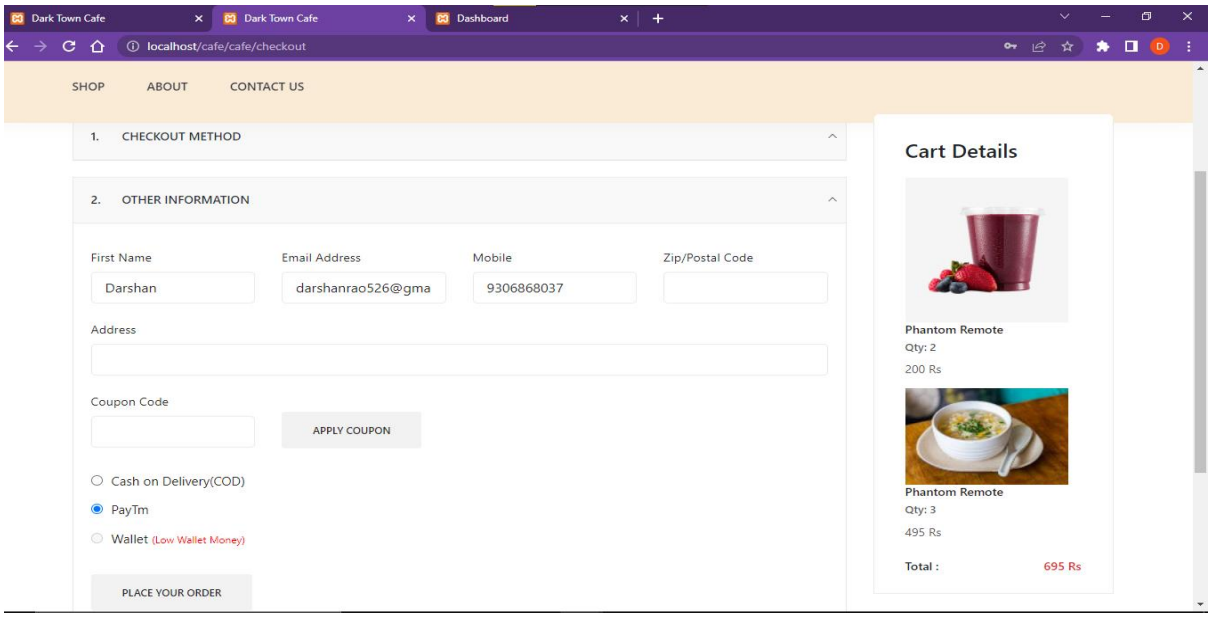


Login and Register Page:





Checkout Page:



Chapter – 7

CONCLUSION

Here the need for website food ordering is analyzed and its advantages over the traditional food ordering system in restaurants are studied. The proposed online restaurant management system is time saving and error free as compared to the traditional system. This system attracts customers and also adds the efficiency of maintaining the restaurant's ordering and billing. Hence it is the modern way to grow up the business using Ecommerce. Here implementation of an advanced restaurant menu ordering system using smart android mobile phone. This system entirely reduces the unnecessary time.

FUTURE SCOPE

- Increase sales rate with the help of social media.
- Ease to handle.
- Traffic decreases.
- Saves the time.
- Push notifications.
- Home deliveries.
- Pre ordering.

Chapter – 8

REFERENCE

[1] Tom Matzen, Marybeth Harrison, “Start & run a coffee bar 1st Edition”, Canada, 1997..
[2] Michaela Altmann, “Coffee shop industry – A Strategic Analysis”, Pittsburgh, March 2007
[3] Wayne Crosbie, Alan Hickman, Garry Blackburn, Alan Macguire, Jim Irwin, “Manage and operate a coffee shop”, Association of Southeast Asian Nations (ASEAN), 2013.
Jim Irwin, “Manage and operate a coffee shop”, Association of
[4] A. Gardner, “7 benefits of business process automation.,” in SOLIDiTech, 2014
[5] L. Brotherton, “5 ways your business benefits from automation,” in ConnectWise, 2016.
[6] N. Bakanowicz, “Why are SMB’s hesitant to embrace new technology?,” in North American Bancard Blog, 2017.