GALGOTIAS UNIVERSITY

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

Online Meal Reservation System

A Report for the Evaluation 3 of Project 2

Submitted by

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In partial fulfillment for the award of the degree

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

SCHOOL OF COMPUTING SCIENCE &ENGINEERING

Under the Supervision of

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APRIL/MAY-2020

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ABSTRACT

This is a project on “Online Meal Reservation System”. It is an approach that allows the client to order their food at any time and any registered place. Food production suffering lots of problem to contact with the clients directly. Due to this they used to face lots of loss and demotion. One of the major issue is standing in long queue for so long and no enough time to check the menu as well as no time to opt desired food. Most of customers are not aware to the restaurants because there is no option to promote it. The preparation of food takes couple of more minutes which seems quite hectic sometimes. Consequently, this approach magnify the speed and systematization of taking the request from the clients. Furthermore, it issues adaptable web pages and efficacious commercial medium up to date item of online meal restaurant to the clients with low cost. At the same time boost up market share for food restaurant and increase return on investment for the investor. The formatted procedures have been selected to develop the Online Meal Ordering System.

INTRODUCTION

E-restaurant is the online food ordering and table booking system. It is very easily manageable online food ordering system that allows your restaurant to manage your food order through website visitors can browse food menu in easiest way. Food is one of main factors of daily life so we can see restaurants everywhere. Some restaurants are popular, many people want to eat at that restaurant but sometimes there are no enough tables or food for customers. Therefore, such restaurants need to have a system to manage these problems.

(i) Overall description

Online food ordering and table reservation system to manage the restaurant business. The main point of developing this system is to help restaurant administrator manage the restaurant business and help customer for online ordering and reserve table. A restaurant waiter takes the customer order by manual system with pen and paper. This is a problem for restaurant waiter; there is the probability of losing and duplicating customer information. As a result, the current system is not effective and efficient to use anymore because the current system cannot save, manage and monitor the restaurant customer information, menu, customer ordering and generate report well.

(ii) Purpose

The main purpose is to develop a client/server model, which deals with "Online Restaurant Meal reservation System". The system has two parts first for the customers and the other for the management side.

The customer side allows the customer to view menu list according to the time of delivery he desires an deserve meal for that specific time, and at the management side the staff is allowed to edit information regarding menu list, price, assigning cook, maintain information regarding the orders placed, etc.

(iii) Scope

We are greatly constrained by “Time limitations”. So we limited our scope of project to “Meal Reservation” only.

The sole purpose of project is to learn the web application in Java, how databases work for the web application and how to co-ordinate Java with databases to produce more commercial web applications for daily business.

I will try my best to make better usage of java (servlets, jsp), MySQL.

PROPOSED SYSTEM

The basic aim of the proposed system was to provide all improvised functionality and flavors of the existing system minus the entire drawbacks or shortcomings analyzed. With a front end like JSP, Javascript, CSS, JQUERY and backend like MySQL most of the major irritants have already vanished. All records of this system are stored in separate databases which are regularly updated, so whenever required these databases are used to respond user queries.

The following points were kept in mind while designing this system.

- The system should be user friendly.
- Data validation whenever necessary to ensure correctness of input data.
- Data security should be taken care of.
- Reduce the redundancy of data.
- Maintaining and updating the database easily.
- This system is based on the very popular Model-View-Controller (MVC) architecture. MVC is most commonly used in websites, very popular and tried and test.

EXISTING SYSTEM

In old system, we can't do reservation online and old system has following problems.

- More time taking.
- Before reservation it is complex to find all information about the hotel.
- Lot of paperwork.
- Hard to analyze data real time.
- Difficult to process history data.
- Difficult communication b/w different branches.
- Hard to introduce new processes.

IMPLEMENTATION / SYSTEM DESIGN

Hardware and Software Interface:
This part contains efficient software and hardware requirements to run.

(a) Software Requirements

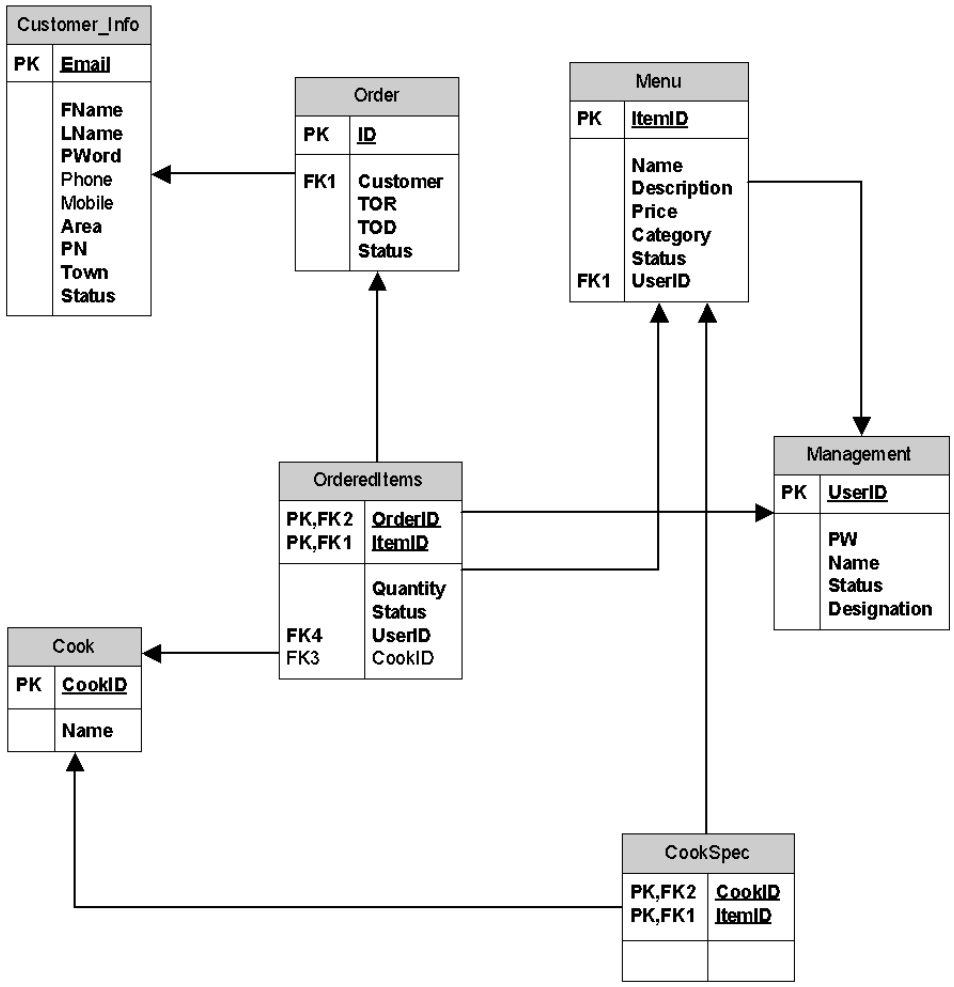
- OS: Windows 7 or above
- Tool: Net Beans 8.0.2
- Web Server: Tomcat Apache 8.0.15 or Glassfish 4.0
- Platform: Java
- Scripting: JSP
- Backend: MySQL

(b) Hardware Requirements

- Processor: Intel Dual core and all above
- Main Memory: 1GB DDR3
- Hard Disk: Approximate of 10 GB OF Disk Space
- Keyboard: 108 keys
- Monitor: 20” Color LCD
- Mouse: PS/2

Database Design:

ER Diagram for "On line Meal Reservation System"



Description

Customer_info: This table keeps the record of the customer's information before user logs on, he fills up a form that guides him how he can become a member. Email ID is primary key in this table so we can recognize each member's email ID uniquely as it is used as their user ID as well. Other information includes customer name, password, contact no, address and status, the later tells him about whether the member is blacklisted or locked.
The entity shares a 1: N relation with order utilities.

Menu: The name insists, it contains the information of all menus and its related matter, each menu is uniquely identified by its Item ID (Primary key). The purpose here is to provide customers all the information regarding menu such as Name (item), Description, Category, price and status (to check customer, whether that item is currently available or Not!!). Later, at the management's

point of view, we provide user ID (uniquely selected by management staff) to alter the contents of table. This entity shares N: 1 relationship with the ordered item entity.

Ordered Item: This table provides information to the management staff regarding the uniquely generated order ID, which may contain one or more menu item uniquely identified by item ID. Apart from this, the management can check/alter the status of the order along with, they can alter the cook/s which was previously assigned to fulfill the order (as each cook is uniquely identified by cook ID), this can be done by the management staff by logging in with User ID. A cook can place status over this entity regarding the status of the specified item is ready for delivery or not! This is done by using uniquely provided cook ID. From customer's perspective, customer can check the status of his order in detail i.e. the status of each item in his order from this table as well as the quantity he ordered, the later can also be helpful at the management side. This entity shares 1: N relationship with the Menu table.

Order: This table tells about the Order ID (which is a primary key), who has placed the order and gives details about the time when order was placed and the time when the order will be delivered; along with the status of the order
(Usually some 5 status labels are assigned). This table shares N: 1 relationship with the Customer_info entity.

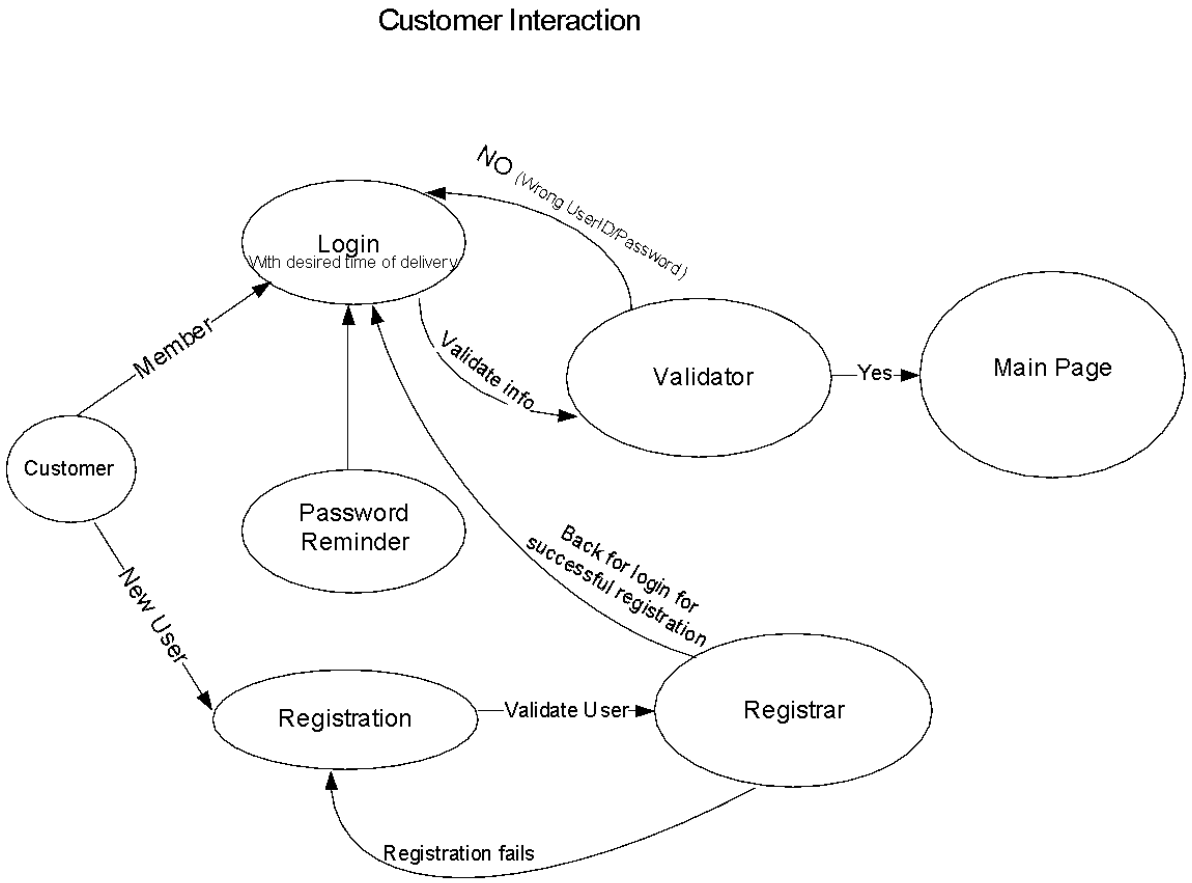
Cook: Every cook is uniquely identified by his ID called 'cook ID' and the other field "Name" is another step that will help management to recognize the specific cook. This entity shares N: N / N: 1 relationship with the ordered item and 1: N relationship with cook spec entity.

Cook Spec: This table informs the management staff regarding the specific cook in his related items. Each cook is identified uniquely by ID same as before!!!

Management: This Table represents the total management side of our project, User ID is the primary key in this table. Other fields include password and Name. The status tells about which customer has to be blacklisted or blocked. The "designation" field tells the level of user, say the administration side or a cook. The privileges are set according to the designation for e.g.: A cook cannot cancel the order and so. The management staff can access the Menu and the ordered items and table.

System Design:

System Design for Customer



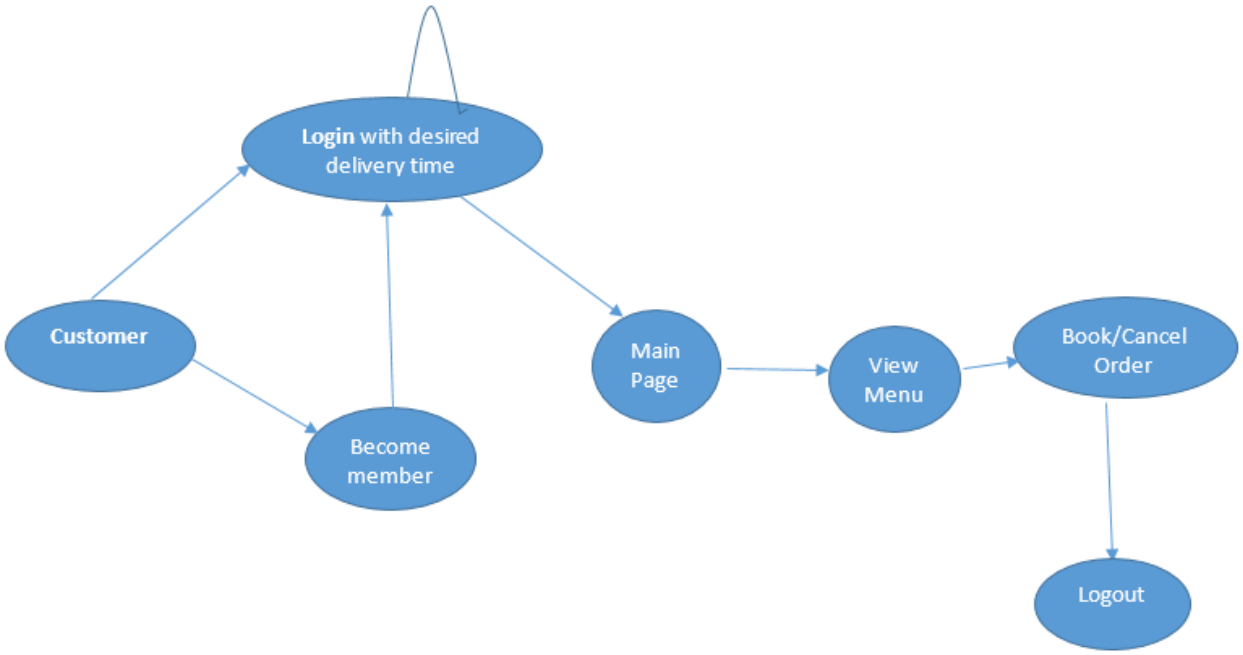
For giving the order, the user should become a member initially. User would have to install his information like the address and other key information so that he doesn't have to give his information each time. For signing up every customer has to give some this details such as address, name, Contact_no etc. and the most important is email ID which is the primary key to identify each customer uniquely, thus email becomes the User_ID for the customer, immediately after submitting the form, a password is sent to respective Email_ID so he can access the site and service.

The question that "why the user is not permitted to choose his own password initially?" And "the reason behind this approach is that, by doing this we can validate the user's email and later on he can access the site.
But again how Validation...?

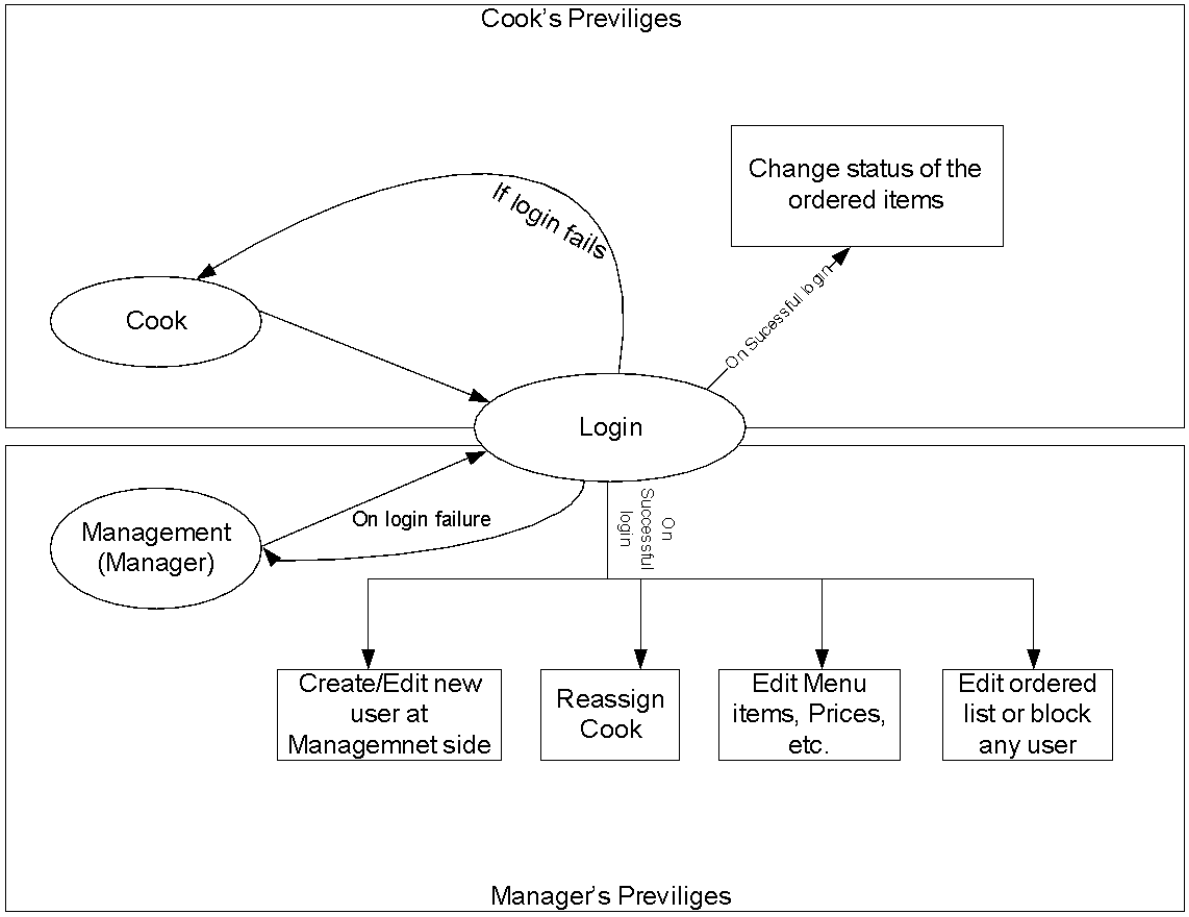
Our only intension of doing this is that, only that person (user) should access the site who originally owns that email ID (as only that person can extract the password given by us, who knows the password for this email ID!!!!!)....and this way we can avoid users giving others email ID.

The only thing needed here is to sign in to the system through browser and from any place where internet is available. Now he would have the option to edit his current information and big thing to reserve the meal diminishing the human interaction. He would have today's menu (according to the time of delivery which he has entered) in front of him and he have the clear choices for order. He has variety of things to do here and have the option to cancel the order before the specific time of completion. For the first time to access the system, customer has to give his key information like identification and so on.
For the management side, it is quite possible to book many orders concurrently. System will be able to book nearly infinite number of orders at a time. Management side has more updated information and they can get the currently booked orders through the browser and all automatically. System will be able to deal with the customers who don't come to take their orders by blocking them and not letting them to sign up again. This is done by maintaining some information regarding the status of order and the relative customer. So according to that the system can deal him. How system deals with him..? He should have to pay the amount of the last order in order to continue with his membership. All that would be implemented in Java Server Pages and Java Servlets. At Login page we will be checking the user's existence and mapping his user ID/email ID with his password, if the user is valid then he is allowed to access further.
At Registration, it is checked that the user ID/ email ID is not pre-existing, along with various general events/acts such as the customer had entered right format of the e-mail, or it is not entered NIL, all phone & mobile no's contain only the numbers, etc.
The option of password reminder is also included, so that when the user forgets his password then he can get a new password by giving his email ID, only if he already exists!
By the Management perspective, we will be imposing some privileges so that only an authorized management staff/User can alter the contents of the site. The system also traces which user had altered the contents of the site, as each user at the management side is provided with unique User ID.
At the management side we have usually two types of the users, one the manager and the other is cook, the later can only alter or deal with the status of the ordered items, which he was given to complete. And the former can do all the updates required at the management side such as reassigning a cook, editing menu items, it's prices, descriptions, edit order status or can block some user if situation demands.

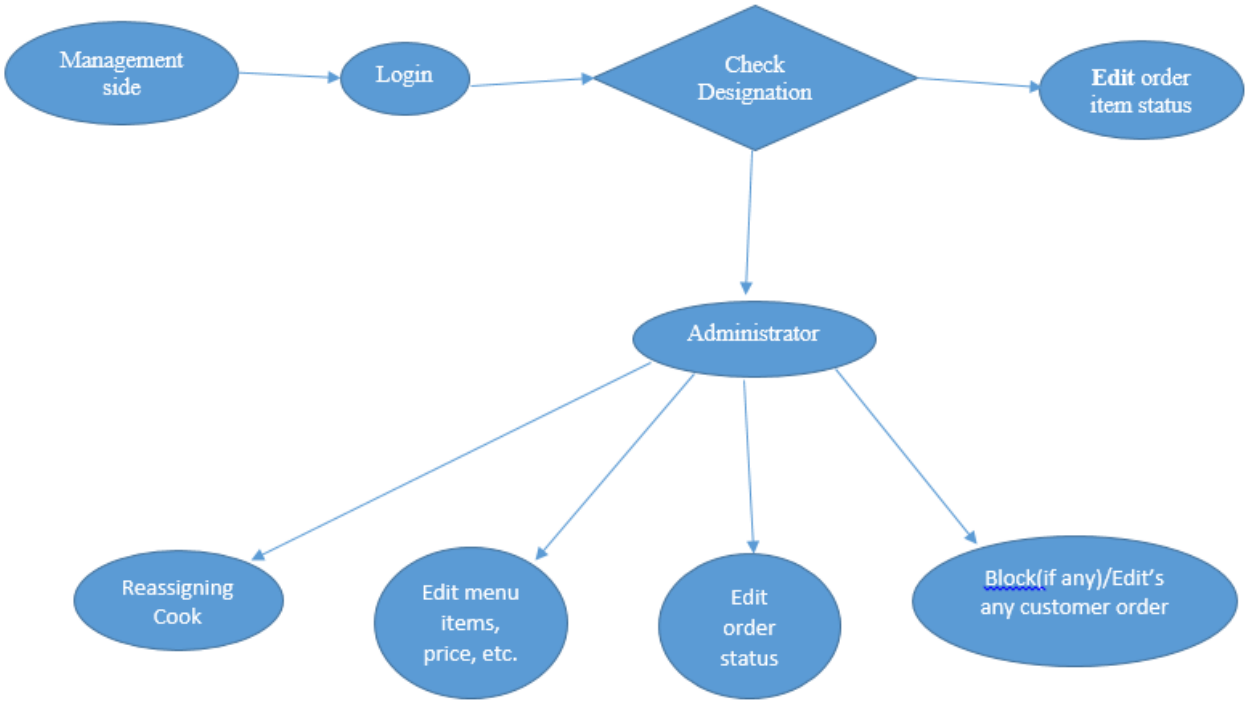
Dataflow diagram for Customer side:



System Design for Management


Cook's Previliges
Change status of the ordered items
If login fails
Cook
On Sucessful login
Login
Management (Manager)
On login failure
On Successful login
Create/Edit new user at Managemnet side
Reassign Cook
Edit Menu items, Prices, etc.
Edit ordered list or block any user
Manager's Previliges

Dataflow diagram for Management side:

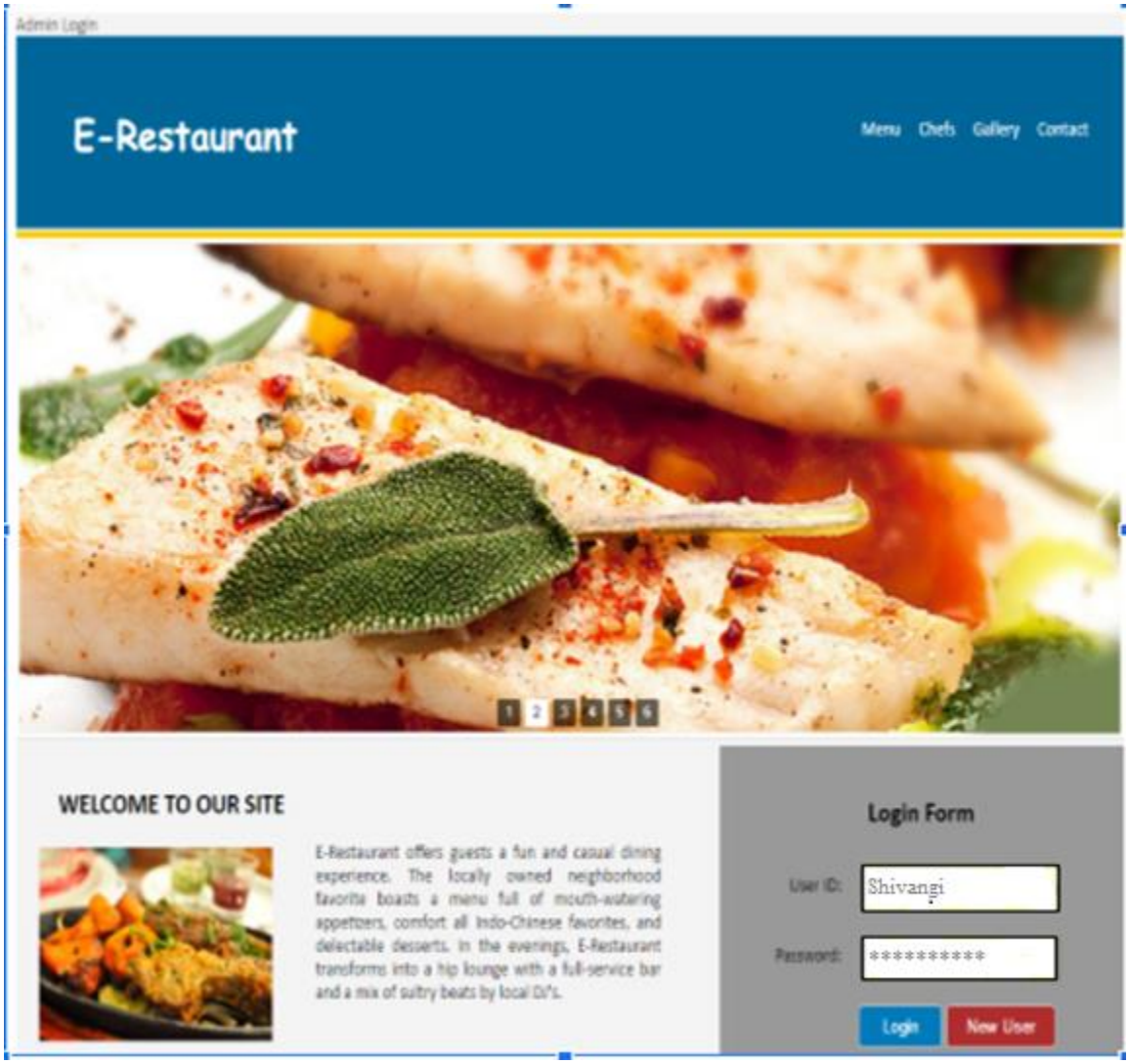


At Management side, initially the staff member has to login, and according to his designation the privileges are set. If the staff member is a cook, then he is allowed to edit only the order items status, indicating which menu items he has prepared.

If suppose the member is an administrator then, he is allowed to reassign the cook according to his priority, he can edit the menu information such as its price, items available currently, etc. He can also change the status of the order (in some special cases), and can also block (if any customer exists)/Edit any customer's order according to his priority.

OUTPUT SCREENSHOT

Home Page:



Registration Page:

WELCOME TO OUR SITE

E-Restaurant offers guests a fun and casual dining experience. The locally owned neighborhood favorite boasts a menu full of mouth-watering appetizers, comfort all Indo-Chinese favorites, and delectable desserts. In the evenings, E-Restaurant transforms into a hip lounge with a full-service bar and a mix of sultry beats by local DJ's.

Registration Form

Name:

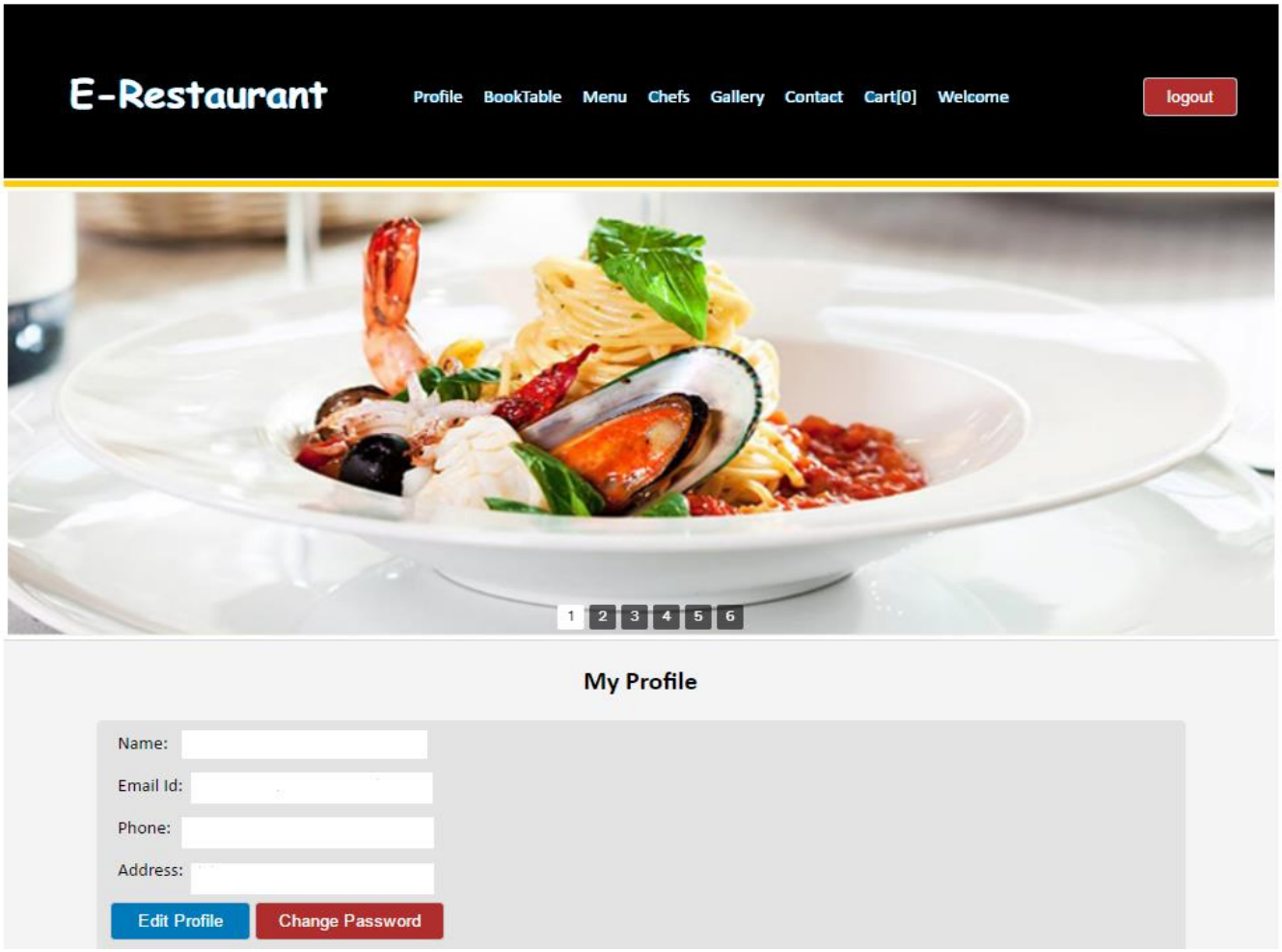
Email:

Phone:

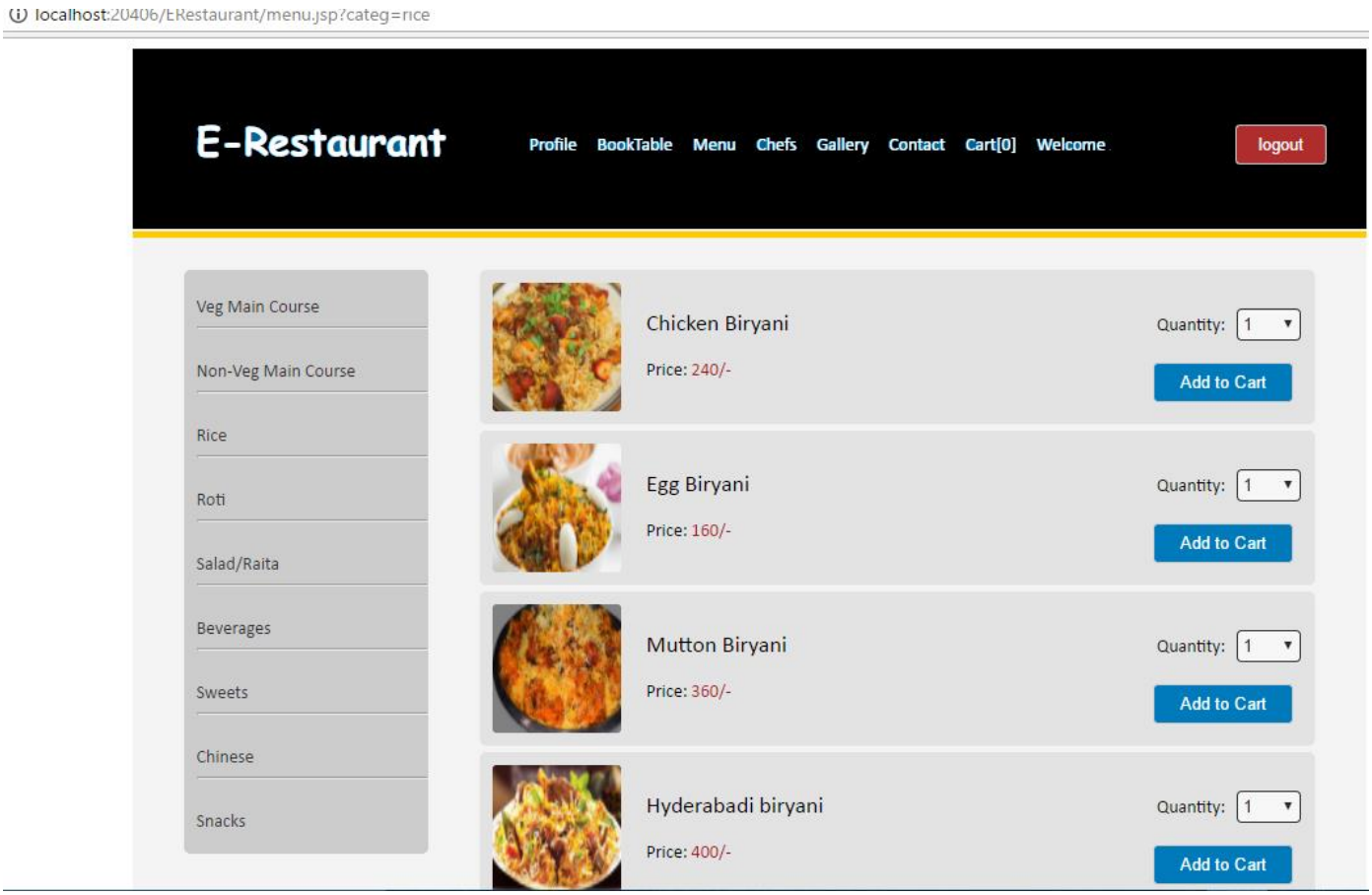
Address:

Register

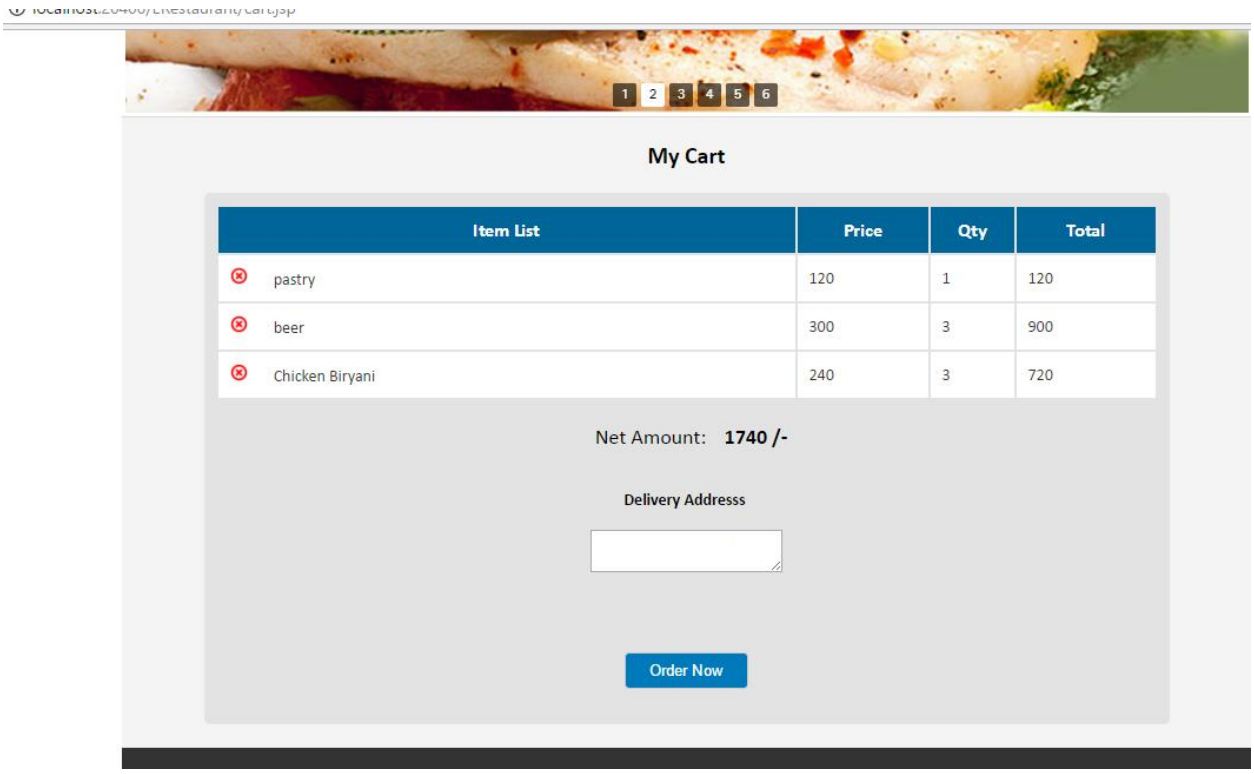
Customer's Profile Page:



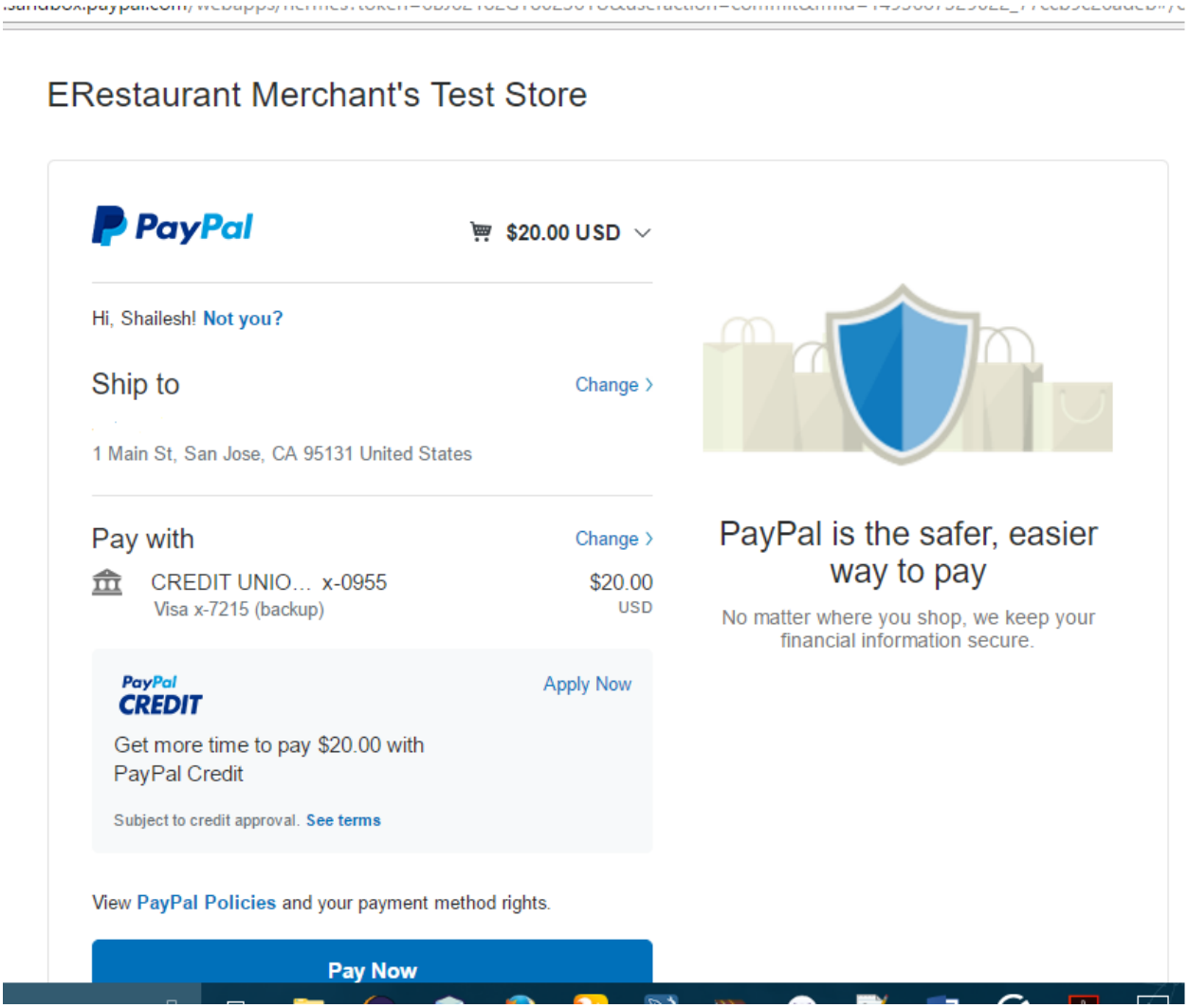
Menu Page:


localhost:20406/ERestaurant/menu.jsp?categ=rice
E-Restaurant
Profile
BookTable
Menu
Chefs
Gallery
Contact
Cart[0]
Welcome
logout
Veg Main Course
Non-Veg Main Course
Rice
Roti
Salad/Raita
Beverages
Sweets
Chinese
Snacks
Chicken Biryani
Price: 240/-
Quantity: 1
Add to Cart
Egg Biryani
Price: 160/-
Quantity: 1
Add to Cart
Mutton Biryani
Price: 360/-
Quantity: 1
Add to Cart
Hyderabadi biryani
Price: 400/-
Quantity: 1
Add to Cart

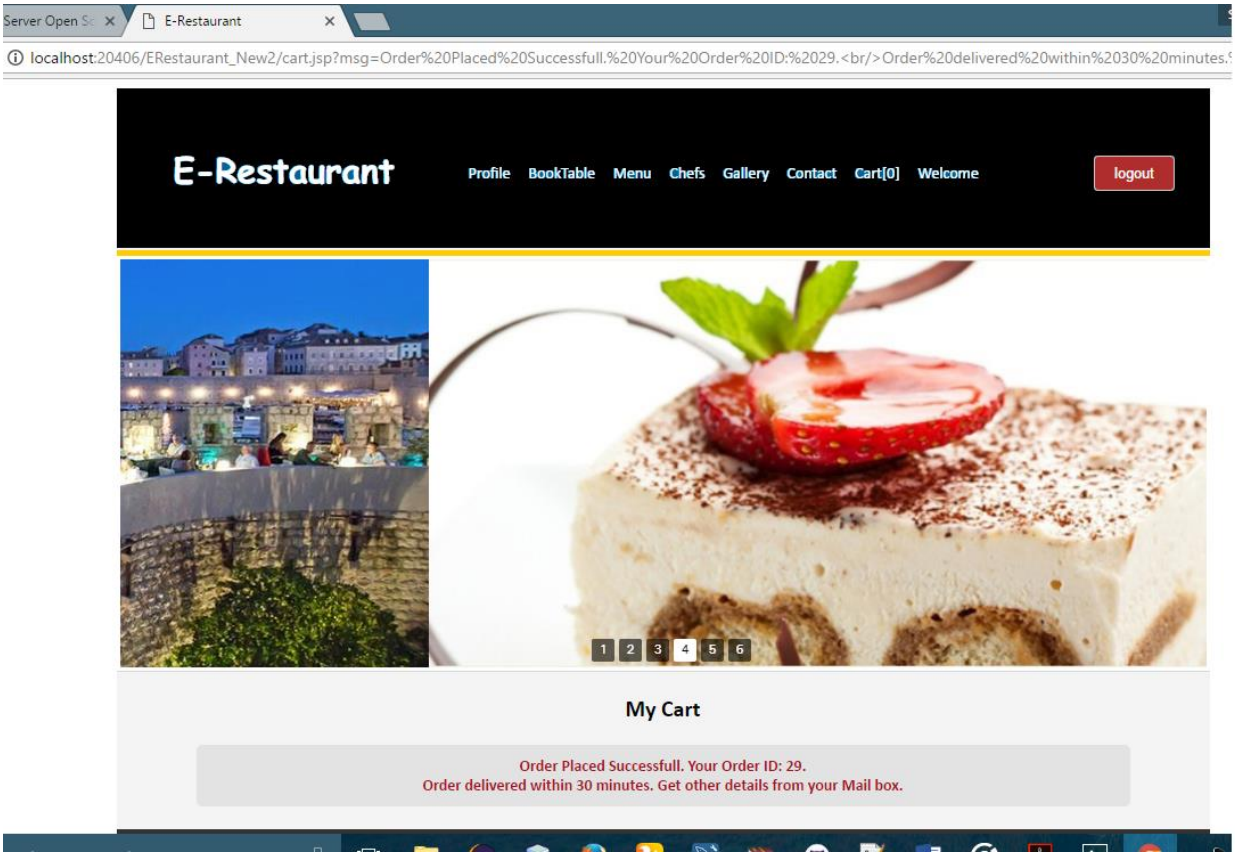
Cart Page:


1 2 3 4 5 6
My Cart
Item List
Price
Qty
Total
pastry
120
1
120
beer
300
3
900
Chicken Biryani
240
3
720
Net Amount: 1740 /-
Delivery Addresss
Order Now

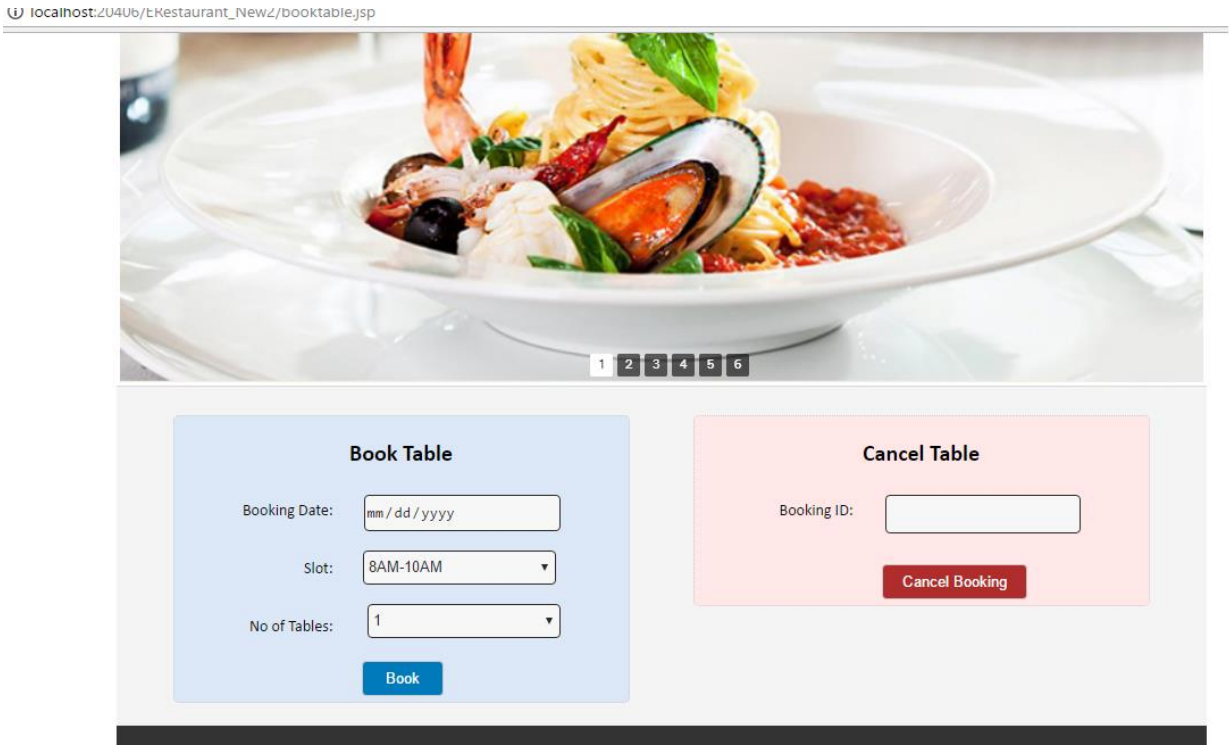
Payment Page:



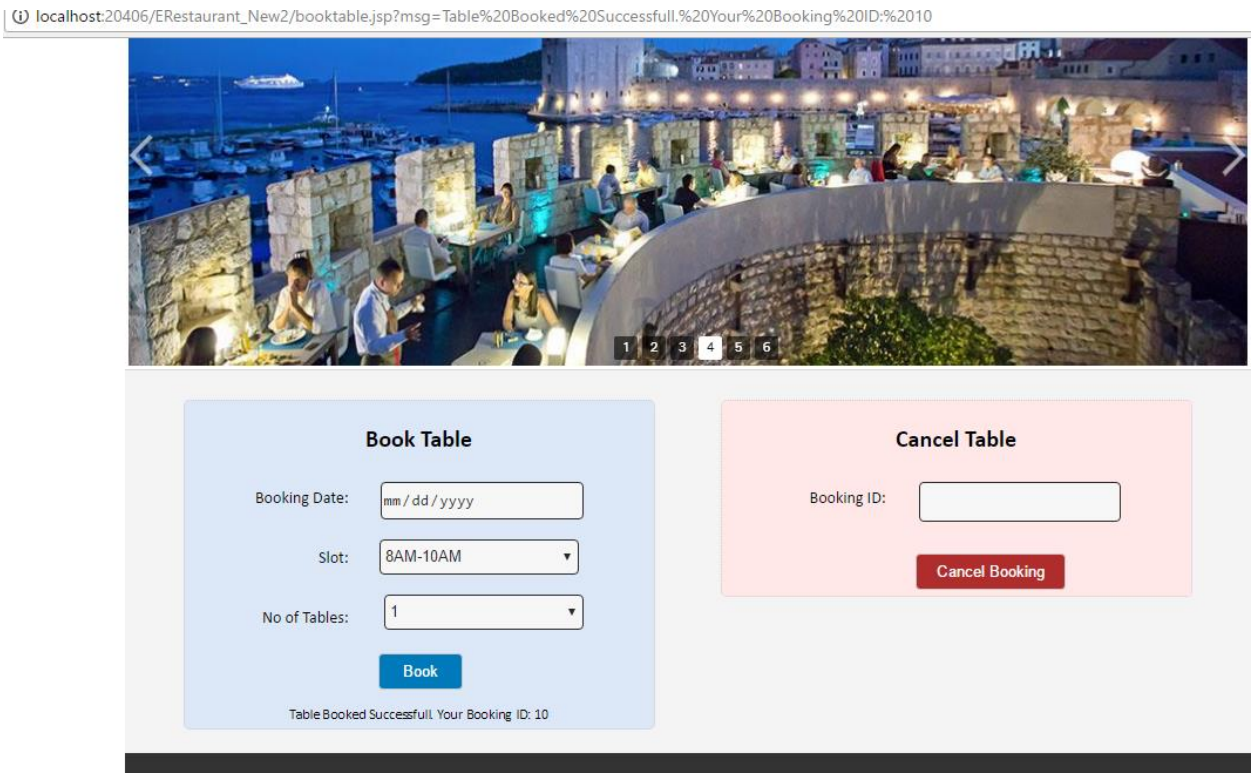
Order Confirmation Page:



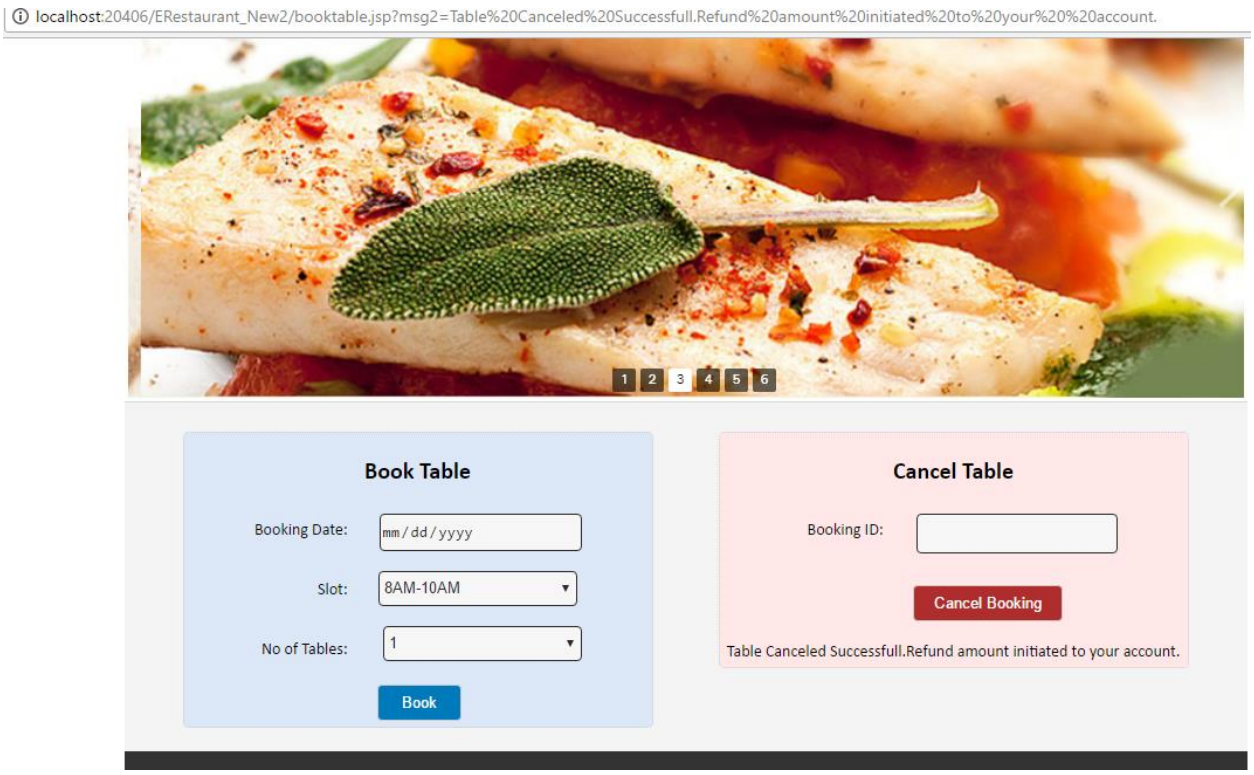
Book Table Page:



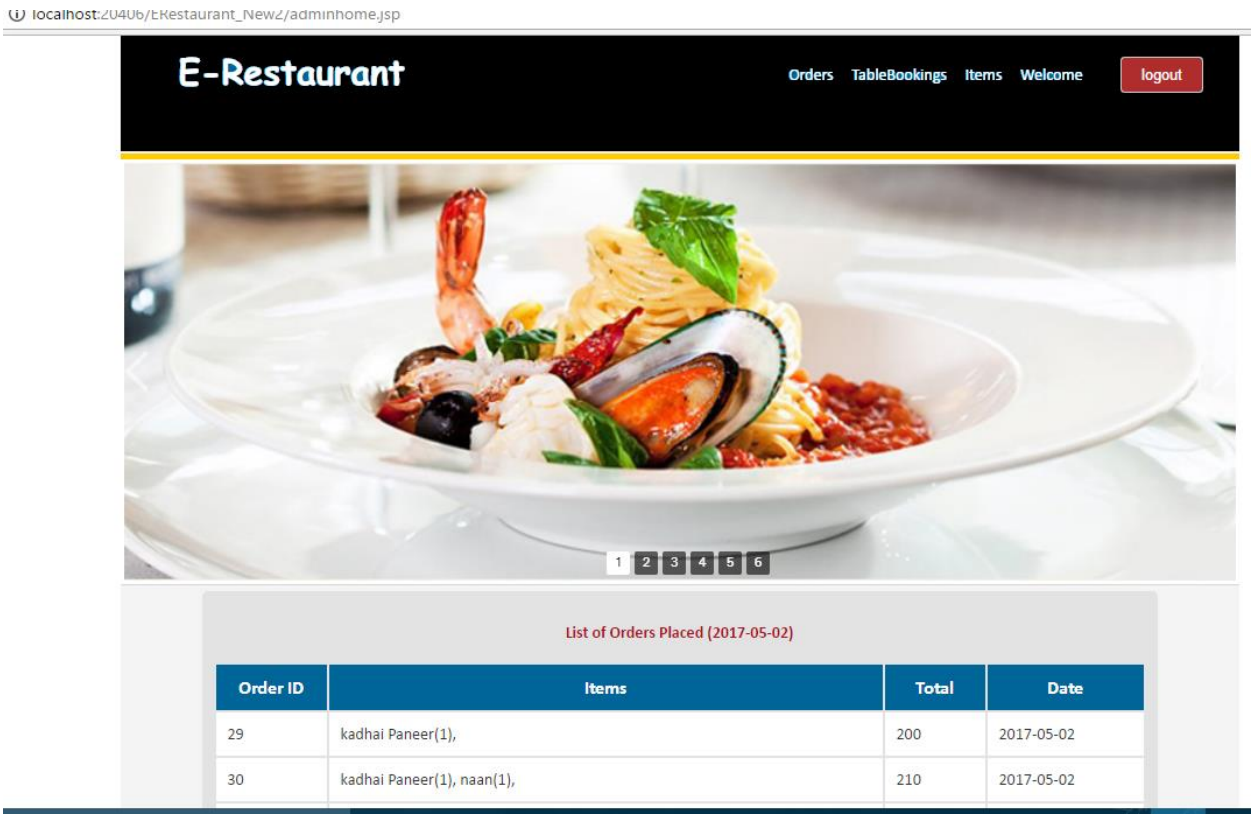
Booked Table Confirmation Page:



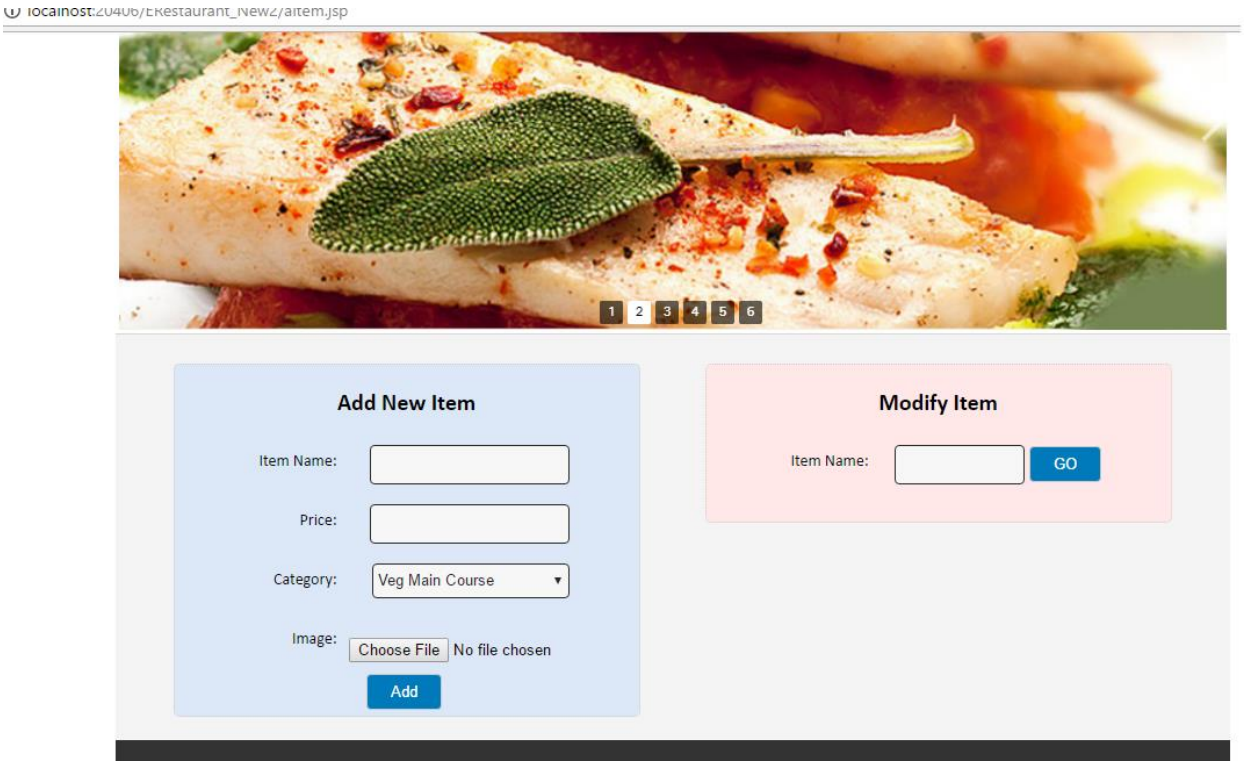
Cancelled Table Confirmation Page:



Admin’s View Orders Page:



Add Items Page:



LIMITATIONS AND CONCLUSION

Even though this dissertation could produce potential outcomes following the research question, there were some limitations, which could be improved in future research. In terms of the users' perceptions of the e-restaurant system, this case study only interviewed restaurant staff. However, there were some issues, which were brought up by the interviewees, such as enhancing customer service and the use by elderly people. Therefore, future research should carry out a case study based on this prototype to examine exact perceptions from restaurant customers. Furthermore, this research focused on developing e-restaurant only for web. Thus, future research should apply system design and source codes in this portfolio to be developed for other kinds of e-restaurant, for example, table side e-restaurant and stand-alone e-restaurant for a waiting area. Moreover, implementation on another platform, such as Android or .Net, is an alternative, which could be carried out in future research. Finally, additional features suggested by restaurant staff, for instance, integration with Point of Sale (POS) system and the advertising of new promotions during meals, could also be included in a new prototype, which should have more functionalities as well as a study of users' perceptions of those requirements.

Hereby I conclude my project report but with that I must confess that throughout the journey of converting this project into reality I have learned a lot and it has given me a face to face exposure with the real projects in the field of information technology. I would also like to mention that I am not going to leave this project here only. I will make sure that it is updated according to the changes in the field of education.

FUTURE IMPROVEMENT

After the application was deployed and the experiment was conducted in the restaurant, I spent more time at the restaurant to understand the customer reaction of the new system. The observation also helped to analyze the actual operations of the restaurant, and the associated improvements in the application can make it more helpful for the order processing activity. In the next two paragraphs, the improvements suggested by the customers and the restaurants are described. The customers, through the evaluation forms and some directed conversations, suggested the following improvements to the application that the project team decided to implement in the future versions of the application.

Many users felt that the scroll bar in the menu with a long list of menu items should be avoided, as it is difficult to scroll using the smartphone. Therefore, the future UI design of Customer View will be without the scroll bar. Others felt that shortcuts like 'repeat last order', similar to the manual scenario will increase the power of the application. The project team decided to observe the restaurant operations more closely on the current scenarios in the order taking process for identifying new features to the application.

Order repetition shortcut is a good idea for the next release. UI needs to be improved even more and the 'add to tray' option should be reconsidered. Few users were not able to understand this feature and could not understand why the selected item is not reflected in the order screen. Reduce the number of clicks for placing the order for default settings on most frequently used items and drinks.