

Restaurant Management System

By

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Restaurant Management System

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Declaration

The project submitted herewith is a result of my own efforts in totality and in every aspects of the project works. All information that has been obtained from other sources had been fully acknowledged. I understand that any plagiarism, cheating or collusion or any sorts constitutes a breach of College rules and regulations and would be subjected to disciplinary actions.

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Programme: Advance Diploma in Science (Business Information System Year 2)

Abstract

The purpose of creating the system is improving the customer services by provided a convenience to customers to make order through online and increase sales. Besides, it enables customer to make reservation in advance via network. By this way, it can save transport, calling charge and time. It also carried out in partial fulfilment of the requirement for Bachelor of Science.

This project consists of many subsystems and each of them had its own features and functions. The subsystem includes online ordering, reservation, payment, delivery, SMS integration, platform design, feedback, redemption, maintenance and report subsystem.

The methodology that we used is SDLC. SDLC is a conceptual model used in project management that describes the stages of development project. We had used many tools like Microsoft Visio, IBM Rational XDE to draw the diagrams, Visual Studio 2010, Microsoft Office Project to create project schedule, SQL Server Express (Database), Flash, etc to develop the system. AjaxToolkit also had used in this project. The techniques that I was used are fact-finding, project planning, project implementation and project testing. I had built some models or diagrams for requirement analysis.

Unified software development process (USDP) can capture many elements of best practice. The main phases are include concerned with determining the scope and purpose of the project (Planning). Gather all the requirements and determining the structure of the system (Analysis). Construction/implementation is carried out to build the system (design & implementation). Finally, prepare the system and user guide for the system (documentation). I had completed the project which fulfils the requirements and project objectives. This project strength consists of performance, validation, user friendly, security, special feature and so on. Whereas the weaknesses is the report header does not display selected month.

As a conclusion, I had learned and gained many experience in this project especially in coding. Time management and team work is very important in development system. For the future improvement, we can add in feature like multiple languages, encrypted password, entertainment (games) to make the system more useful.

Acknowledgement

I wish to express my sincere gratitude to project supervisor, Ms.Chin Chai Lim, for her guidance, constant support and encouragement throughout the completion of my final year project. I would also like to convey my heartfelt appreciation to Ms.Chin for contributing her ideas and in-depth knowledge in the field.

A warm thank is extended to Ms.Chin for sharing her resources, opinions, knowledge, experience and skills in programming and development methodology, so generously. I would also like to personally thank my family, fyp partner, friends in TAR College and my fellow course-mates who have one way or another extended their assistance in completing this project.

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Chapter 1

System Planning

System Planning

1.1 Introduction

This chapter will introduce about the project aims and objectives, company background, project scope, include the overview diagram and general description about the modules, project schedule, project team which being divided to handle different task and methodology or approach that will be used to develop the system.

1.2 Project Aims and Objectives

Nowadays, the world is getting into digital world. System was trying to build out to make people even more convenience on any aspects. Restaurant Management System provides an online system to users to make order online. Indirectly, it involves seller (restaurant) and buyer (customer) which could bring benefits to each other and help to sustain the environment. It is a win-win situation that will bring benefit to the world. This system was bringing a convenience for customer that can make order by just press a button.

It provides customers with a completely new way to make order. By providing customers convenience and also increase the sales. They can generate more orders via the Internet. No time wasted with order taking or letting the customer browse the menu over the phone- they can do it all online. This online system is globalization, the broaden customers reach with the flexibility to take orders 24*7*365. Now be available to customers even while rest. Customer can even make reservation in advance and make order online anytime and anywhere.

Customers will be able to do things as per their own schedule. This online food ordering system will invariably lead to higher customer retention and acquisition rates. Customers can quickly, effectively and securely order food online, food gift certificates and make reservations for dining directly from your restaurant's website. It helps build valuable customer information database automatically as orders are placed on the website.

Besides that, this project may provide a user-friendly interface and easy-to-use which enables users who with no experience also know how to use it. This project provides front-end and back-end, customers can online order and gets latest information about our restaurant, online reservation, maintenance and so on. It also provide an easier way to systematic generate sales report based on the selected date which enable admin for decision making.

This system provides more reliable, usability, maintainability and dependability functions. By creating quality, easy to keep track management of new system, so that it can streamline all the works by a simple click. By develop the online order system can reduce the unnecessary cost such as staff salaries, advertisement, customer satisfaction, reputation, etc. Our restaurant also easy to keep track for the maintenance (eg: staff or customer information) and point redemption.

The main purpose is needed to achieve a better customer service and bring them convenience. It is able to provide accurate, reliable and up-to-date information for decision making. It also can easy to get customer suggestion or feedback and understand customer preferences and able to interact with customer. Security is also provided to prevent unauthorized user from accessing to the system.

1.3 Company Background

1.3.1 Nature of business

TwinsYen Restaurant was establishes in 2008's by two sisters call Ms. Ta Yoke Yen and Ms. Wong Xiao Yen in Wangsa Maju, Kuala Lumpur. Our restaurant was widely liked by customer especially Tarc College student. It is always the excellent and cozy place for various sorts of various style food and drinks which are delicious yet affordable for everyone from young to old. We have made an exciting move towards new cuisine in the domestic market. What makes TwinsYen Restaurant so attractive and captivating is their delicious yet affordable price which suits the people needs. Besides that, the decoration and set up in the restaurant make the place even better to be dining in. The restaurant has expanded the business and increase number of staff until 50 employees.

1.3.2 Products and services

TwinsYen restaurant serves mainly style food. Its menu is frequently changed with seasonal favourites. TwinsYen menu is enriched by the adoption of western, Malay, Thai and Chinese dishes that have been carefully redesigned to suit Malaysian tasted with different race of customer in order to enhance its attractiveness. TwinsYen philosophy has always been to provide a wide range of good quality cuisine at affordable prices in a bright, clean and modern ambience.

Its menu is designed around three time segments, namely breakfast, lunch or afternoon tea and dinner. Products offered in each segment are different and also are priced different taking into account the eating and spending habits of its customers. TwinsYen also provides service for delivery. TwinsYen Restaurant has sold variety flavour breakfast such like sandwiches, eggs, econ mee, nasi lemak or tea for workers and students in the morning. For lunch, the restaurant will prepare services and food. Besides, TwinsYen has also carry out the special event like birthday party, farewell party or gathering. Other than that, TwinsYen also provide the service of reservation that allow customer to make reservation through online. They also can reserve for meal and design the platform themselves for their birthday party, farewell, or event.

Several of the menu times allow a choice of sauces and side dishes. The menu is reviewed and changed, where deemed necessary, on a weekly basis. Same items rotate twice a week. In order to ensure and enhance its competitiveness, TwinsYen continuously reviews, update and improves the product it offers. To this end, TwinsYen constantly seeks to introduce new food products to its range in order to increase its variety, keep the interest of its customer and thus built up their loyalty. We appreciate our customer's loyalty, so we have redemption (eg: toys, key chain, free set table of meal, cup, umbrella, etc.) to thanks them for using our services to make order and their loyalty.

1.3.3 Organisation structure:

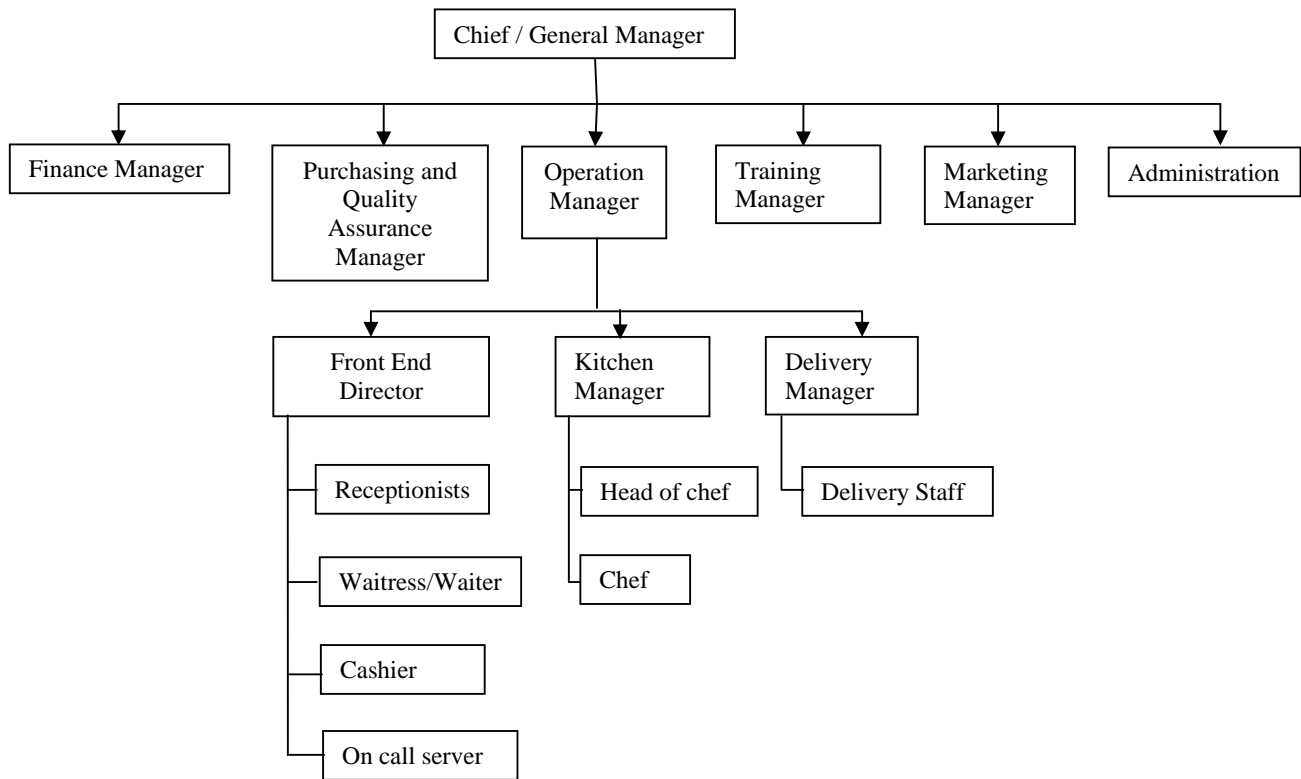


Figure 1.1: Organization Chart

1.3.4 Current systems used and Business processes

TwinsYen Restaurant will operate at 10.00am – 10.00pm on Monday to Friday, 11am-9pm Saturday to Sunday. Now the restaurant has used offline system to keep track all the transactions. All the delivery services are through the phone call. When customers make order, staff will use the application system to take down the order. Then, the order will send to kitchen for preparing the meal. If customer wanted to deliver the meal, they shall call the restaurant to inform the staff for delivery. Customer just can make order when they walk in or call, they cannot make order anytime they like. The delivery services are limit in some of the coverage area only. Points of sales system will be in full operation throughout our restaurant. The associated benefits will gradually be reflected in our customer services, information management and quality control arenas. We anticipate those facilities not only improve productivity and also the change of customer needs can be known.

1.3.5 Business environment

TwinsYen Restaurant is two layers which the first layer is reception customer use and the kitchen. Whereas the second layer has a balcony which was decorated with plants, you also can view outside from balcony. There has a good view environment. Outside restaurant has parking ground for customer to park their car. Our restaurant has a small place to play some music and sing song at night. We have invite singer to have a performance to customer, so that customer can enjoy themselves. Customer can also request them to sing their favourite song. Other than that, we also have happy hour for the customer to enjoy the free gift or free meal time. Our restaurant will always give our customer surprise and enjoyable day.

1.3.6 Size of operation

There are around 50 employees which is Financial Manager, Purchasing and Quality Assurance Manager, Operation Manager, Training Manager, Marketing Manager, Front End Director, Kitchen Manager, Delivery Manager, one receptionist, one bar tender, ten waitress, one head of chef, three assistant chef, and the others under different manager. Each of them is under different department and carries out different task. Our company aim “Make Customer Say Marvellous” reflects our commitment to strive for excellence, as we make strategic business moves in a rapidly changing market needs. We are aiming to provide customers not only tasting food but also clean, modern ambience.

1.3.7 General Description

This Restaurant Management System provides customers with a completely new way to make order and make reservation online. By using this online system, Customers can quickly, effectively and securely order food online, and make reservations for dining directly from your restaurant's website and make booking in advance. It provides convenience way to customer to make order or buy meal without going out. Customer can save the transport cost and time whereas our restaurant also can save the cost of hiring staff. Besides, it can increase the sales and revenue of the company. Other than that, this ordering online system is globalization, so that it will increase customer satisfaction.

Currently, customers have face the problems that they need buy meal outside or make order though phone call. This is because our companies use offline system, the order is limited and inconvenience to the customers. This online food ordering system will invariably lead to higher customer retention and acquisition rates. It will be a faster turn-around of customers by eliminating the wait incurred by order taking and meal preparation. Customers no need designed to come over our restaurant to make order, then waste time waiting for preparing the meal. They can direct make order through online either choose pick-up or delivery, so that they can save time for waiting. In addition, this online system is globalization and flexible as 24hours, 7 week, 365 days, customer can make order anytime and anywhere.

1.4 Project Scope

Restaurant Management System

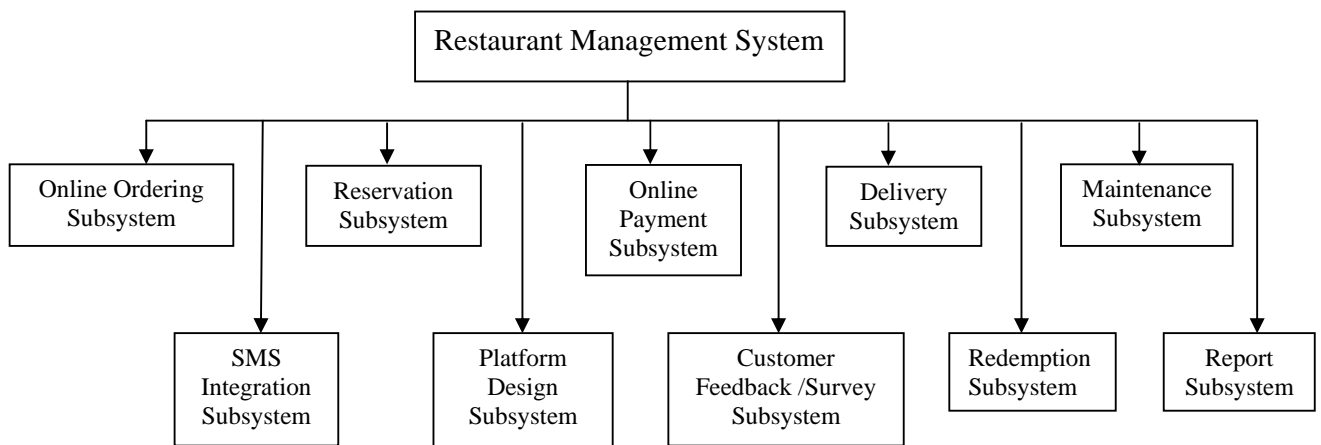


Figure 1.2: Overview of Project Scope

Online Ordering Subsystem

This Subsystem/module enable customer to make order through online. It will display the menu which includes meal name, image, price, and description. Customer can select the quantity and add the meal into order list. Then, customer can view all the orders in order list and send the order to our restaurant by click the confirm button. Staff enables to check the orders from check list and update the status after the meal is cooked.

Delivery Subsystem

This module is use when customers choose to delivery. They should fill in the delivery information such as name, contact number, delivery address, date and time. After fill in the delivery details, submit/send it to the restaurant. The staff will keep track all the delivery after the meal is cooked. Staff can view all the meal order, delivery detail, total amount, tax and charge by using this subsystem. They also can print delivery information for their reference.

Feedback Subsystem

This module is use to get feedback or comment from customer in order to improve customer service and satisfaction. Admin enable to check for the feedback details and generate feedback chart/report as well. So that, they can used this report to analyst the feedback and keep improve frequently. They always reform and innovation, and give customer a fresh impression.

Redemption Subsystem

Staff will use this subsystem to do redemption for customer by their points. It will display the redeem items (eg: items name, image, point require). Staff select the redeem quantity and add redeem, it is not allow to make redemption if the members points is not enough. After redemption, if will update the member points directly. Staff enable to view the redemption report for that day in order to avoid insufficient of stock (redeem items). Customer also can view the redemption history by using this subsytem.

SMS Integration Subsystem

After the order meal is well prepared and ready to deliver, the staff will send SMS to customer to inform that the meal order is ready to deliver. Staff needs to connect the mobile device or modem with SIM card to computer, select the device name, then enter the SMS information and send the SMS details to customer. The module will show the sending result (eg: success), if the sending is not success, it will display the error message to tell that what is the problems.

Meal Maintenance Subsystem

Admin or manager enables to maintain the meal by using this module. When chef have introduce a new meal, they can use it to add the new meal by enter the meal information. It also allows to edit meal information like meal price or image. Besides, admin can delete the meal if the meal is lower sales.

Report Subsystem

This module is use to generate report by admin or manager in order to make decision. The report include monthly sales report, top 5 monthly report, redemption report, feedback report, reservation report and so on. Different report has different purpose or usage. Most of this report is analyst by admin and make adjustment such like increase staff when higher sales month or do promotion when the sales is lower.

1.5 Development Environment

Programming languages

ASP.NET

ASP.NET is a web application framework developed and it allows programmers to build dynamic web sites, web applications and web services. ASP.NET is built on the Common Language Runtime (CLR), allowing programmers to write ASP.NET code using any supported .NET languages. We choose to use ASP.NET because we have learnt it before to create the web pages, so that it is more familiar and easier for us to code it. (Wikipedia, 2011)

Database

Microsoft SQL Server 2008

SQL Server is one of the most popular and advanced database systems currently available. SQL Server is much more powerful than Access and provides several other advanced features and much better security. Data access to SQL Servers is provided in ASP.NET by ADO.NET. SQL Server is a relational database management system (RDBMS) where data is stored and retrieved very efficiently. SQL Server Express is a free, easy to use, redistributable version of SQL Server 2005 designed for building simple data-driven applications. (SpiderWorks, 2010)

When we learn c#, the database that we use is SQL server, it almost same like database access but SQL Server supports large applications with millions of users or huge databases.

Development tools

Macromedia Flash

Adobe Flash (formerly Macromedia Flash) is a multimedia platform that is popular for adding animation and interactivity to web pages. Flash is commonly used to create animation, advertisements, and various web page Flash components, to integrate video into web pages, and more recently, to develop rich Internet applications. (Wikipedia, 2011) We shall use the flash to do the platform design sit desk that allows staff to design the sit desk for celebration or party. In addition, we use it for display dynamic picture of food to attract more customers.

Software

Microsoft Visual Studio 2010

Microsoft Visual Studio is an Integrated Development Environment (IDE) from Microsoft. It can be used to develop console and graphical user interface applications along with Windows Forms applications, web sites, web applications, and web services in both native code together with managed code for all platforms supported by Microsoft Windows, Windows Mobile, Windows CE, .NET Framework, .NET Compact Framework and Microsoft Silverlight. It also supports the C# that we use to create web site. (Azeez Nadeem, 2009)

ASP.NET

ASP.NET is the next generation ASP; it is an entirely new technology for server-side scripting. ASP.NET is a part of the Microsoft .NET framework, and a powerful tool for creating dynamic and interactive web pages. ASP.NET is a server side scripting technology that enables scripts (embedded in web pages) to be executed by an Internet server. ASP.NET is a Microsoft Technology and a program that runs inside IIS. Microsoft Visual Studio has support some language which include C#, ASP.NET that we use to create web site. (w3schools, 2010)

RSA

IBM Rational Software Architect for Web Sphere, (RSA) made by IBM's Rational Software division, is a comprehensive modeling and development environment that leverages the Unified Modeling Language (UML) for designing architecture for C++ and Java 2 Enterprise Edition (J2EE) applications and web services. The benefits of using Rational Software Architect include build software architecture that supports change with a common platform that facilitates easy roundtrip engineering and synchronization of models and code. Leverage UML to ensure the numerous stakeholders within your software development projects are continuously communicating, and use defined specifications to jumpstart development. (IBM Rational Software, 2011) We may need to use RSA in lab to draw the use case diagram, class diagram, state chart, and other diagram. RSA is a good tool for use to draw diagrams.

Notepad ++

Notepad++ is a free source code editor and Notepad replacement that supports several languages. Running in the MS Windows environment, its use is governed by GPL License. Based on a powerful editing component Scintilla, Notepad++ is written in C++ and uses pure Win32 API and STL which ensures a higher execution speed and smaller program size.

Notepad++ is a full-featured text editor with features like Syntax Highlighting and Syntax Folding (C, C++, HTML, ASP, Java, Pascal, CSS and more), User Defined Syntax Highlighting, auto-completion, multi-Document, Regular Expression Search/Replace supported, zoom in and zoom out, multi-Language environment supported, brace and Indent guideline Highlighting, macro recording and playback. (Don HO, 2010)

Microsoft office word 2007

We use Microsoft Office Word 2007 to do our documentation of this final year project. This is very important for us to do this project. We have use the feature of text box to draw the hierarchical chart to describe the various of subsystem, modules and sub-modules in the system. It also uses to check our spelling and grammar and justify all the words to make our document look nicer. It is very useful for us to complete and organize our work.

Microsoft office Visio

For instance, Microsoft office Visio is a diagramming program for Microsoft Windows that uses vector graphics to create diagrams. We have use to draw the Gantt chart and system architecture. Visio has template for more advanced diagrams and layouts as well as unique functionality that makes it easy for users to connect their diagrams to a number of data sources and display the information graphically.

Firefox/Internet Explorer/Opera

We have used the Firefox to search for more information to do this project. The Firefox full of cool features to get the most out of the modern web. Such like One-Click Bookmarking can manage our bookmarks a lot or a little. One click on the star icon at the end of the location bar bookmarks a site. Bookmark, search and organize Web sites quickly and easily. In addition, it is easy customization – Thousands of add-ons give the freedom to make browser. Search Suggestions which start typing in the search bar and it will prompt with a drop down of filled-in suggestions, plus we can use the search bar as a calculator, converter and more.

Awesome Bar that has quick way to get to the sites we love, even the ones with addresses we only vaguely remember. Type in term into location bar (aka the Awesome Bar) and the auto complete function includes possible matching sites from our browsing history, as well as sites we've bookmarked and tagged in a drop down. Besides, we also need to send/download the document after we done our jobs through email. (Mozilla Europe, 2011)

Flashget

FlashGet is a freeware download manager for Microsoft Windows. It has features as integration with web browsers such as Google Chrome, Internet Explorer, Opera, Netscape, Mozilla, Mozilla Firefox, SeaMonkey, Avant Browser, Maxthon, download a sequence of files from multiple locations. We shall use it to download the software like PHP, MySQL, Notepad++, Apache, document needed, flash, java and so on. (Wikipedia, 2011)

MSN Messenger

For communication and collaboration, we use msn to communicate and discuss our project if necessary. Through this method, we shall save cost compare with using our hand phone. Besides, we were using the sharing folder feature to direct transfer the file to other. When we wants to deliver a file to another person on his or her contact list, the "sharing folder" window appears, which is an individualized representation of all previously shared items. In addition, we have use msn to make calling and talk to each other, it is really save many cost of it.

Hardware**Laptop**

Laptop is a personal computer designed for mobile use and small and lights enough to sit on a person's lap while in use. A laptop integrates most of the typical components of a desktop computer, including a display, a keyboard, a pointing device (a touchpad, also known as a trackpad, and/or a pointing stick), speakers, and often including a battery, into a single small and light unit. (Wikipedia, 2011) We must use out laptop or computer and component devices to complete our project.

Mobile phone

Mobile phone or mobile is an electronic device used for mobile telecommunications (mobile telephone, text messaging or data transmission) over a network of specialized base stations. In addition to the standard voice function, current mobile phones may support many additional services, and accessories, such as SMS for text messaging, email, packet switching for access to the Internet, Bluetooth, infrared, and MMS for sending and receiving photos and GPS. We may use mobile phone to communicate with each other. Whenever we have any idea or comment for the project, we may discuss it through our phone if necessary.

Printer

Printer is a peripheral which produces a hard copy (permanent readable text and/or graphics) of documents stored in electronic form, usually on physical print media such as paper or transparencies. We need the printer to print out our document for our supervisor. Ink also a material to refill the printer ink. (Gerald Boerner, 2010) In our project, we are going to print out some reports for the manager to making decision. Some more, we have platform design, it might need to print out the sample picture and details for the team have better way organizing the environment.

Stationery

Stationery has meant of materials like paper, pen, ink, writing implements, notebook, file folder, pencil case etc. We need all of this to write down what thing we need to do when discussing or supervisor give comment to us. The ink is use for printing out our document. We shall buy a folder to store our documentation and keep by our supervisor.

Reference book

We have borrowed some references book in order to learn for the ASP.NET, SQL Server, Ajax, flash for creating our system. From the references book, we can know more about ASP.NET, source code, to create different function of the system. We just start to learn this, Ajax, flash, etc, so that we need more information and book for references to do our system.

1.6 Operation Environment**Hardware**

- @ Printer
- @ Recipe Printer
- @ LCD Monitor
- @ Mobile device
- @ Phone cable device
- @ SIM Card
- @ Modem/Broadband

Software

- @ Operating System -- Windows (Windows 98, XP, Vista, 7), Macintosh OS X
- @ Web Browser -- Internet Explorer, Safari, Firefox, Opera, Google chrome, Maxthon
- @ Adobe flash
- @ Printer Driver

DBMS

- @ Microsoft SQL Server

1.7 System Architecture

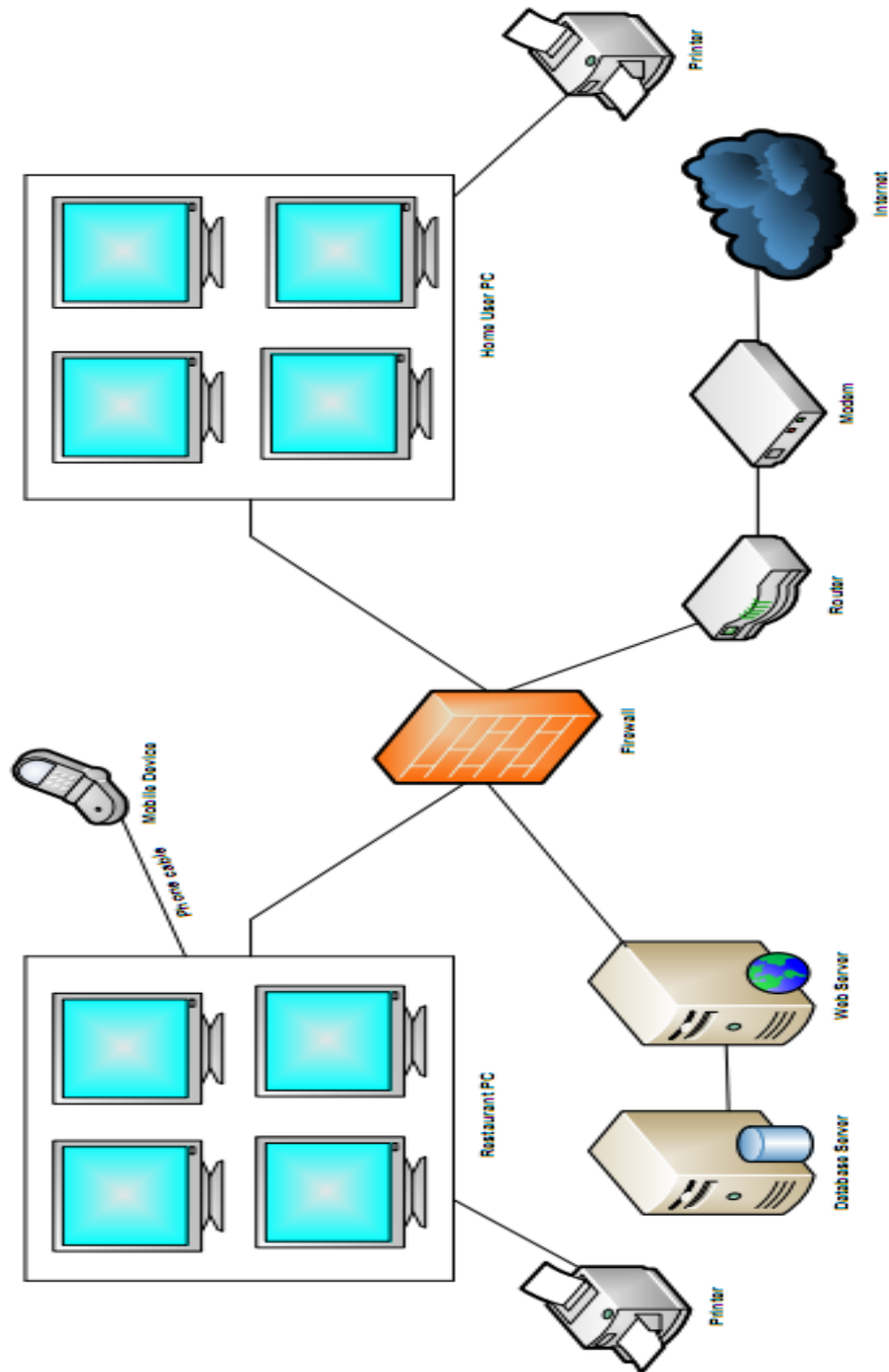


Figure 1.3 System Architecture

1.8 Project Schedule

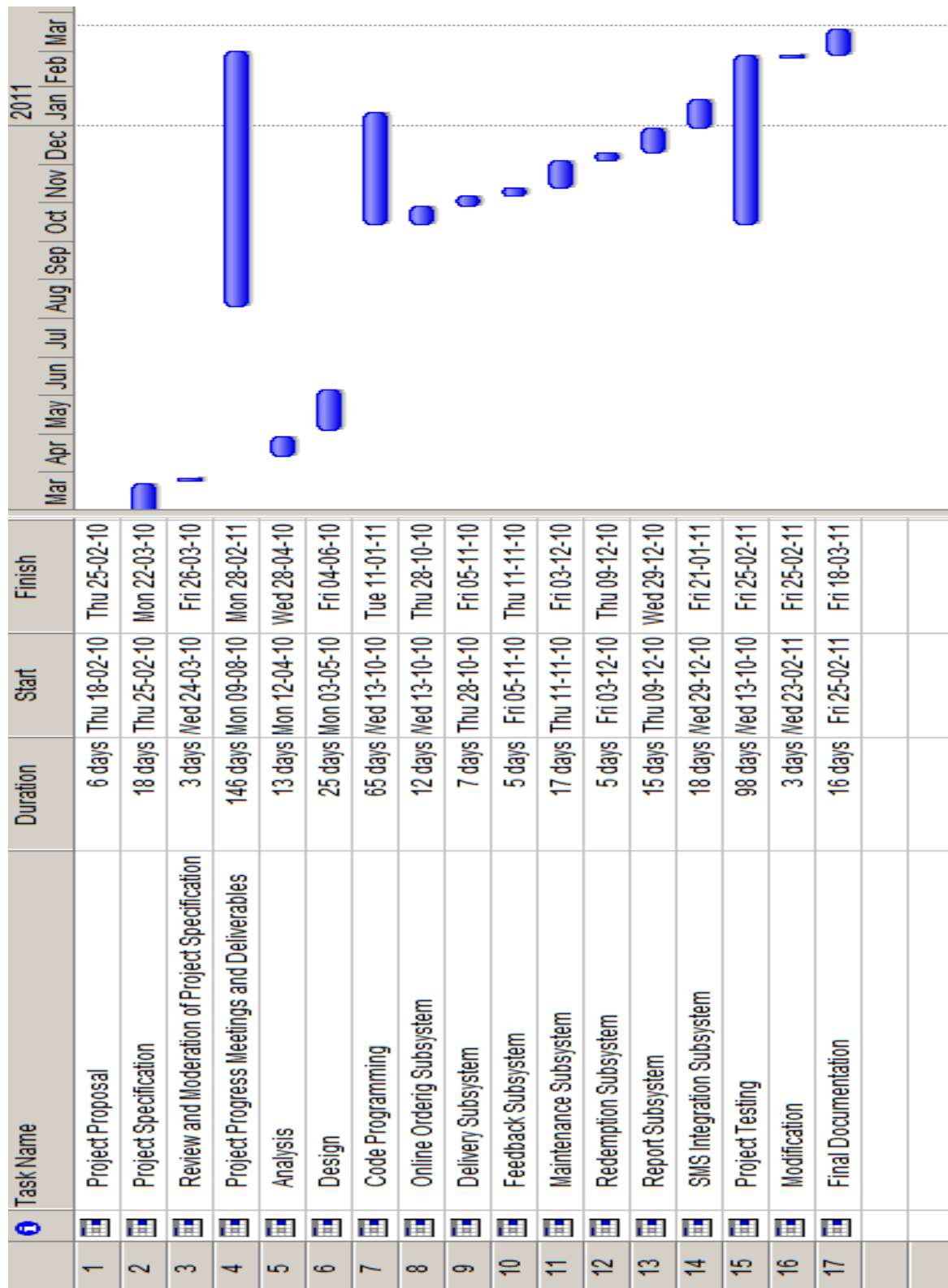


Figure 1.4 Project Schedule

1.9 Project Team

Tan Yoke Yen	Wong Xiao Yen
Online Ordering Module Online Customer feedback/Survey Module Delivery Module SMS Integration Module Redemption Module	Online Reservation Module Online Payment Module Reservation Module Platform Design Module
Maintenance Module 1. Meal Category Maintenance 2. Meal Maintenance	Maintenance Module 1. Member Maintenance 2. Staff Maintenance 3. Table Maintenance
Report Module 1. Monthly Sales Report 2. Top 5 Monthly Report 3. Feedback Report 4. Redemption Report 5. Rating Report	Report Module 1. Annual Sales Report 2. Daily Member Payment Report 3. Daily Reservation Report

1.10 Outline of approach/Methodology Used

The methodology that I used is SDLC. The systems development life cycle (SDLC) is a conceptual model used in project management that describes the stages involved in an information system development project, from an initial feasibility study through maintenance of the completed application. The common development phases in SDLC are planning, analysis, implementation, deployment and maintenance. SDLC tries to achieve high quality system that meets or exceeds the requirements. There are many system development methods known today, but most of them basically are extended from some main methodologies which are Structured Design, RAD (Rapid Application Development), and Object-oriented Analysis and Design. (Wiras Adi, 2009)

SDLC methodology follows these steps: (Marios Alexandrou, 2011)

1. The new system requirements are defined including addressing any deficiencies in the existing system with specific proposals for improvement.
2. The proposed system is designed. Plans are created detailing the hardware, operating systems, programming, and security issues.
3. The new system is developed. The new components and programs must be obtained and installed. Staff must be trained in its use, and all aspects of performance must be tested. If necessary, adjustments must be made at this stage.
4. The system is put into use. The new system can phased in, according to application or location, and the old system gradually replaced. In some cases, it may be more cost-effective to shut down the old system and implement the new system all at once.
5. Once the new system is up and running for a while, it should be exhaustively evaluated. Maintenance must be kept up rigorously at all times. Staff should be kept up-to-date concerning the latest modifications and procedures.

1.11 Summary

Basically, this chapter is used to summarize the initial processes of developing the system, Company background is stated the company profile. Project objectives usually describe the goals or missions of the company to provide better services to customers. The project scope is being developed to describe the function that required in a system. Whereas the project schedule (Gantt chart) is needed to state the time line for all the task and follow it in order to complete the system on time. For the project team is state out the task that do by the members. Development and operation environment is required to ensure the final system can be develop in a manner way and operate smoothly after being implemented.

There are some problems being faced during completing this chapter such as the way of dividing the jobs among different members fairly. By the way, project time lines also need to consider because the time being utilized in different task must be relevant. So, Gantt chart had been used to solve this problem and it can state all the time line clearly, so that project members can easily know how to manage their time correctly.

Chapter 2

Requirements Analysis

Requirements Analysis

2.1 Introduction

In this chapter, it will describe the system requirements specification which included functional requirements and non-functional requirements, UML Diagrams such as Use Case Diagrams, Activity Diagrams and Sequence Diagrams. It will also describe the problems or limitations of the current systems. The requirements of new information system are need to be finding out. The user requirements can be captured using various fact finding techniques and each of them has advantages and disadvantages.

2.2 Fact Finding

Basically there are many fact finding techniques that are used by system analyst to investigate requirements. In this stage, the functioning of the system is to be understood by the system analyst to design the proposed system. The analyst needs to fully understand the current system. Every technique has its own strengths and weaknesses.

2.2.1 Interviews

Analysts can use interviews to collect information about the current system from the potential users. There can be several objectives to using interviewing, such as finding out facts, verifying facts, clarifying facts, generating enthusiasm, getting the end user involved, identifying requirements, and gathering ideas and opinions. Here the analysts discover the areas of misunderstanding, unrealistic exception and descriptions of activities and problems along with resistance to the new proposed system.

2.2.2 Research

A useful fact-find technique is to research the application and problem. Computer trade journals, reference books, and the internet are good sources of information. So that, I have done a research from other website like pizza.com.my or mcD.com.my. From that, I had got an idea about the process and design of the system.

2.2.3 Observation

Observation is one of the most effective fact-finding techniques for understanding a system. With this technique, it is possible to either participate in or watch a person perform activities to learn about the system. This technique is often used when the validity of data collected through other method is in question or when the complexity of certain aspects of the system prevents a clear explanation by the end users.

2.3 Problems faced by Current Systems

The current system that we used is offline system to keep track all the transaction. There have some limitation of the current system, such like:

Service Quality Decrease

All the delivery services needed to go through by phone call. When customers make order, staff used the window application system to take down the orders. Customer just can make order when they walk in or call, they cannot make order anytime as they like. The associated benefits will gradually be reflected in our customer services, information management and quality control arenas. Since all the reservation is done in manual way, so the customers have to queue up or call in to make reservation. For example, the staffs need to figure out whether the particular customer is member, fill in customer data, check available room and time manually. The effect of bad services quality will decrease the company profit.

Costly and Time Consuming

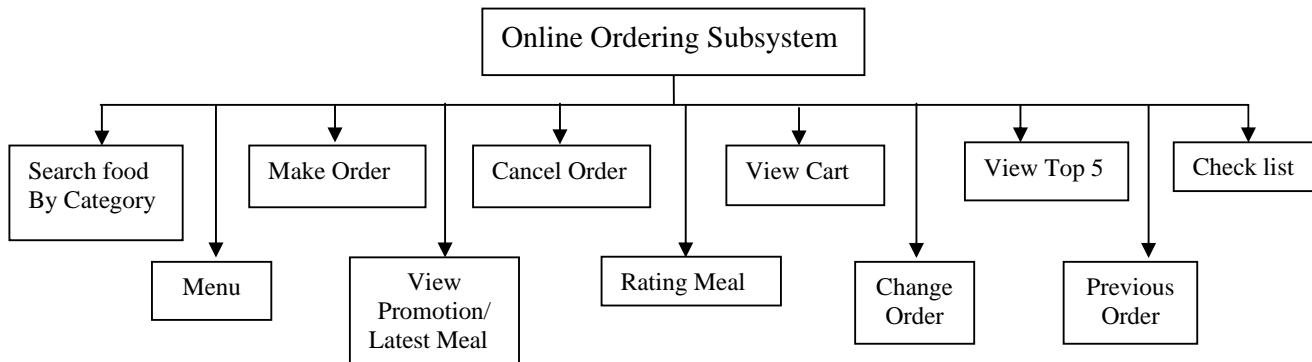
Customers needed to call to restaurant to make order, delivery or reservation. It was costly in call charge while staff takes down the information of order or delivery details. Besides that, it was time consuming to go through the calling process. Otherwise, customers needed to walk in to the restaurant to make order.

Inconveniency and Inflexibility

The current system cannot be used to make order at anytime and anywhere. It was not a flexible system to allow customers to make reservation or reserve meals through online. In addition, it cannot used to get feedback from customer via internet.

2.4 Functional Requirements

2.4.1 Online Ordering Subsystem



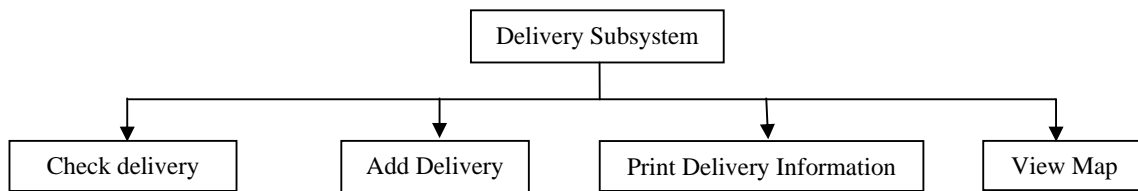
Feature

This subsystem is used by customers or staffs for ordering purpose through online. This order just can make while the distance of delivery is not more than 10km from our restaurant/coverage area.

- **View menu.** There has a list of menu to allow customer to view and choose their preference meal. The menu is show in the data list view that displays meal picture, name, description, and price of meals. It allow the customers to select the quantity and click add button to add the meal into cart.
- **Search.** Customers can search for any foods and beverage based by food categories. The search result will display the meal details such as name, price, and description of each searching meal.
- **Make order.** After select the quantity of meal then make the order, the order will add to the cart.
- **View Cart.** After make order, customers go to order list to check their order, and then make confirm or submit it. Customers also can continue to order before they make confirmation. If customers choose for delivery, they may need to fill in the delivery information. Else they should make the payment either by cash or credit card. If customers pay by credit card, they should pay at least 70% of the total amount. They can print the receipt when they make payment. We will not return back the deposit while the customer wants to cancel the order. It also allows customers to make new order by click order, and then it will add to the order cart.

- **Delete order.** Customers can delete the order from order list/cart by check the checkbox and click confirm button before they confirm the order.
- **Cancel order.** Customers enable cancel the order in order list/cart before they confirm the order.
- **Send SMS.** After customers confirm and send the order, minimum time required for delivery/pick of online is half an hour. After the food is finish cooked/ well prepare, staff will send SMS to customers and tell them it is available and prepare to pick up /delivery.
- **View top 5.** Customers can view the top five meals daily. So that, the new customers can know our well-known meal or customer favorite meal, they can have a chance to taste it. It also allows staff to get more prepare on the ingredients.
- **View Promotion.** Customers can view the special promotion or latest meals that allow customers to have more choices to make order.
- **View Previous Order.** This is use for customers to check back the previous order. Through these preferences or favorite history, we will send or introduce new meal that they prefer to them. It will show the total amount, total charge, tax for the previous order by selected month.
- **Change order.** Basically, the system is not allow to change the order after send/confirm the order. But for the special event occasion, it is allow to customer to change the order before one week of the event. It is for convenience the restaurant to prepare the ingredients.
- **Check List.** This check list is use by staffs to check whether the food is well prepared. It will show the all the order details for kitchen for preparing the meal. After the meal is cooked, chef will click the complete button for update the order status. While the member is calling and ask about their food done or not, then the staff can use it to check it. If the food is done, it will not show in the check list. After Complete, it is show in the delivery list and ready to deliver.
- **Rating Meal.** Members allow to rate their favorite meal by click the rating star.

2.4.2 Delivery Subsystem

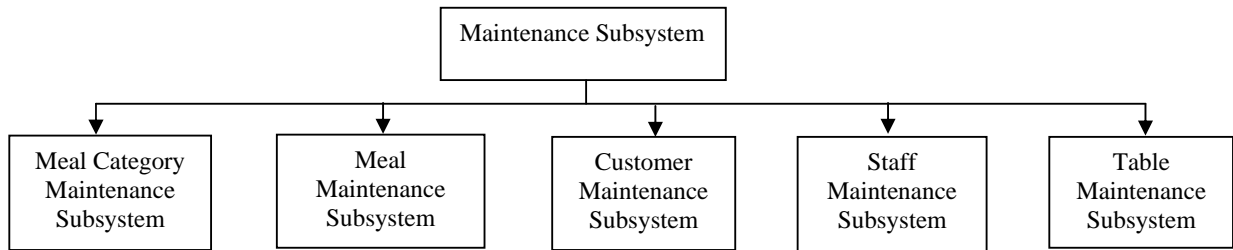


Feature

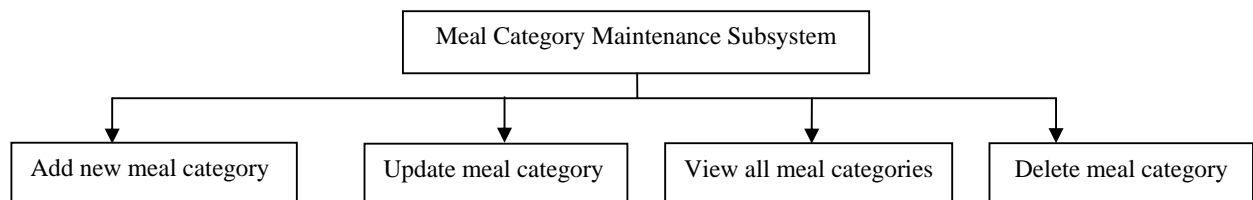
Staffs are allowed to check the delivery schedule, meal order and the location of the deliver destination before they deliver the meal.

- **Check delivery.** The staffs can check the delivery details like when need to deliver the foods, who make the order, the address, time and so on. So that, it allow staff make arrangement of time. On the screen, it shows the name, address, phone number, food order detail, total amount of the order. Before the staff delivery the food, the staff should check all the food and prepare for the money.
- **Add delivery.** Customers can choose either delivery or pick-up the order after they confirm the order. If they choose delivery, they need to enter the address, phone number and name for delivery purpose. After the meal is well prepared, staffs can use the system to send SMS to inform customer that the meal is ready to pick up or delivery.
- **Print delivery information.** If there have many meal need to deliver, staff can print out the delivery information which show the customer address, name, contact number, total amount, balance of ordering, so that staff no need to write down the details themselves or worry forget about the address.
- **View Map.** If the staff does not know about the delivery location, they can check for the map. Staff can check the location by entering customer zip code or address, and then the system will show/display the searching address. He also can zoom into the map to view it clearly like Google Map.

2.4.3 Maintenance Subsystem



2.4.3.1 Meal Category Maintenance Subsystem

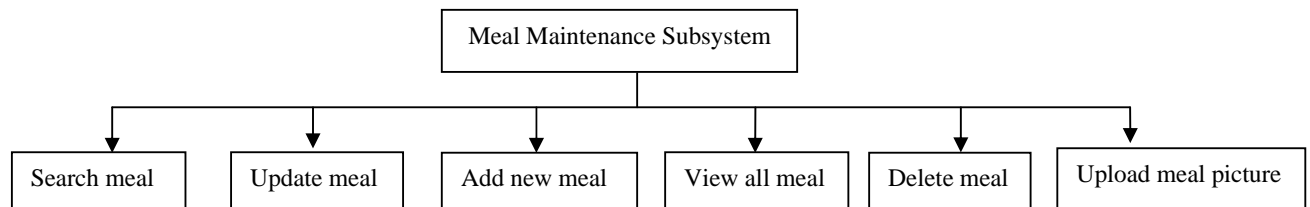


Feature

This module can use to add, edit, and delete the meal category.

- **View all meal categories.** Admin can view all the meal category.
- **Update meal category.** Admin also enable to update or edit the meal category.
- **Add new meal category.** When the restaurant has created or produce a new meal category, admin may need to add the new meal category, after that add the meal information.
- **Delete meal category.** If the meal is not in good sales, and the restaurant decide to stop selling the meal, admin can delete that meal category.

2.4.3.2 Meal Maintenance Subsystem

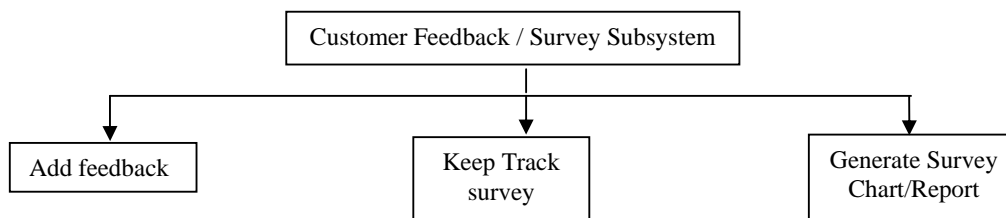


Feature

This subsystem can use to upload photo, search, add, edit, and delete the information of the meal.

- **Search meal.** Admin can search the meal by category and view, edit or delete its detail.
- **View all meal.** Admin enable to view all the meal whenever they need to know or check the information of the meal.
- **Update meal.** Admin also can update or edit the meal details such like the price of the meal or the descriptions of it.
- **Add new meal.** When the restaurant has created or produce a new meal, admin may need to add the new meal information into the database for maintenance.
- **Delete meal.** If the meal is not in good sales, and the restaurant decide to stop selling the meal, admin can delete that meal information directly.
- **Upload meal picture.** Besides, admin can also upload the meal picture when add the new meal or change the picture of the meal. After that, the picture will show on the screen of menu, it is look nice and attractive.

2.4.4 Customer Feedback /Survey Subsystem

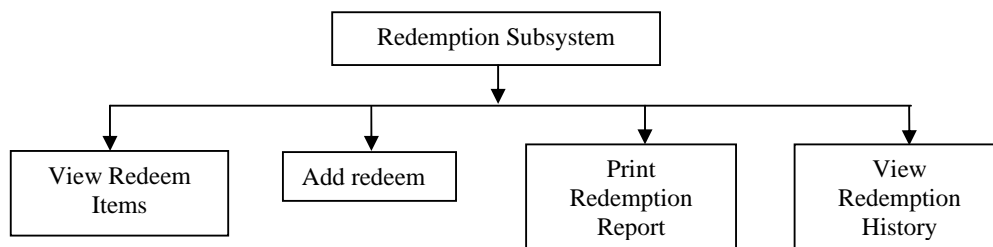


Feature

Customer feedbacks are crucial in improving restaurant service. It is important that you know what customers think about your services, our menu, your food quality and hospitality. Our websites include customer survey forms that let them express their opinions on Quality of Service (QoS).

- **Add feedback.** This form can use by customers to give us the feedback for either the services, quality of food, facility, hospitality or give the recommendation for us to make improvement and increase customer satisfaction.
- **Keep track survey.** Then, we may keep track all the survey from our customer by analyst it, discuss, and make change or keep improve on it.
- **Generate survey chart/Feedback Report.** In addition, they can generate the survey chart. From the chart, we can view the average of values and criteria of the feedback. This can use by the restaurant to make improvement to their services, menu, food quality or hospitality.

2.4.5 Redemption Subsystem

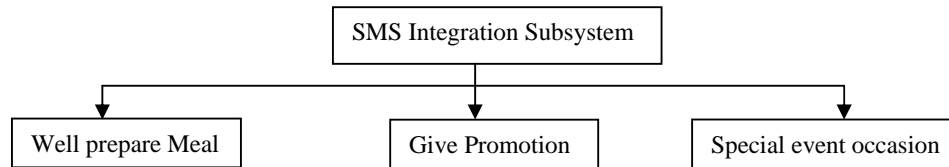


Feature

Redemption is giving our loyalty customers a return gift. They can redeem our exquisite items with their points; more patronize our restaurant more points are collected.

- **View Redeem Items.** Staff be able to view the redeem items and require point for redemption when the member want to make redemption.
- **Add Redeem.** When members want to make redemption, staffs can add redeem by select the quantity and click for the redeem button. If the member's point is not enough, the system will display the message. After redeem, it will update the member's point.
- **Print Redemption Report.** Staffs can view and print the redemption report for that day. In order to make sure the stock of the redeem item is sufficient.
- **View Redemption History.** Members can view for the redemption history which displays the items that they have redeemed before.

2.4.6 SMS Integration Subsystem

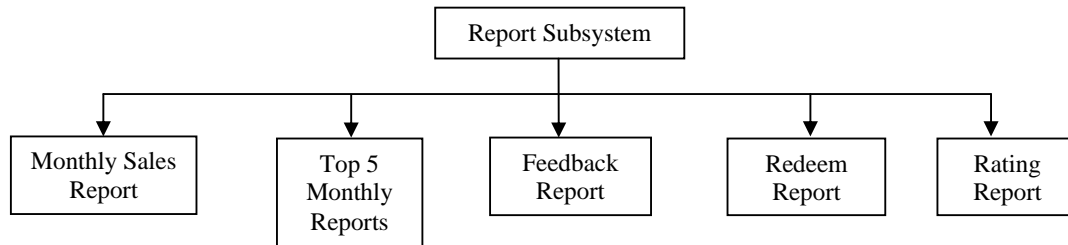


Feature

The system is connected or integrated with the mobile phone which sends SMS to customers when delivery, promotion or special event. It is use to improve our services, sales and customer satisfaction.

- **Meal well prepares.** After the meal is ready to pick up or delivery, staff will use the system to send SMS to inform customers that the meal is well prepare and will reach around what time.
- **Promotion.** Other than that, our restaurant shall inform customers for any promotion or special discount by the SMS integration feature.
- **Special event occasion.** For any special event like anniversary or members day, we will send SMS to customers and invite them to come along and participate in our event. We shall have some activities like play games, free gift or lucky draw to thanks all the loyalty member supporting us.

2.4.7 Report Subsystem



Feature

The report subsystem is use by admin or manager to view, analyst and making decision purpose.

- **Top 5 sales Report** - This report is created for marketing manager, purchasing manager, kitchen manager. They can use this report to determine what customers prefer, then aim it and produce more at the period of time. Staff can prepare more for the ingredients by referring to the top 5 report.
- **Monthly Summary Sales Report** - The report can be use by financial manager and marketing manager. This report can be used for determining which time/month is earn less, and which time can earn more, so we can do some promotion or give discount to the customer. For example, school holiday, public holiday, festival, etc has higher sales, so chef should prepare for sufficient ingredients. Financial manager can directly record the total profit and cost into account, and think idea to improve our sales.
- **Feedback Report** – This report is created for our restaurant to improve meal and services. It has show evaluation average values for each criterion like meal, customer services, menu, price and ambiance. From this, we can collect the comment from customers to enhance the better quality of services.
- **Redemption Report** – The report will show the redeem items, quantity, member name, and balance point for admin/staff to keep track the stock of the redeem items. Besides, members can view back the items that they have redeemed before (history redemption).
- **Rating Report** - This report is showing the rating value for each meal that rate by the members. Kitchen manager can view this report to improve the cooking style of meal.

2.5 Non-functional Requirements

The following are the non-functional requirement of an online restaurant management system.

1. **Consistency** – The online restaurant management system provide consistency user interface design to the end-user. The designs of the screen are standardize and consistent that make the end-user feel comfortable to use it.
2. **Convenience** – The system may give convenience to the end-user to make order via online platform. Customers no need to go out or phone call to make order from the restaurant.
3. **Availability** – The system provide the end-user to login the system to browse or make order on 24 hours.
4. **Usability** – The online ordering system is ready to use system, the end-user may feel easy to use the system.
5. **Security** – The restaurant system provide the password security access control to avoid unauthorized user to login to the system. The system also authenticates the staff level to access to some of the admin part.
6. **Reliability** – The online restaurant management system provide the effective method to maintain the back-end of the system such as generate report. All of the orders are manage by this system effectively.

2.6 Use Case Diagrams

Overview Use Case Diagram

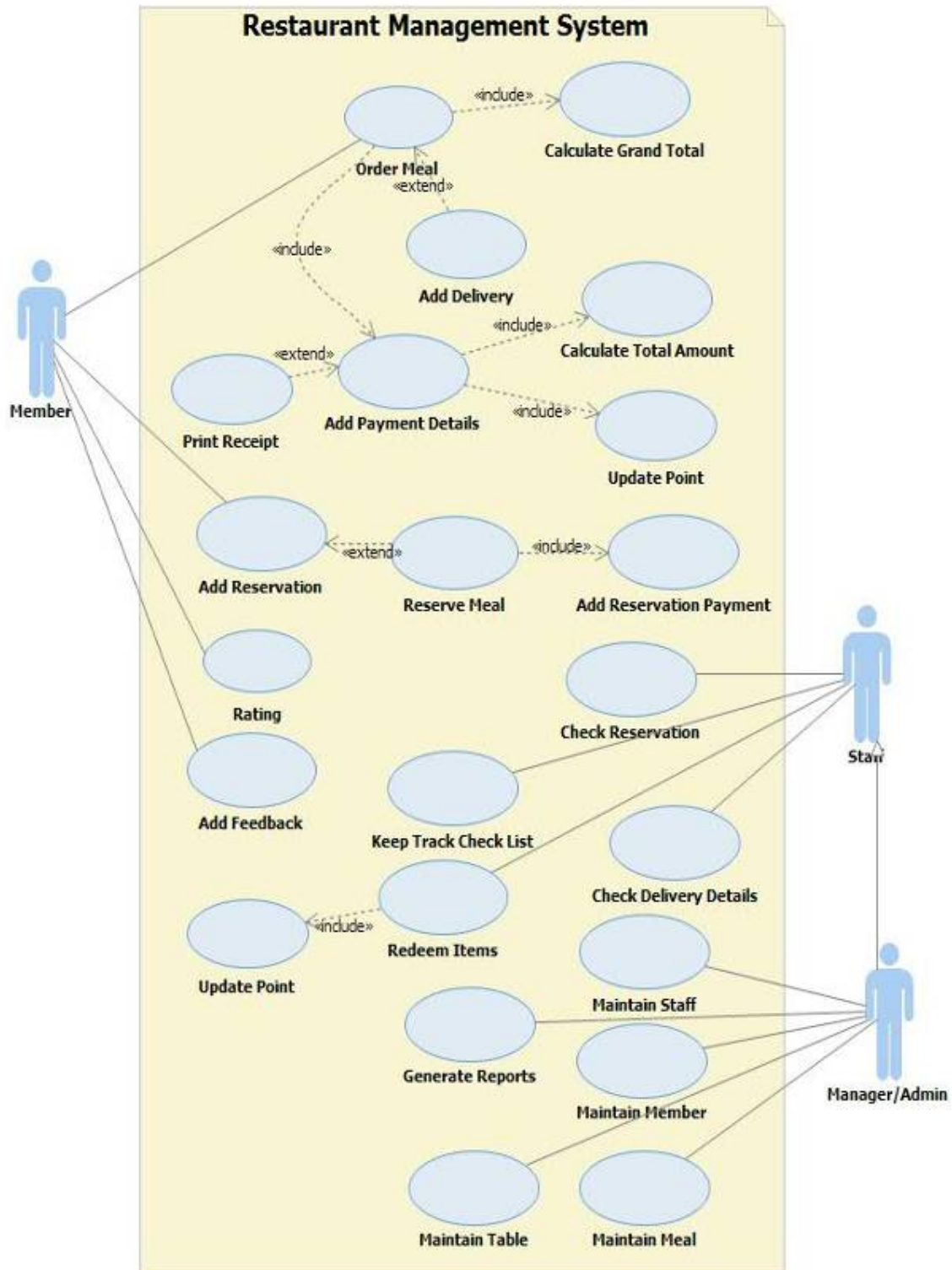


Figure 2.1: Overview of Use Case Diagram

Use Case for Order Meals

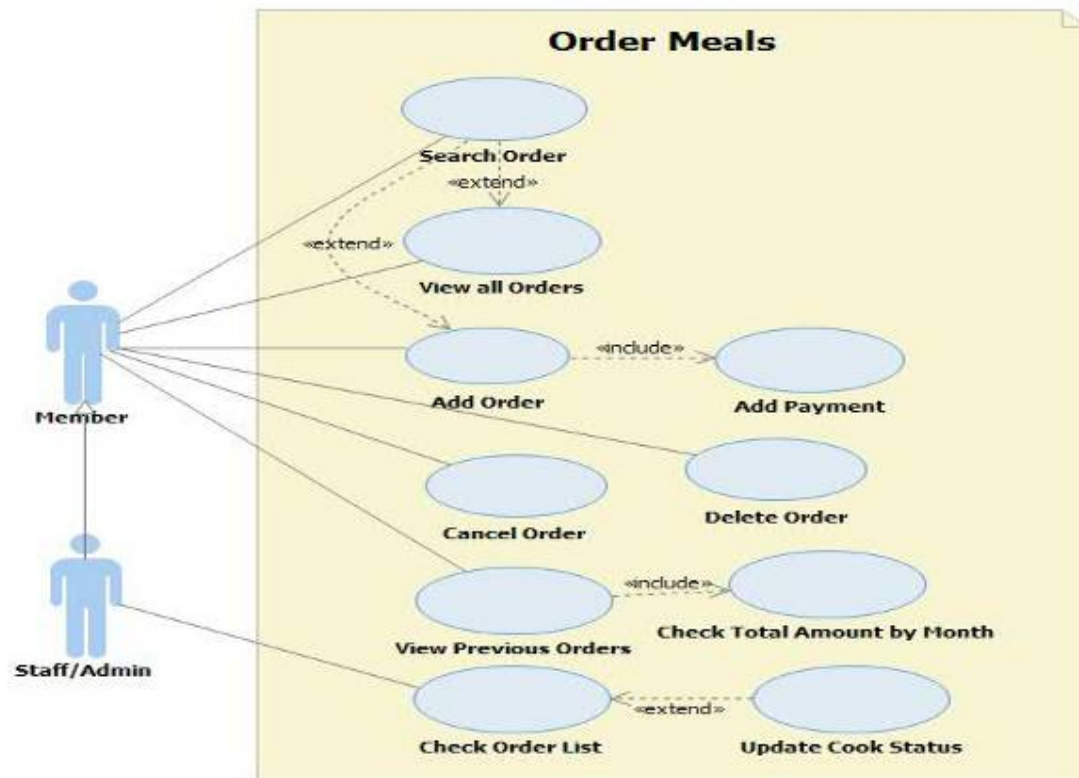


Figure 2.2: Order Meals Use Case

Use Case for Delivery

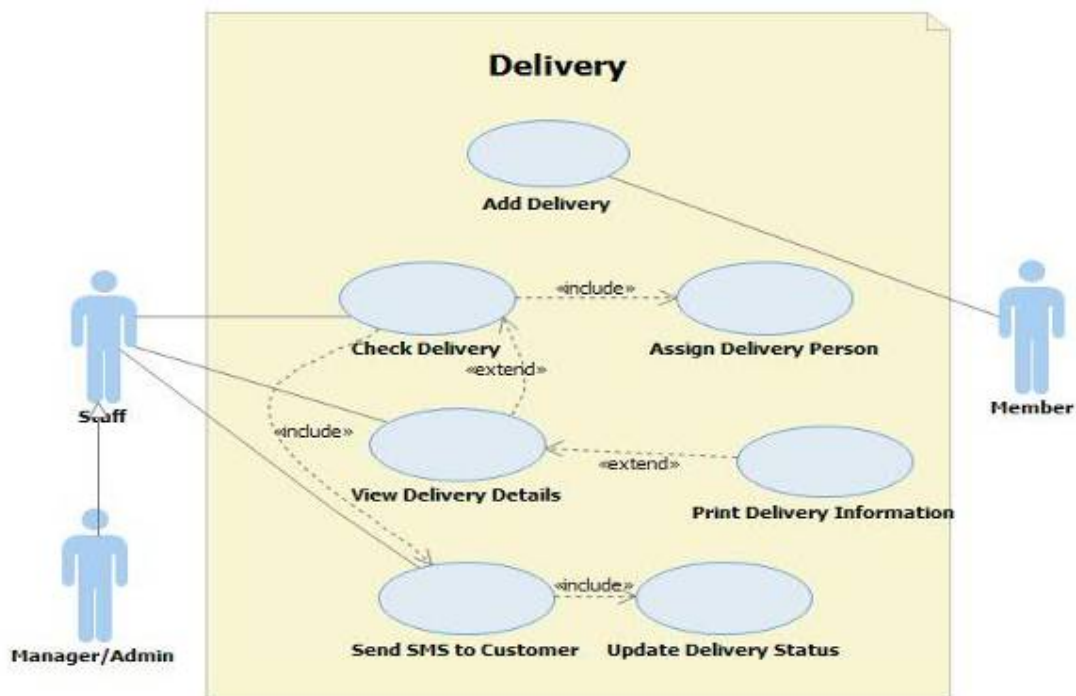
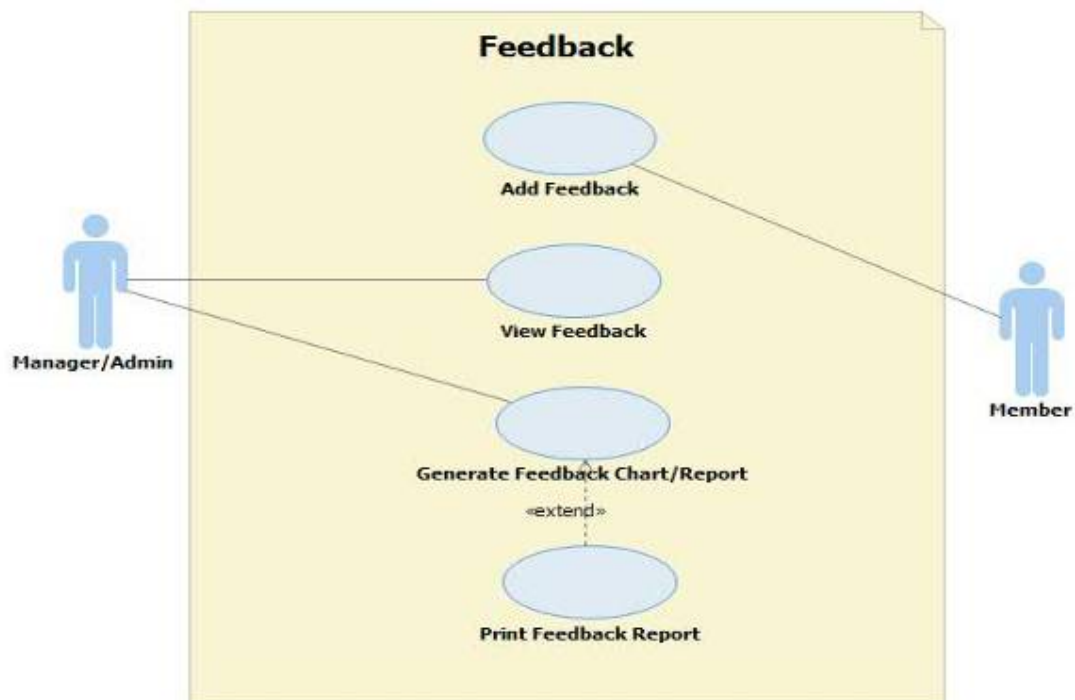
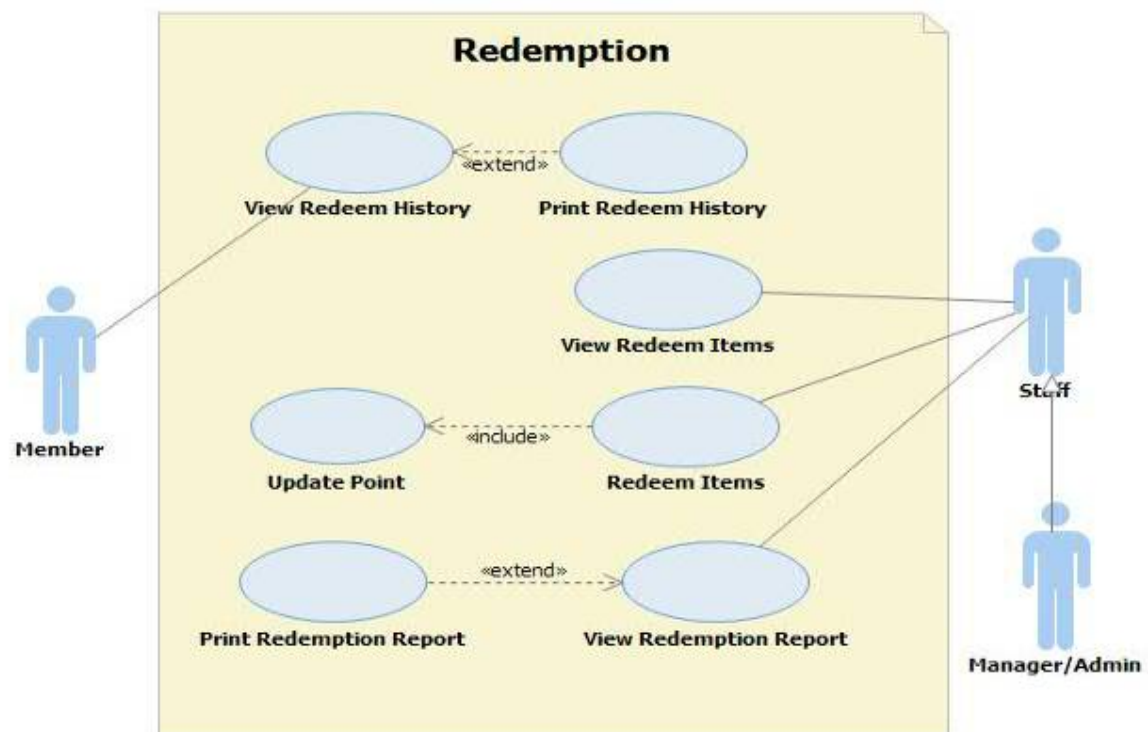
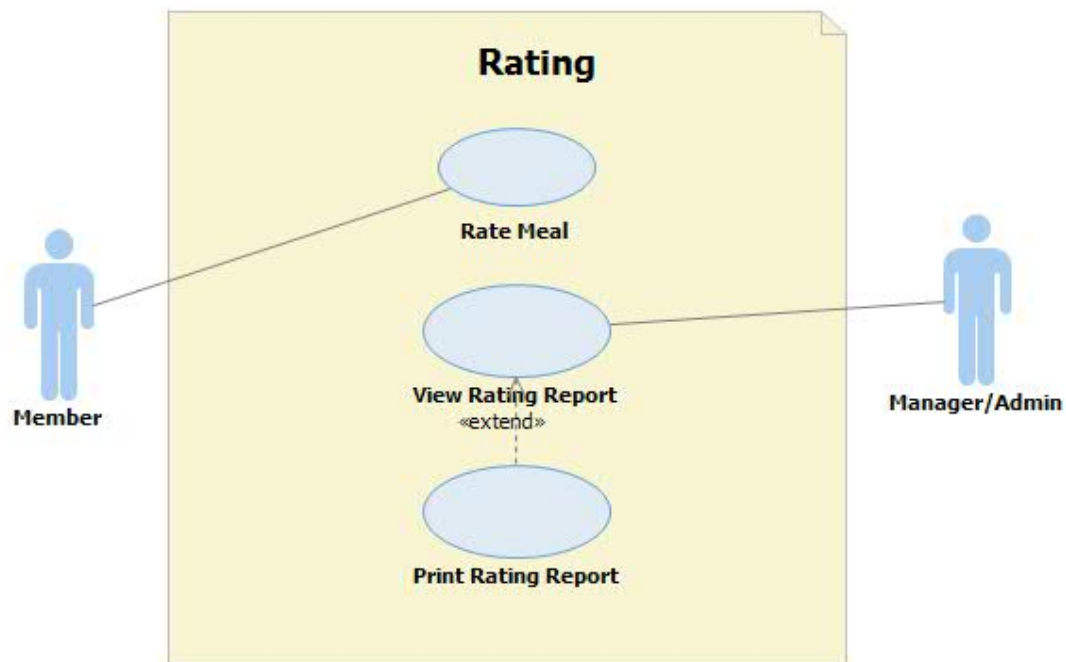
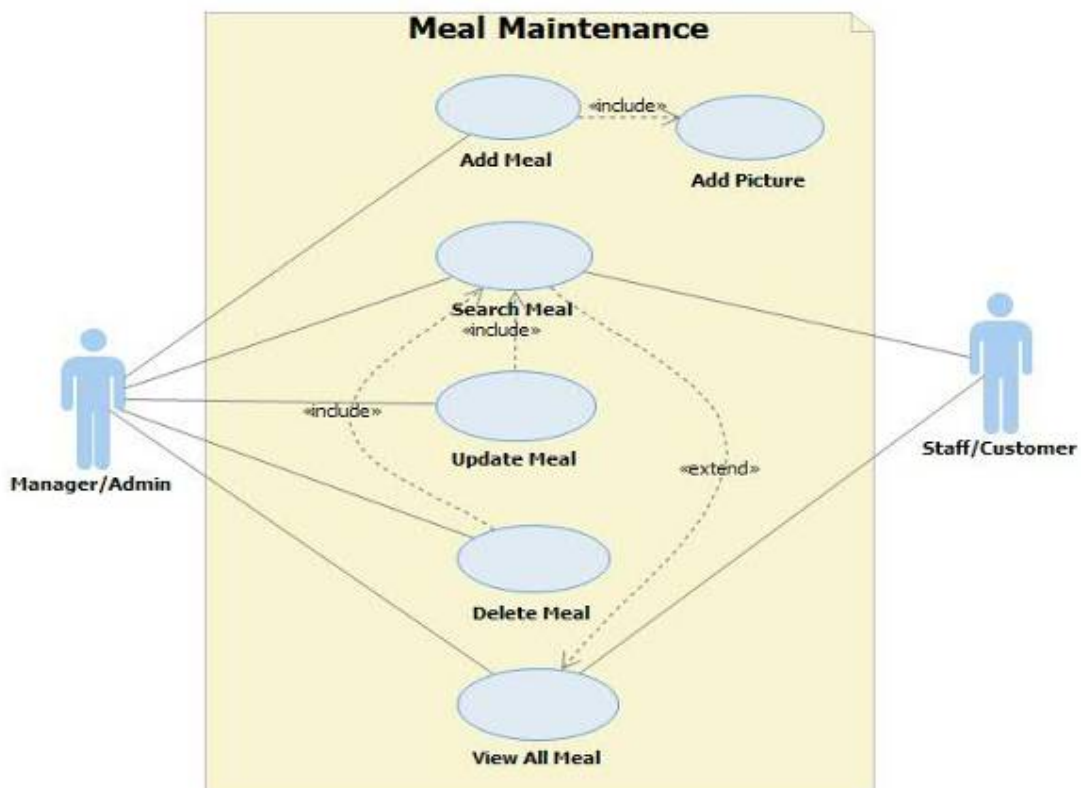


Figure 2.3: Delivery Use Case

Use Case for Feedback**Figure 2.4: Feedback Use Case****Use Case for Redemption****Figure 2.5: Redemption Use Case**

Use Case for Rating**Figure 2.6: Rating Use Case****Use Case for Meal Maintenance****Figure 2.7: Meal Maintenance Use Case**

Use Case for Generate Report

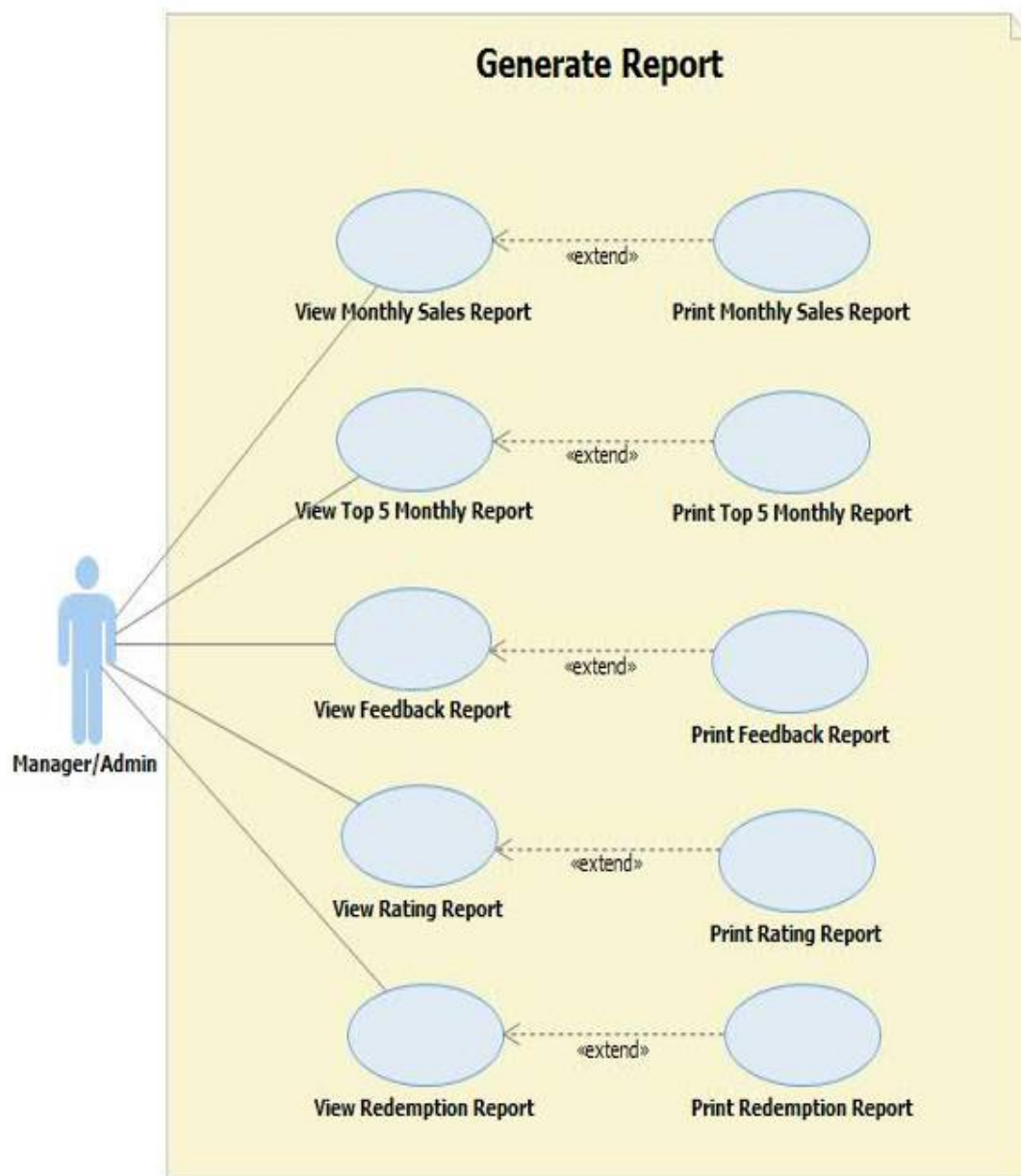


Figure 2.8: Generate Report Use Case

2.7 Use Case Description

2.7.1 Order Meals

Use Case Description for Add Order

Use Case Name: Add Order

Brief Description: This use case enable Members to add/make order

Actor: Member

Main Flow:

Actor Action	System Response
1. Log in 4. Select Meal Category 6. Select meal quantity 7. Press “Add”	2. Verify login 3. Display Main Page 5. Display Meal of the category 8. Add Meal into Order List

Alternative Flows:

A-1 Step 2: If Member ID/Password Invalid

-System prompt “Invalid ID/Password” message.

A-2 Step 7: If successful added meal.

-System display “Successful Added” message.

Use Case Description for View all Orders

Use Case Name: View all Orders (Order List)

Brief Description: This use case enable Members to view all the meal orders in order list.

Actor: Member

Main Flow:

Actor Action	System Response
1. Log in 4. Add Orders 5. Select “Order List” 7. View all orders	2. Verify login 3. Display Main Page 6. Display all meal orders

Alternative Flows:

A-1 Step 2: If Member ID/Password Invalid

-System prompt “Invalid ID/Password” message.

Use Case Description for Delete Orders**Use Case Name:** Delete Order**Brief Description:** This use case enable Members to delete orders from order list.**Actor:** Member**Main Flow:**

Actor Action	System Response
1. Log in	2. Verify login
4. Select Order/Add Order	3. Display Main Page
6. Select "Order List" (View all Orders)	5. Add selected meal to Order List
8. Check the check box to delete	7. Display all member orders
9. Press "Confirm"	10. Delete the checked orders
	11. Update Database

Alternative Flows:

A-1 Step 2: If Member ID/Password Invalid

-System prompt "Invalid ID/Password" message.

Use Case Description for Cancel Orders**Use Case Name:** Cancel Orders**Brief Description:** This use case enable Members to cancel the orders.**Actor:** Member**Main Flow:**

Actor Action	System Response
1. Log in	2. Verify login
4. Select Order/Add Order	3. Display Main Page
6. Select "Order List" (View all Orders)	5. Add selected meal to Order List
8. Press "Cancel Order"	7. Display all orders
	9. Delete all orders
	10. Update Database

Alternative Flows:

A-1 Step 2: If Member ID/Password Invalid

-System prompt "Invalid ID/Password" message.

A-2 Step 8: If member press "Cancel order"

-System prompt delete confirmation message.

Use Case Description for Check Order List**Use Case Name:** Check Order List**Brief Description:** This use case enable Staff to check the orders and update the cook status when the meal is cooked.**Actor:** Staff/Admin**Main Flow:**

Actor Action	System Response
1. Log in 4. Select "Check List" 6. Select "Order" 8. Press "Complete"	2. Verify login 3. Display Main Page 5. Display Order Information 7. Display Meal Order Details 9. Update Order Status in Database

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt "Invalid ID/Password" message.

A-2 Step 8: If not press "Complete"

-System will not update the database.

Use Case Description for View Previous Orders**Use Case Name:** View Previous Orders**Brief Description:** This use case enable Members to view previous orders**Actor:** Member**Main Flow:**

Actor Action	System Response
1. Log in 4. Select "Previous Order"	2. Verify login 3. Display Main Page 5. Display Previous Order Details, Total Charge, and Total Amount by Month.

Alternative Flows:

A-1 Step 2: If Member ID/Password Invalid

-System prompt "Invalid ID/Password" message.

2.7.2 Delivery

Use Case Description for Add Delivery

Use Case Name: Add Delivery

Brief Description: This use case enable Members to add delivery.

Actor: Member

Main Flow:

Actor Action	System Response
1. Log in 4. Select Order 5. Choose Delivery 6. Enter Delivery Information 7. Press "Send"	2. Verify login 3. Display Main Page 8. Verify Delivery Information 9. Update Delivery Database

Alternative Flows:

A-1 Step 2: If Member ID/Password Invalid

-System prompt "Invalid ID/Password" message.

A-2 Step 5: If member not choose delivery

-System prompts "Please select delivery or take away".

-System would not update delivery database.

Use Case Description for Check Delivery

Use Case Name: Check Delivery

Brief Description: This use case enable staff to check delivery.

Actor: Staff

Main Flow:

Actor Action	System Response
1. Log in 4. Select "Check Delivery" 6. Select Delivery Person 7. Press "Delivery" 9. Enter Sending SMS Details 10. Press "Send"	2. Verify login 3. Display Main Page 5. Display Delivery Order Details 8. Display Sending SMS Form 11. Verify Delivery SMS Details 12. Send Delivery SMS to Customers 13. Update Delivery Status in Database

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt "Invalid ID/Password" message.

A-2 Step 6: If not select delivery person

-System not allow user to click delivery button.

A-3 Step 11: If SMS Delivery Information invalid

-System display “Invalid data” message.

Use Case Description for Print Delivery Information/Report

Use Case Name: Print Delivery Report

Brief Description: This use case enable Staff to print delivery information/report for reference.

Actor: Staff

Main Flow:

Actor Action	System Response
1. Log in 4. Select “Check Delivery” 6. Press “Print Delivery Information”	2. Verify login 3. Display Main Page 5. Display Delivery Order Details 7. Print Report

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt “Invalid ID/Password” message.

Use Case Description for View Map

Use Case Name: View Map

Brief Description: This use case enable Staff to view map to search deliver location.

Actor: Staff

Main Flow:

Actor Action	System Response
1. Log in 4. Select “View Map” 6. Enter Zip Code/Address	2. Verify login 3. Display Main Page 5. Display Google Map 7. Verify Address 8. Display Searching Location

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt “Invalid ID/Password” message.

A-2 Step 3: If Address Invalid

-System prompt “Invalid Address” message.

2.7.3 Feedback

Use Case Description for Feedback

Use Case Name: Add Feedback

Brief Description: This use case enables member to send feedback or give comments.

Actor: Member

Preconditioned: Member must login, just allow to provide feedback.

Main Flow:

Actor Action:	System Response
1. Click Feedback 3. Enter Feedback Details 4. Press “Send”	2. Display Feedback Form 5. Verify Feedback Information 6. Update Database

Alternative Flow:

A-1 Step 5: If the feedback Information Invalid

-System prompt “Invalid data” message.

Use Case Description for Generate Feedback Chart/Report

Use Case Name: Generate Feedback/Survey Chart

Brief Description: This use case enable Admin to generate feedback chart/report.

Actor: Admin

Main Flow:

Actor Action	System Response
1. Log in 4. Select “Feedback” 6. Press “Generate Chart” 8. Press “Print” and do analyst	2. Verify login 3. Display Main Page 5. Display Feedback Details 7. Display Feedback Chart/Report 9. Print Report

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt “Invalid ID/Password” message.

2.7.4 Rating

Use Case Description for Rate Meal

Use Case Name: Rate Meal

Brief Description: This use case enable members to rate the meals.

Actor: Member

Main Flow:

Actor Action	System Response
1. Log in 4. Select "Menu" 6. Select "Rating" 7. Press "Rate"	2. Verify login 3. Display Main Page 5.Display Menu/Meal Information 8. Verify Rate Values 9. Update Rating Values

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt "Invalid ID/Password" message.

A-2 Step 7: If press "Rate" without select rating values (star)

-System prompts "Please select rating" message.

2.7.5 Redemption

Use Case Description for View Redeem Items

Use Case Name: View Redeem Items

Brief Description: These use case enable staffs to view redeems items(items name, point require).

Actor: Staff

Main Flow:

Actor Action	System Response
1. Log in 4. Select "Redemption" 6. View Redeem Items.	2. Verify login 3. Display Main Page 5.Display Redeem Items

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt "Invalid ID/Password" message.

Use Case Description for Redeem Items**Use Case Name:** Redeem Items**Brief Description:** These use case enable staffs to redeem items.**Actor:** Staff**Main Flow:**

Actor Action	System Response
1. Log in 4. Select “Redemption” 6. Select items quantity. 7. Press “Redeem”	2. Verify login 3. Display Main Page 5. Display Redeem Items 8. Verify Member Points 9. Update Member Points

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt “Invalid ID/Password” message.

A-1 Step 8: If member points not enough.

-System display error message, and not update member points.

2.7.6 Meal Maintenance**Use Case Description for Add Meal****Use Case Name:** Add Meal**Brief Description:** This use case enable Admin to add new meal details.**Actor:** Admin**Main Flow:**

Actor Action	System Response
1. Log in 4. Select “Meal Maintenance” 6. Select Meal Category 8. Press “Add Meal” 10. Enter New Meal Information and add new meal picture 11. Press “Save”	2. Verify login 3. Display Main Page 5. Display Meal Information 7. Display Meal Details by Category 9. Display Add Meal Page 12. Verify New Meal Information 13. Update Meal Details in database

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt “Invalid ID/Password” message.

A-2 Step 12: If New Meal Information Invalid

-System prompt “Invalid Data” message.

Use Case Description for Update Meal**Use Case Name:** Update Meal**Brief Description:** This use case enable Admin to update meal details**Actor:** Admin**Main Flow:**

Actor Action	System Response
1. Log in	2. Verify login
4. Select “Meal Maintenance”	3. Display Main Page
6. Select/search by Meal Category	5.Display Meal Information
8. Select Meal for edit	7. Display Meal Details by Category
9. Click “Edit”	10. Display Edit Meal Page
11. Edit Meal information (eg: Price)	13. Verify Edit Meal Information
12. Press “Update”	14. Update Meal Details in database

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt “Invalid ID/Password” message.

A-2 Step 13: If Meal Information Invalid

-System prompt “Invalid data” message.

Use Case Description for Delete Meal**Use Case Name:** Delete Meal**Brief Description:** This use case enable Admin to delete meal**Actor:** Admin**Main Flow:**

Actor Action	System Response
1. Log in	2. Verify login
4. Select “Meal Maintenance”	3. Display Main Page
6. Select/search by Meal Category	5.Display Meal Information
8. Select Meal to delete	7. Display Meal Details by Category
10. Press “Delete”	9. Display Meal details to delete
12. Press “Confirm” option	11. Display Confirmation delete meal message
	13. Update Database

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt “Invalid ID/Password” message.

A-2 Step 12: If admin choose not confirm to delete meal

-System will not update the database.

2.7.7 Generate Reports

Use Case Description for Generate Report

Use Case Name: Generate Report

Brief Description: This use case enable Admin to generate report (Monthly Sales Report, Top 5 Report, Rating Report, Redemption Report and Feedback Report)

Actor: Admin

Main Flow:

Actor Action	System Response
1. Log in 4. Select Report Type (eg: Top 5, Monthly Sales Report) 6. Select Report Date Range 7. Press "Generate"	2. Verify login 3. Display Main Page 5. Display Report Page 8. Verify Date Range 9. Retrieve Report Information 10. Display Report Information

Alternative Flows:

A-1 Step 2: If Staff ID/Password Invalid

-System prompt "Invalid ID/Password" message.

A-2 Step 8: If the selected date range not valid

-System prompt "Invalid Selected Date" message

2.8 Activity Diagrams

2.8.1 Order Meals

Activity Diagram for Order Meals (Member)

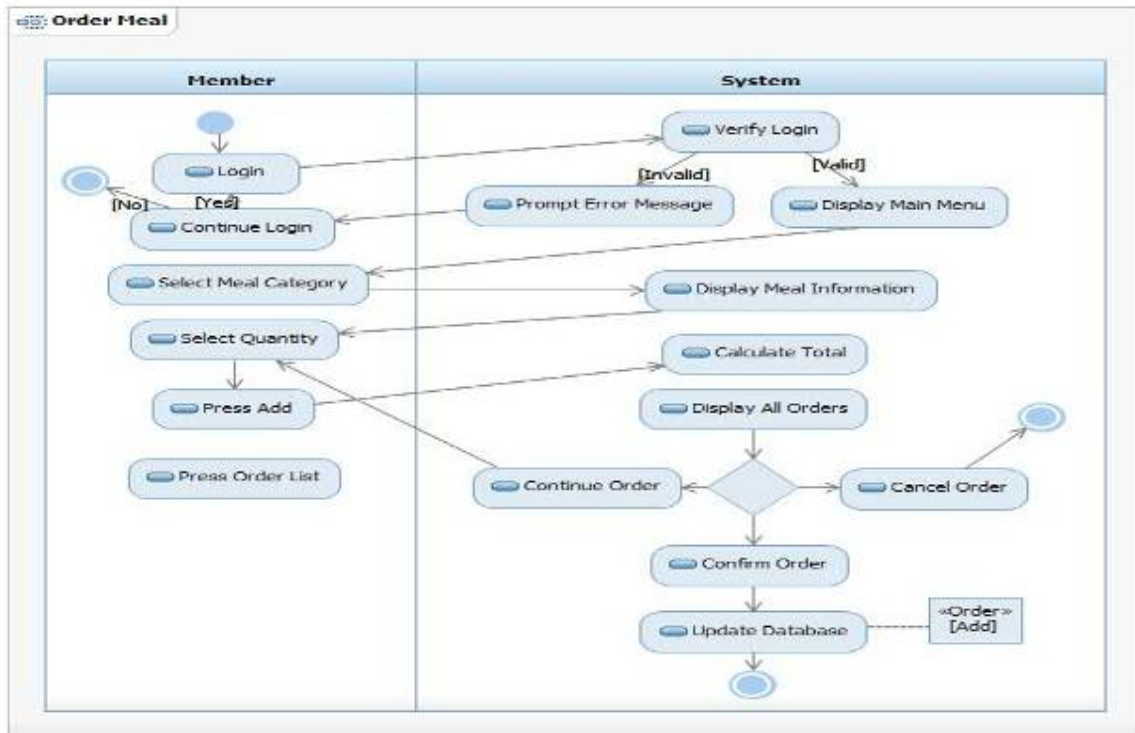


Figure 2.9: Order Meals Activity Diagram

Activity Diagram for Check Orders List (Staff)

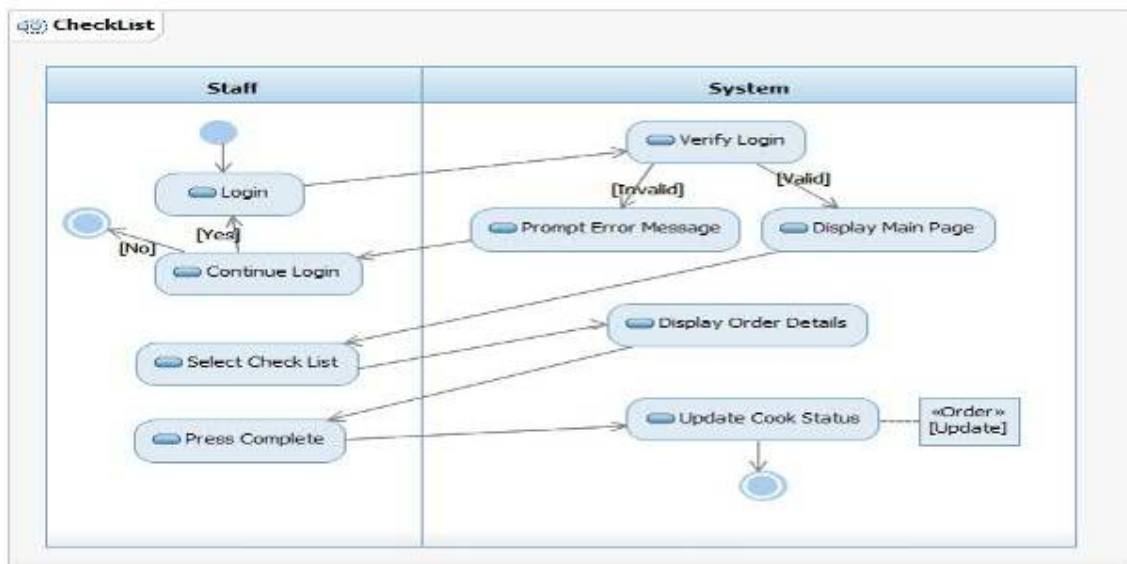


Figure 2.10: Check List Activity Diagram

2.8.2 Delivery

Activity Diagram for Delivery (Member)

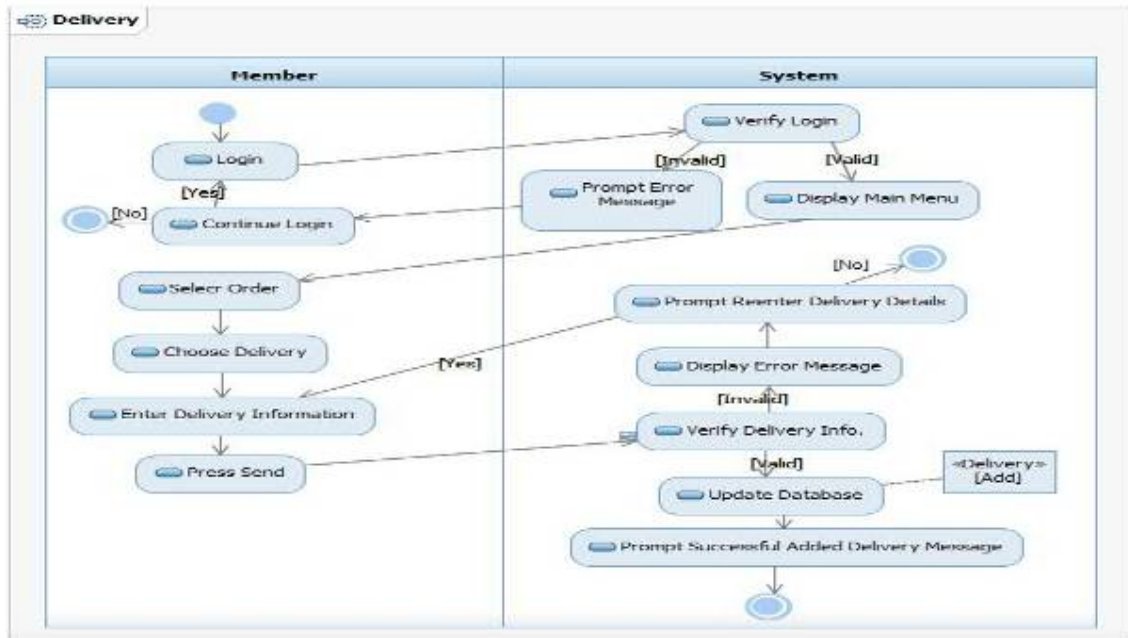


Figure 2.11: Delivery Activity Diagram

Activity Diagram for Delivery (Staff)

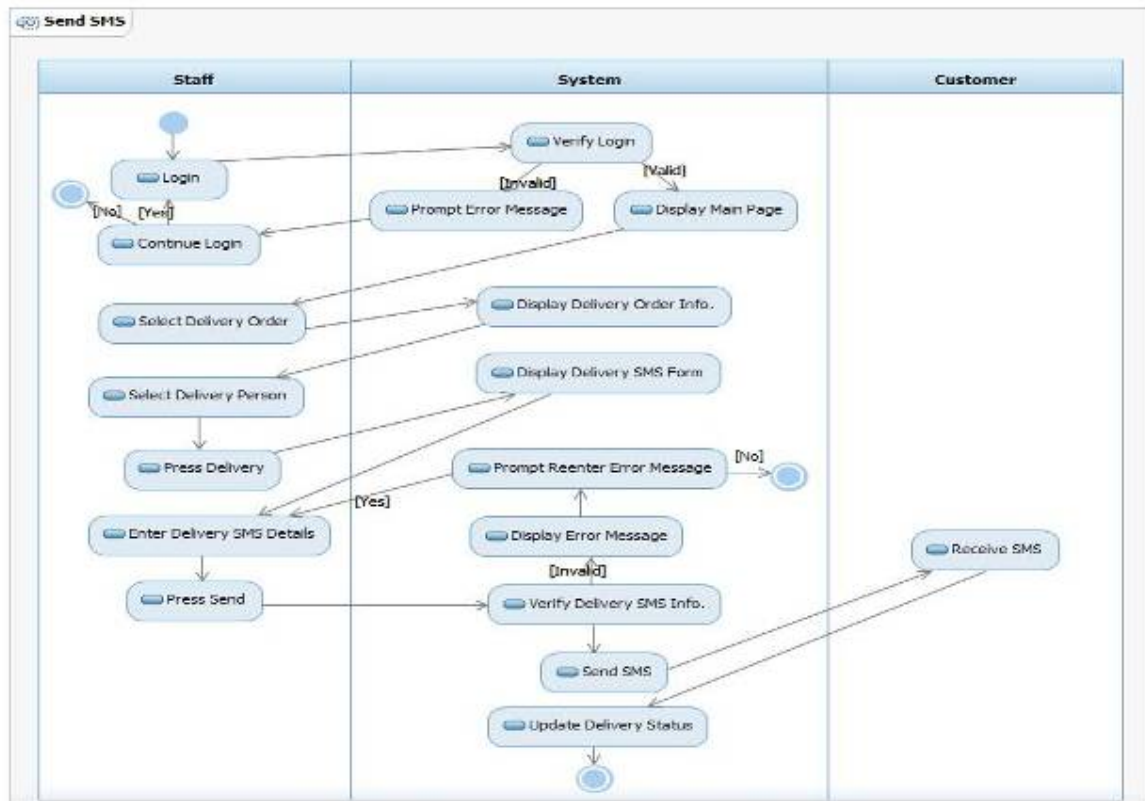
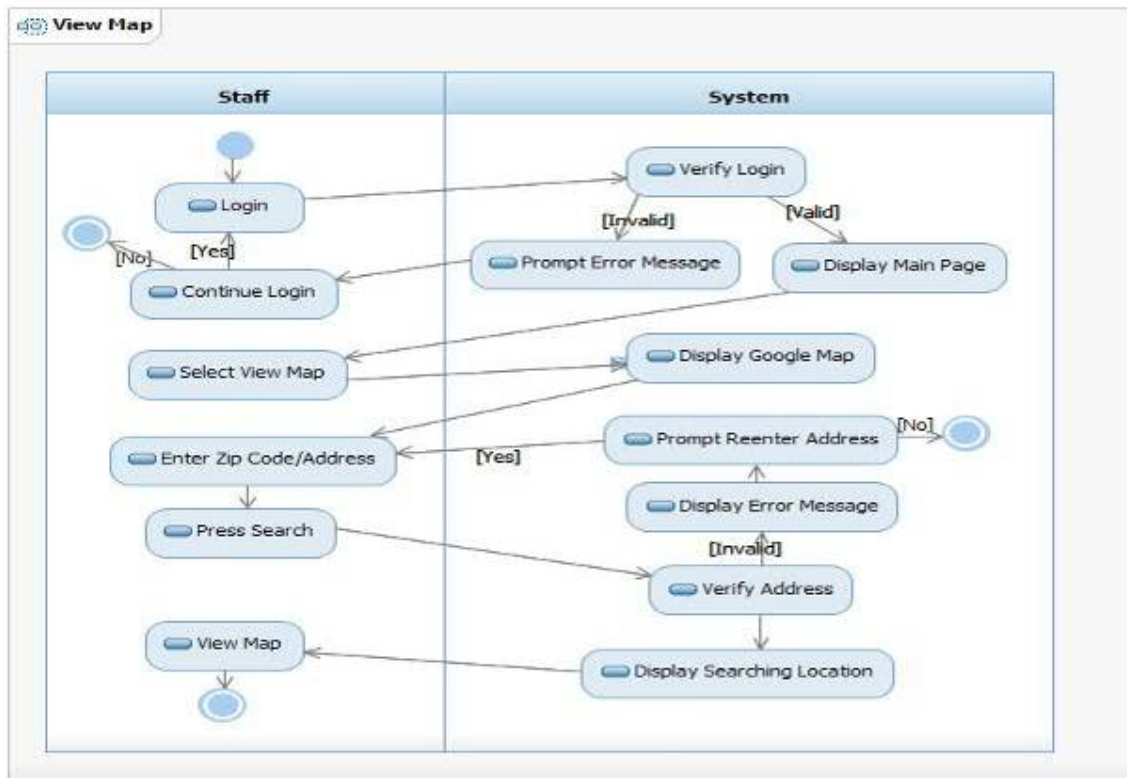
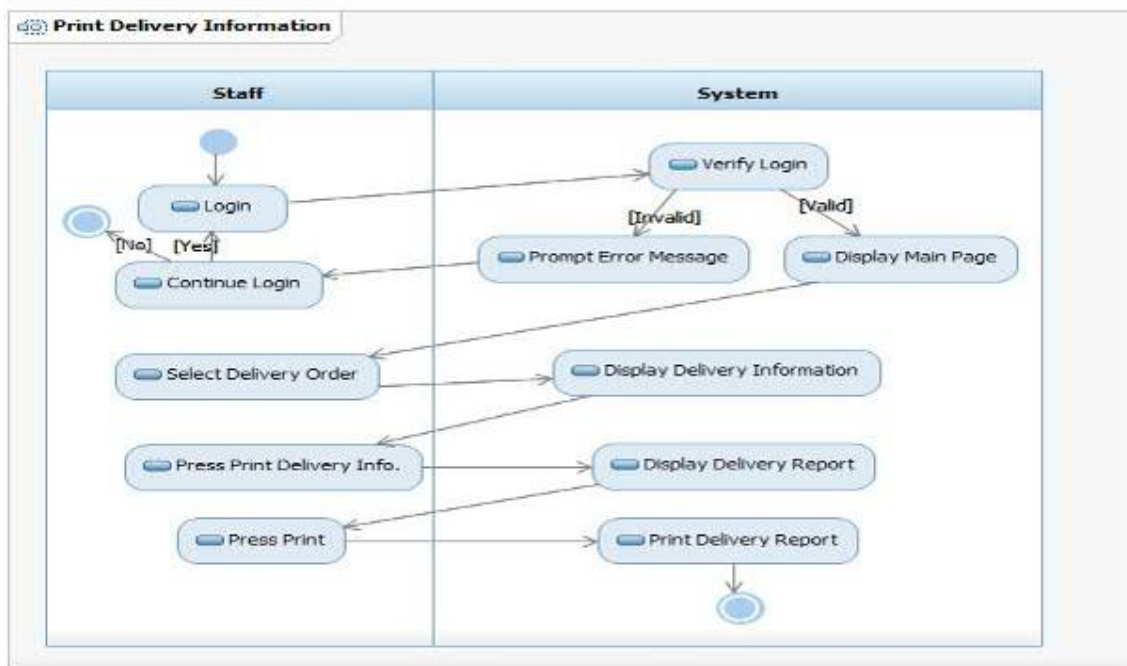


Figure 2.12: Delivery Activity Diagram

Activity Diagram for View Map (Staff)**Figure 2.13: View Map Activity Diagram****Activity Diagram for Print Delivery Information (Staff)****Figure 2.14: Print Delivery Information Activity Diagram**

2.8.3 Feedback

Activity Diagram for Feedback (Member)

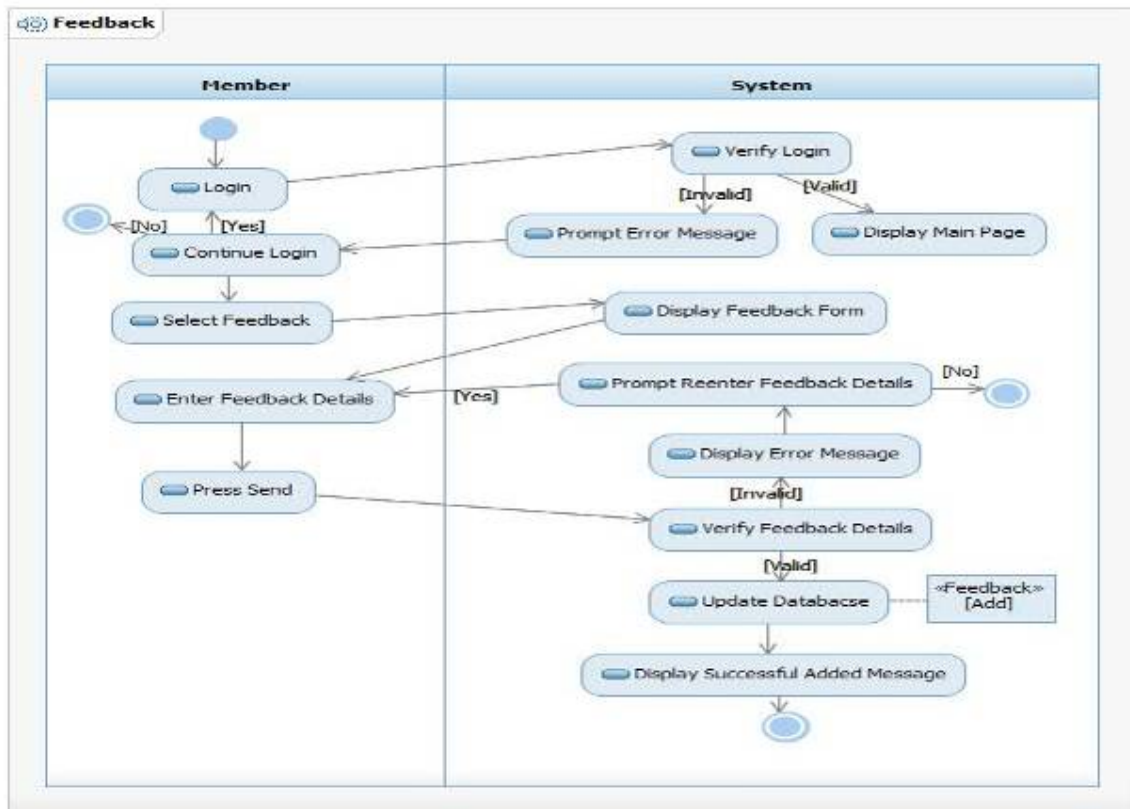


Figure 2.15: Feedback (Member) Activity Diagram

Activity Diagram for Feedback (Staff)

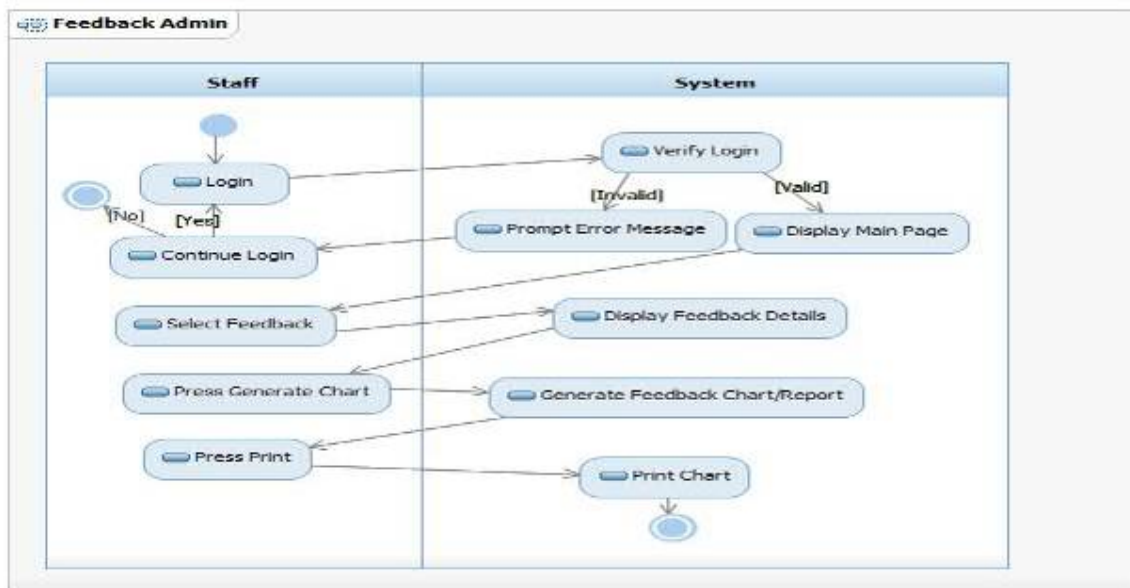


Figure 2.16: Feedback (Staff) Activity Diagram

2.8.4 Redemption

Activity Diagram for Redemption (Staff)

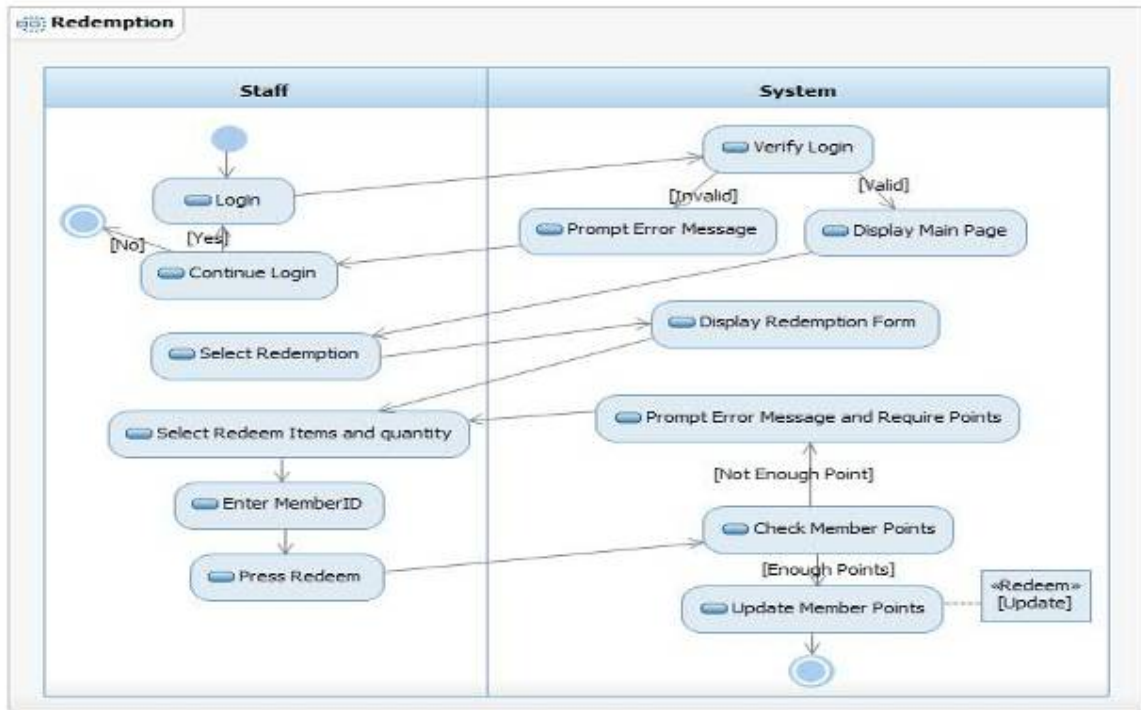


Figure 2.17: Redemption Activity Diagram

2.8.5 Rating

Activity Diagram for Rating (Member)

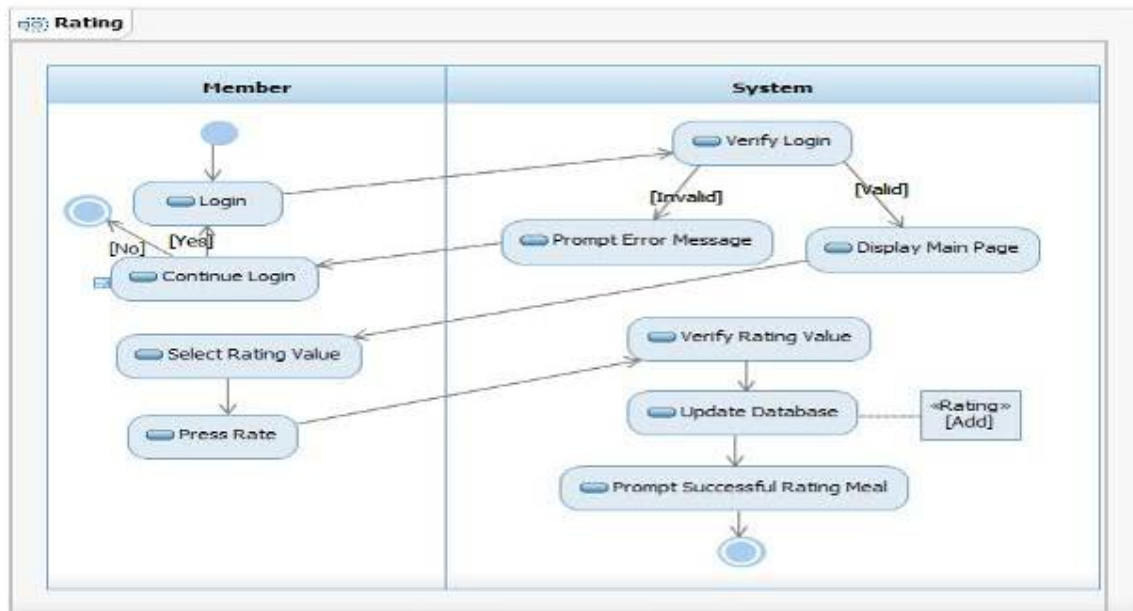


Figure 2.18: Rating Activity Diagram

2.8.6 Meal Maintenance

Activity Diagram for Add Meal (Admin)

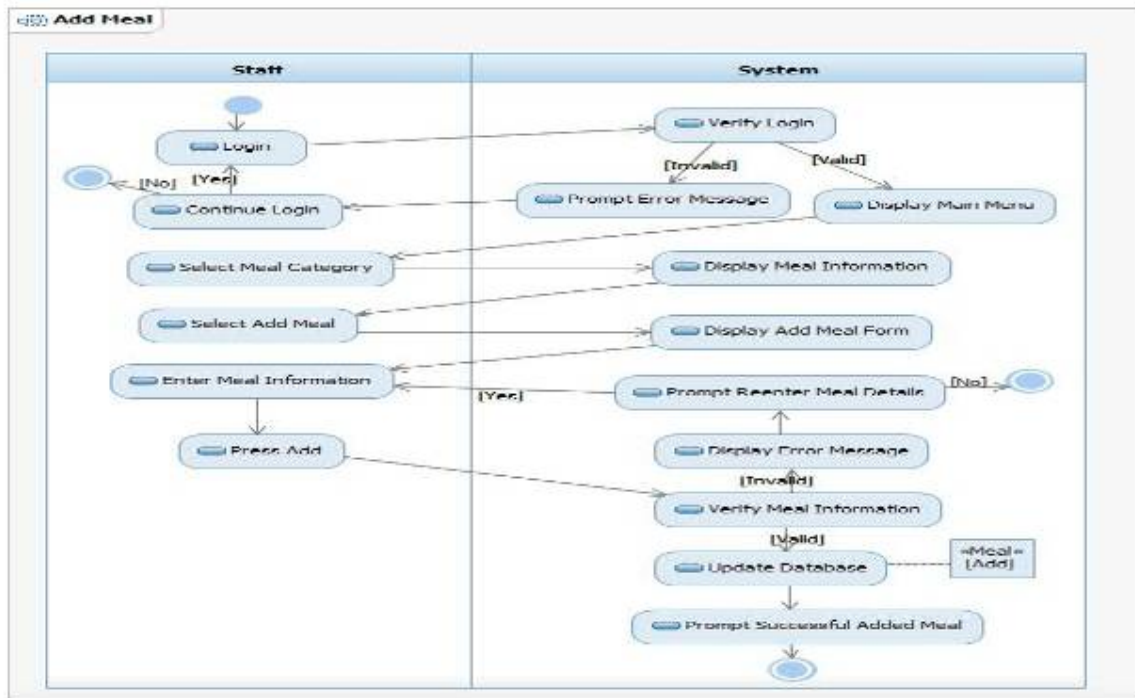


Figure 2.19: Add Meal Activity Diagram

Activity Diagram for Update Meal (Admin)

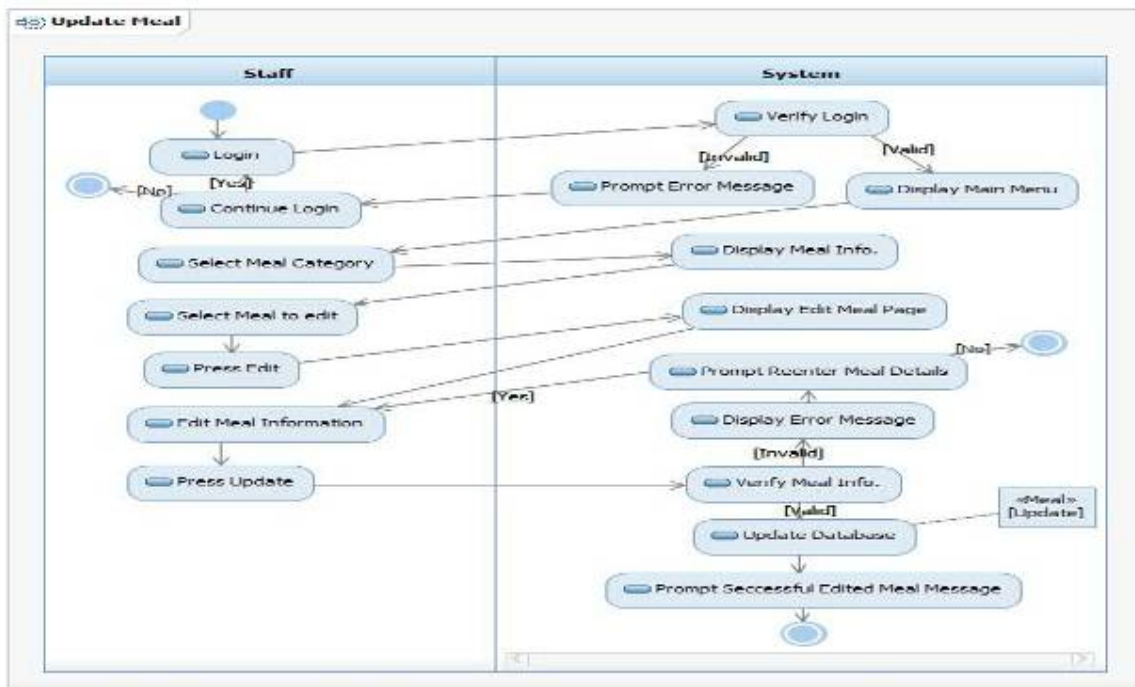


Figure 2.20: Update Meal Activity Diagram

Activity Diagram for Delete Meal (Admin)

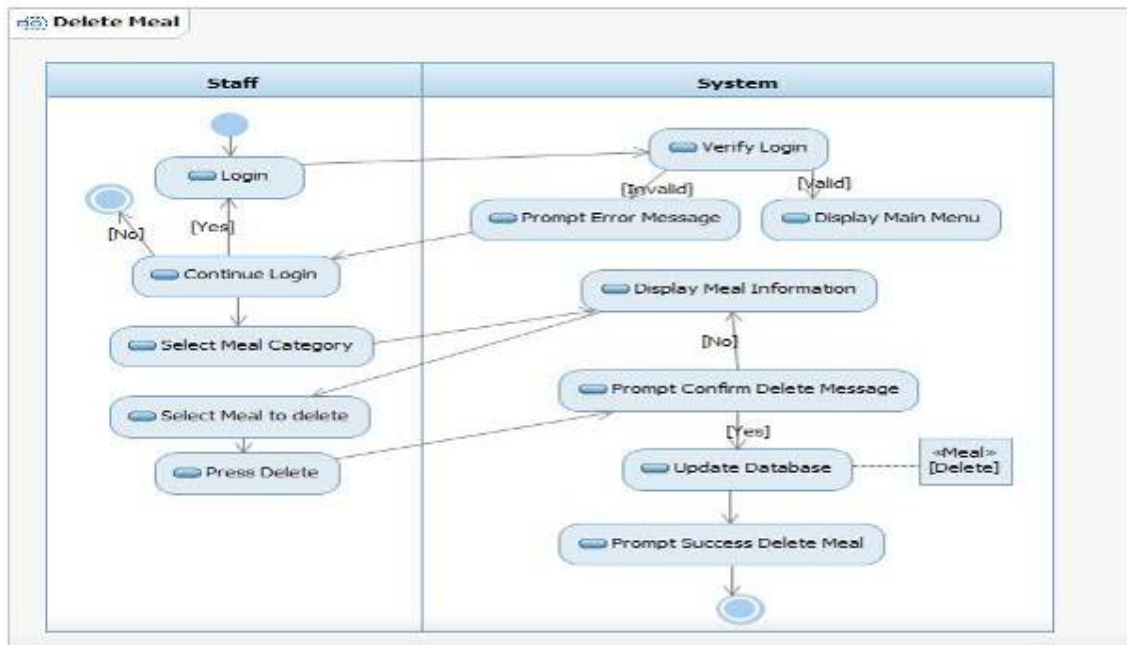


Figure 2.21: Delete Meal Activity Diagram

2.8.7 Generate Report

Activity Diagram for Report (Admin)

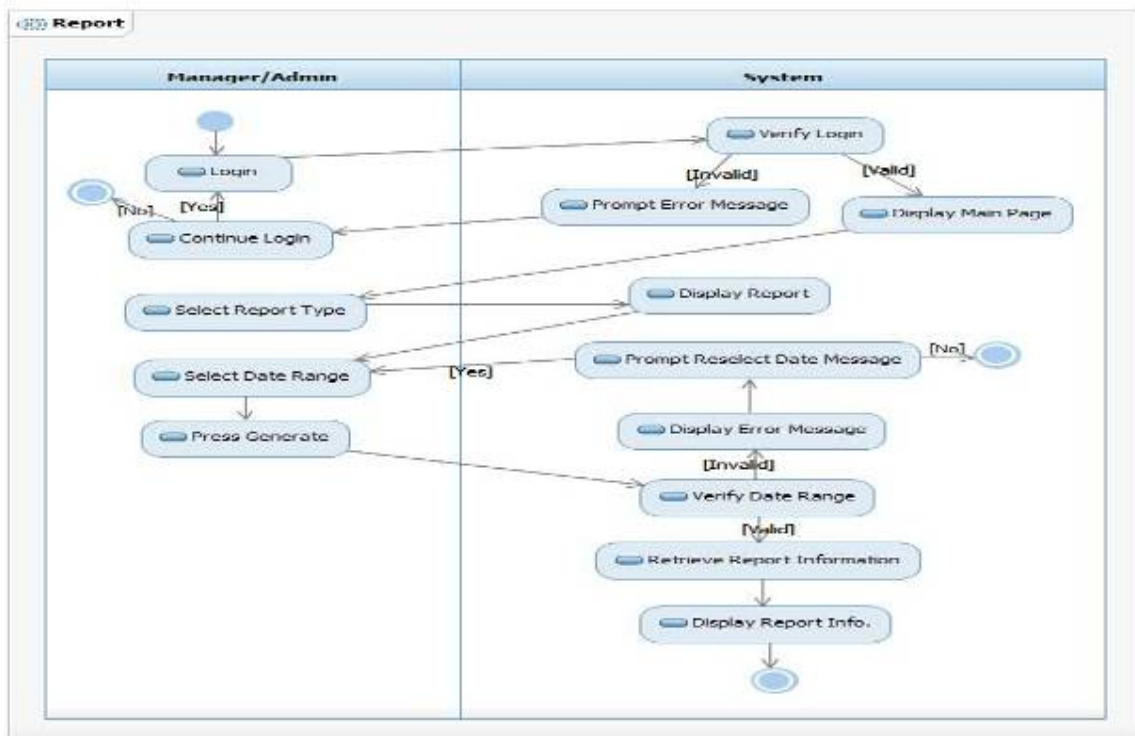


Figure 2.22: Generate Report Activity Diagram

2.9 Sequence Diagrams

2.9.1 Sequence Diagram for Order Meals

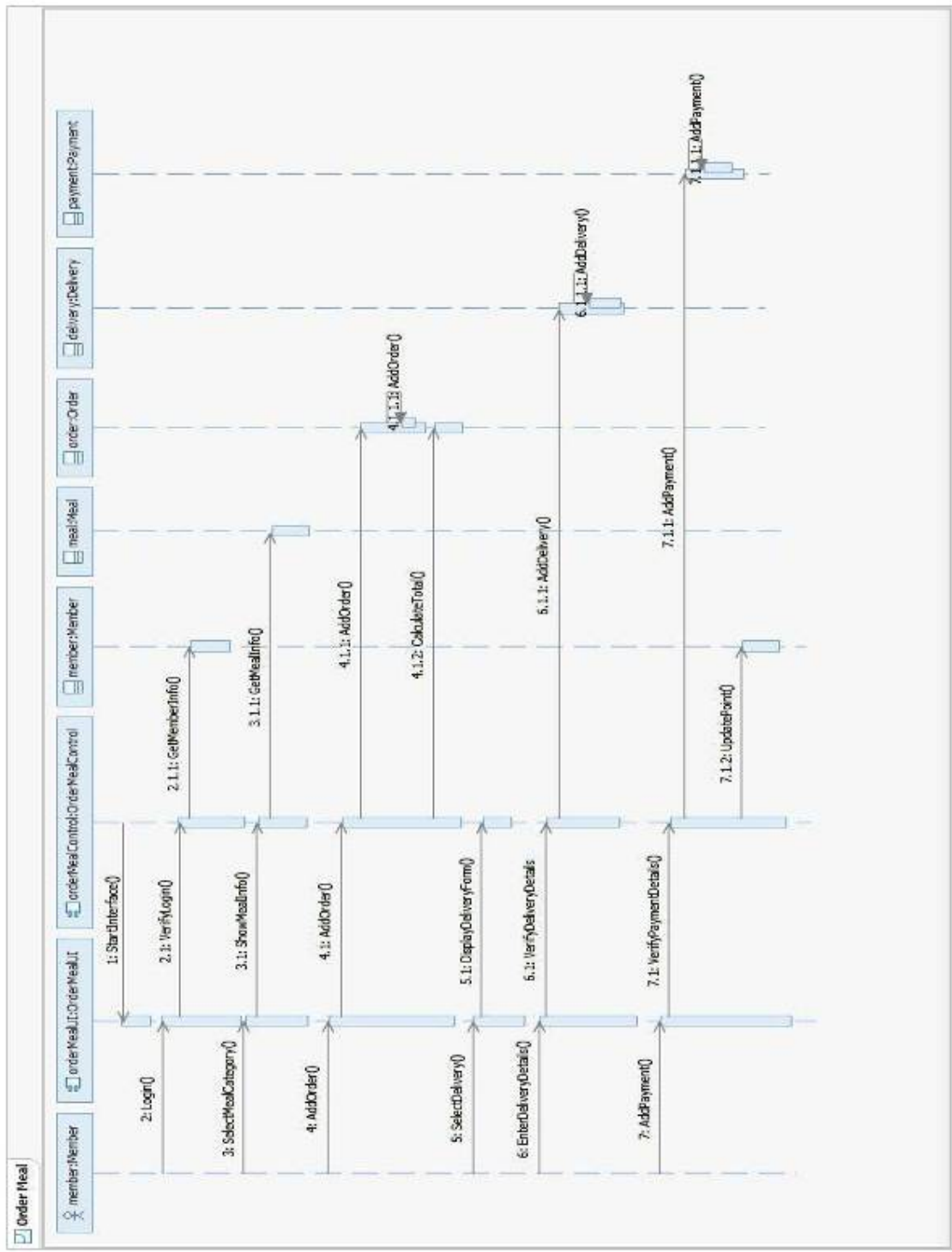


Figure 2.23: Order Meals Sequence Diagram

Sequence diagram for order meals include members (actor), and a few class which is member, meal, delivery, order, payment. At start, member login and select meal category. The system will get meal information from meal class and display out. Members make order by select order quantity and add the orders to order class. Members can choose to deliver or direct make payment. If members choose to deliver, they need to fill in the delivery details and add delivery to delivery class. Then, make payment by either credit card or cash and add payment in payment class.

Sequence Diagram for Check List

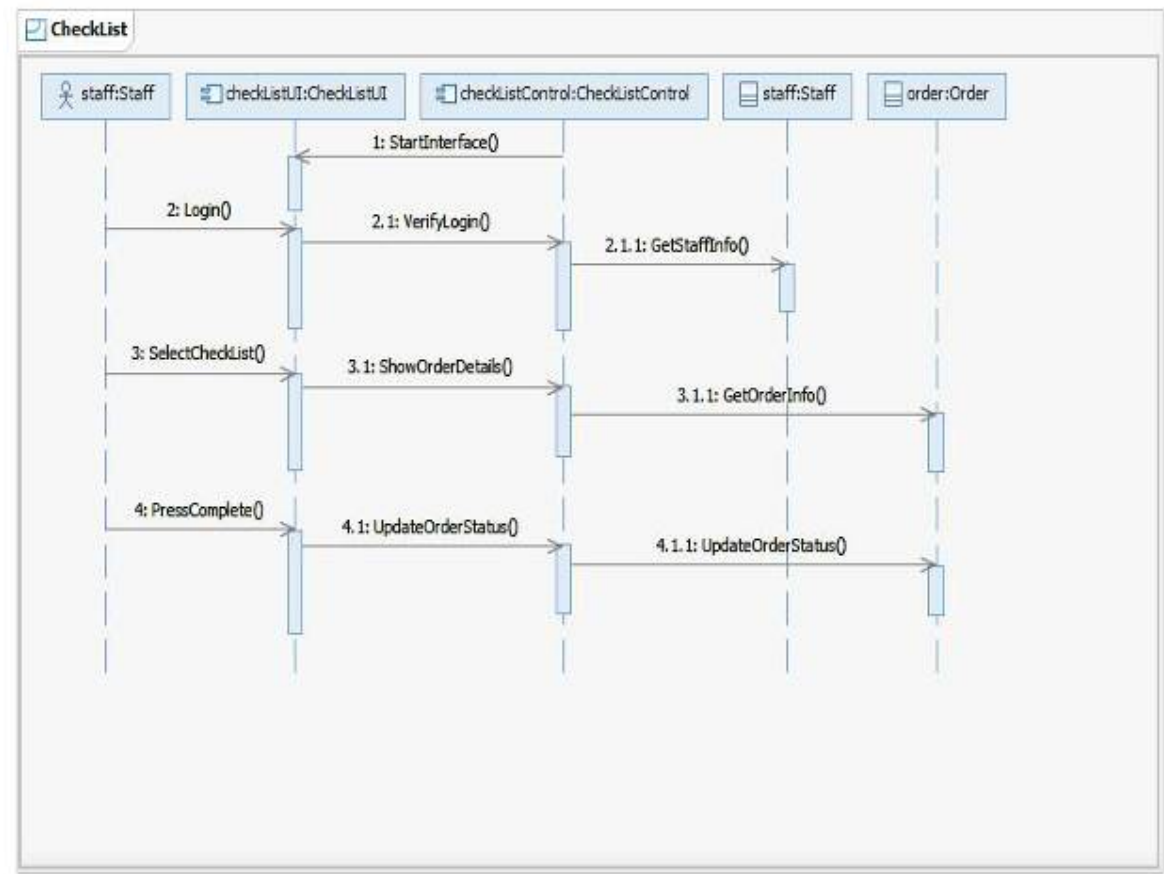


Figure 2.24: Check Order List Sequence Diagram

For this sequence diagram, it shows the meal orders in check list. It displays all the meal order details in screen by get the order information from order class. If the meal is cooked, staff press complete button, and the system will update the cook status in order class.

2.9.2 Delivery

Sequence Diagram for Delivery (Member)

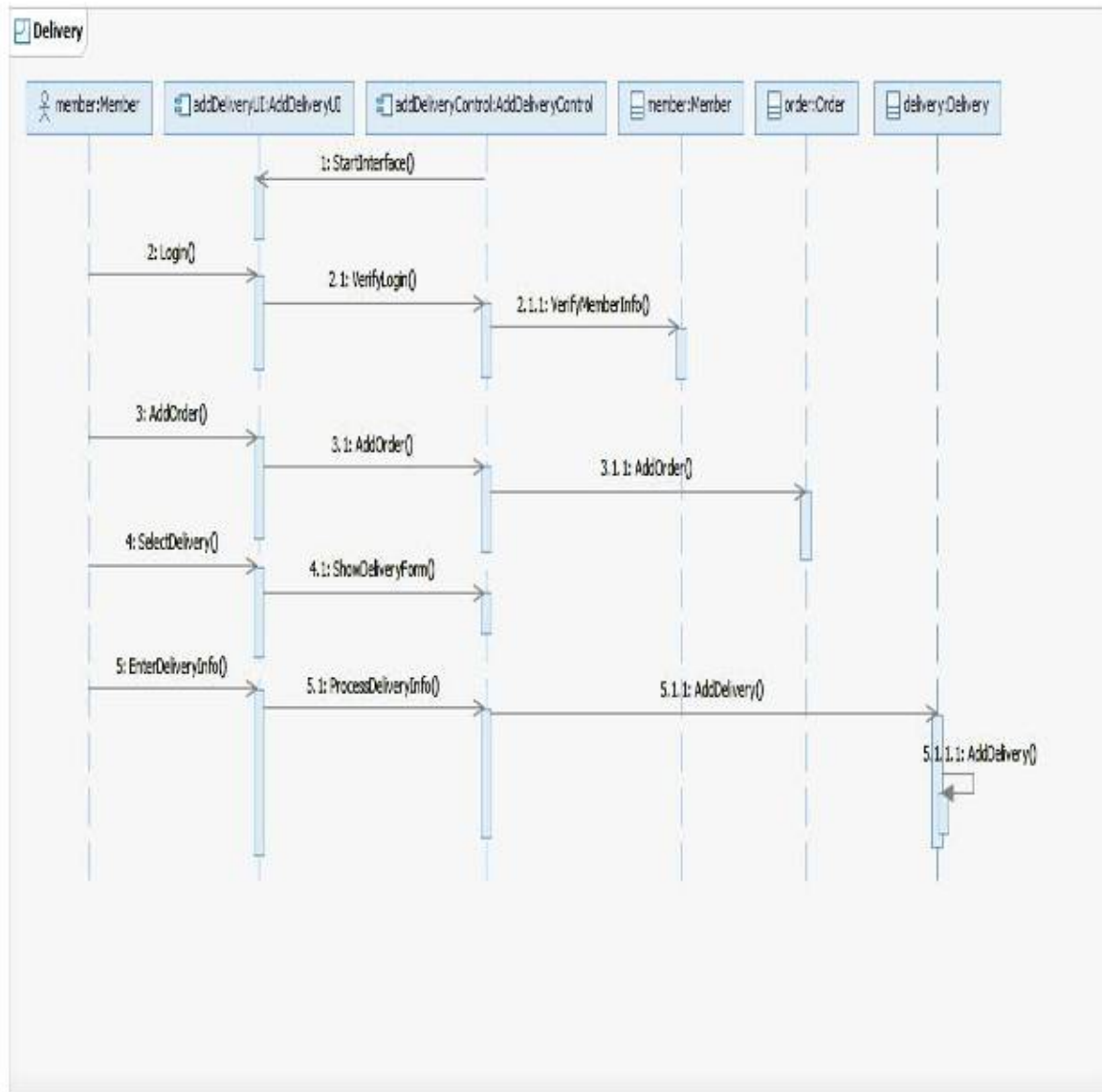


Figure 2.25: Delivery Sequence Diagram

In this delivery sequence diagram include member, order, delivery classes, it enable user to add delivery to delivery class. After members add orders in order class, they choose to deliver the meals and it will show the delivery form on the screen to allow members to fill in delivery information. After member enter the delivery details like address, contact number, date, time, the system will verify the delivery details. If the information is valid, it will add the delivery into delivery class.

Sequence Diagram for Delivery (Staff)

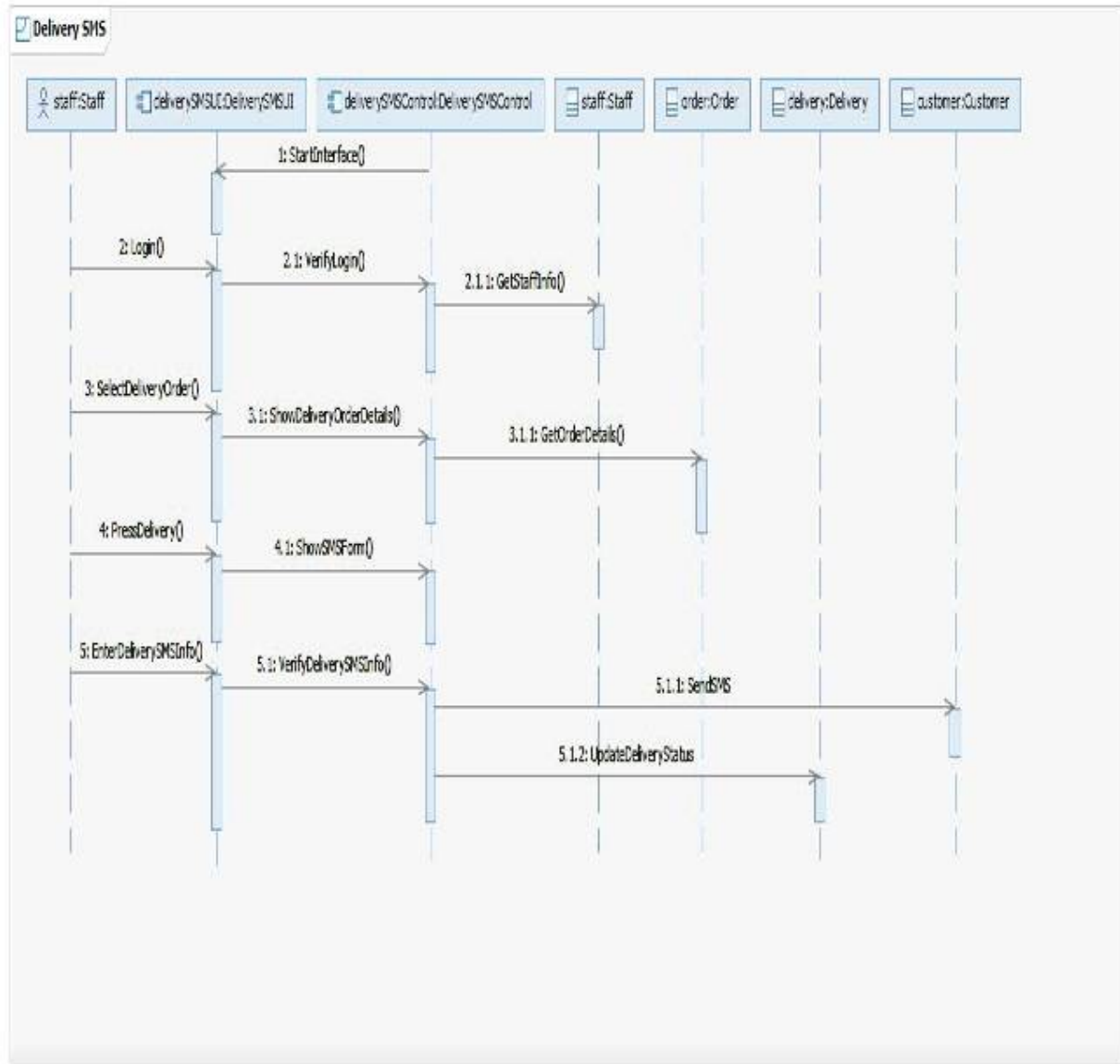


Figure 2.26: Delivery SMS Sequence Diagram

This sequence diagram is show delivery meal details. Staff login and select for the delivery button, system process and show the delivery order details by getting the details from order class. Staff press delivery button and it redirect to SMS delivery form to enable staff to fill in SMS delivery details such like device connect, speed and message and submit it to do verification. If it is successful to send out to customer, system will update the delivery status in delivery class.

Sequence Diagram for View Map

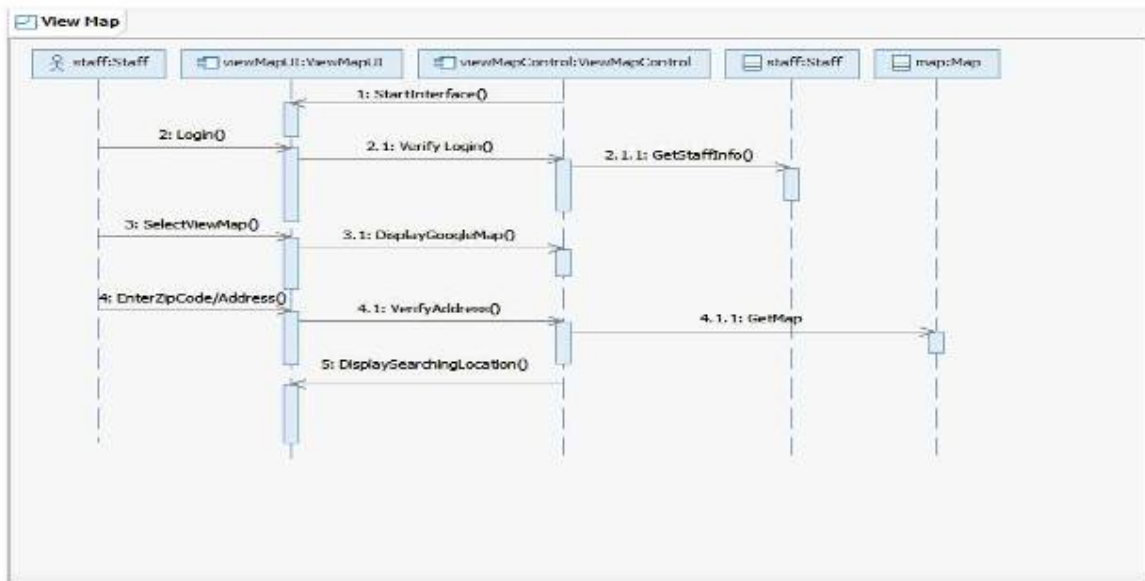


Figure 2.27: View Map Sequence Diagram

This sequence diagram shows the step that viewing map by using the system. Staff be able to search delivery location by enter zip code or address, then the system control will verify the address entered and get the map location from map class, display out to staff.

Sequence Diagram for Print Delivery Information

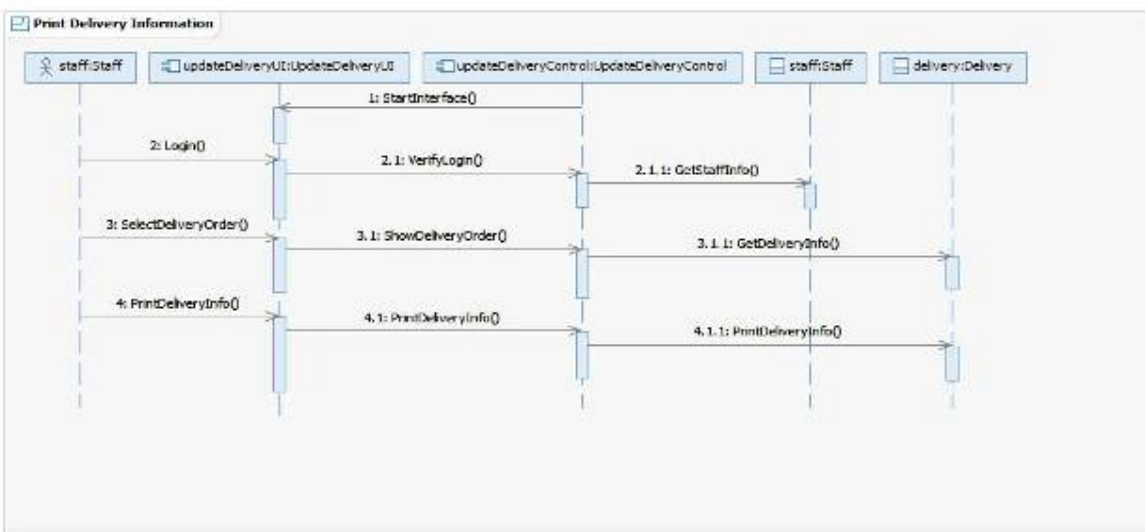


Figure 2.28: Print Delivery Information Sequence Diagram

It shows staff prints for delivery details like address, contact number. It displays delivery order information when staff selects the delivery button. Staff press print delivery information button to print the delivery details.

2.9.3 Feedback

Sequence Diagram for Feedback (Member)

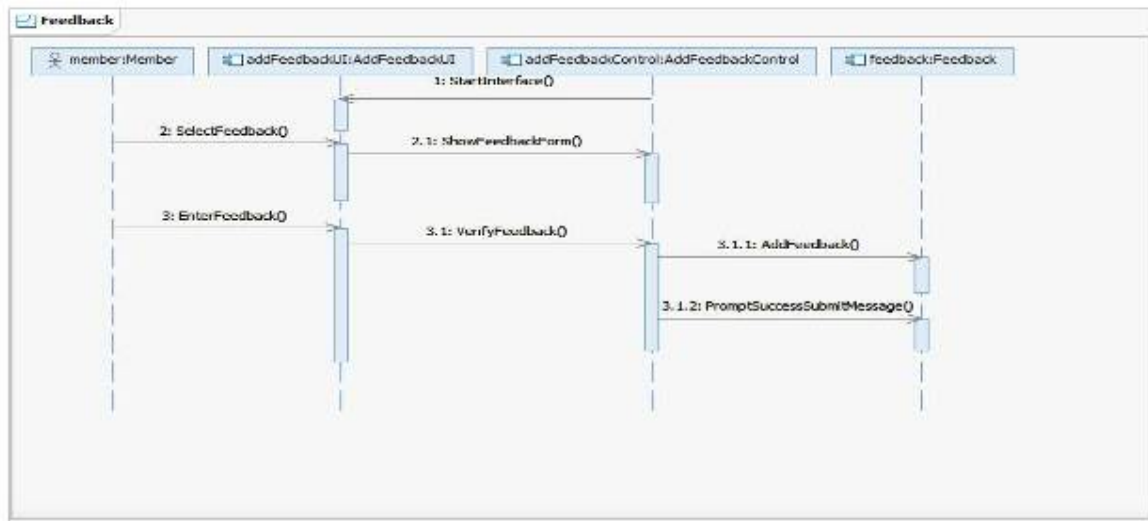


Figure 2.29: Feedback (Member) Sequence Diagram

Feedback sequence diagram is show the flow of added feedback. Members login and select feedback form, then fill in the feedback and comments and submit. The system verify the feedback and display succesful submit message.

Sequence Diagram for Feedback (Staff)

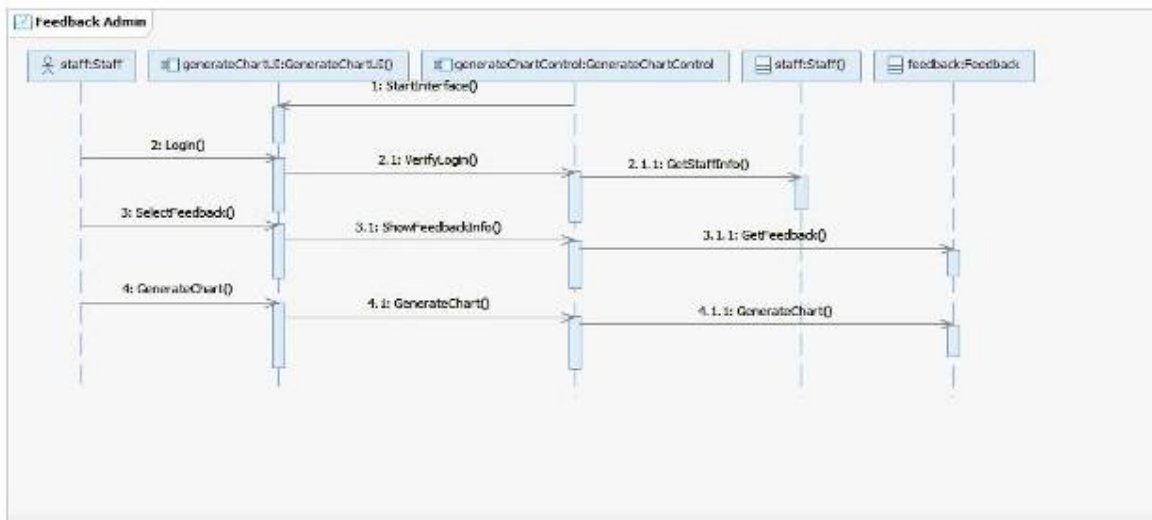


Figure 2.30: Feedback (Staff) Sequence Diagram

This feedback is use by staff to generate chart. When staff selects feedback, it will show feedback information by get the details from feedback class. Staff press “generate chart” to generate chart based on the average values for each criteria (meal, price, ambiance, etc).

2.9.4 Redemption

Sequence Diagram for Redemption

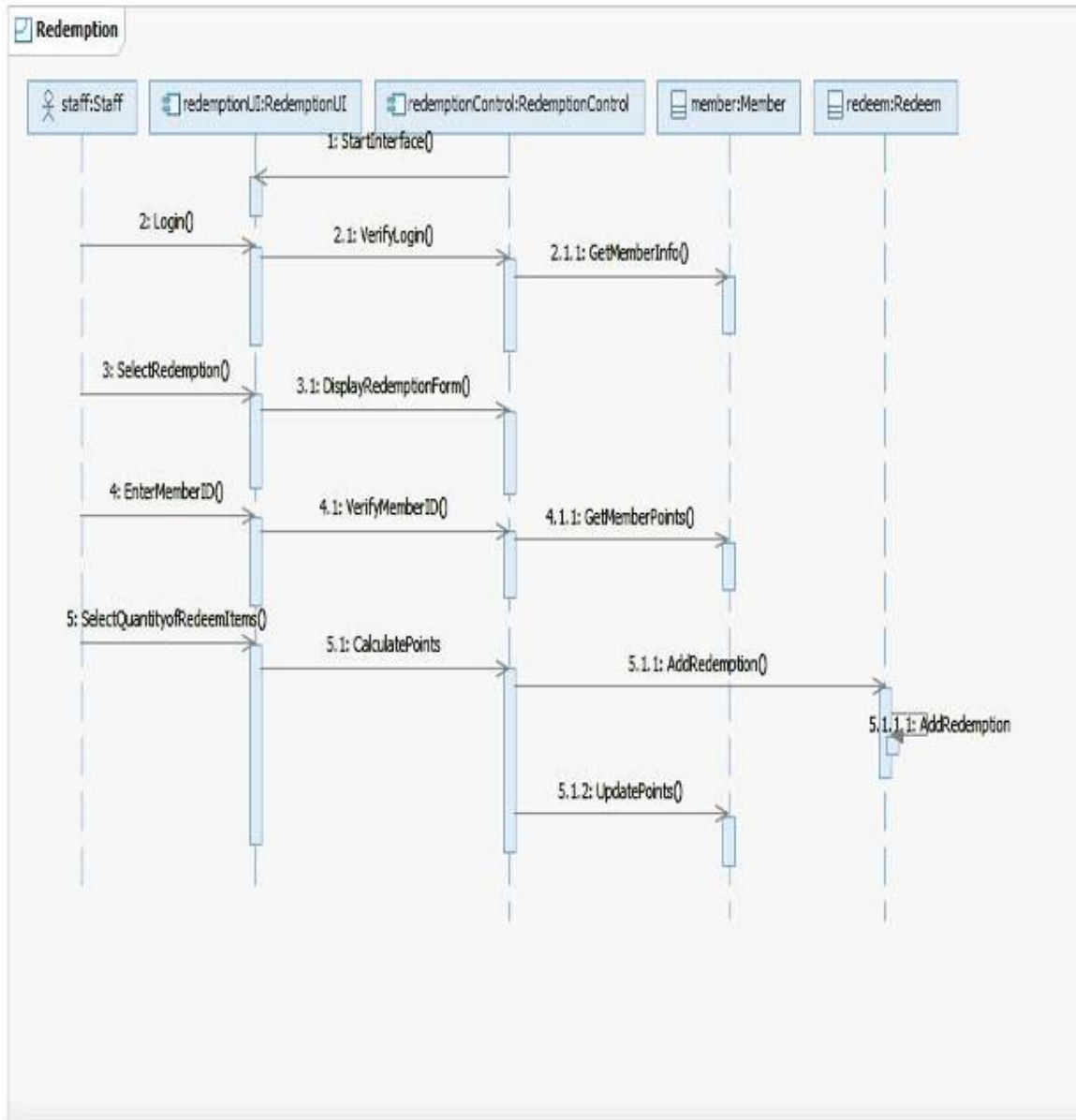


Figure 2.31: Redemption Sequence Diagram

The redemption sequence diagram shows the step or sequence of redeeming items (key chain, toy, cup) by using member points. After staff login, they select redemption and the system shows the redemption form. Staff select the quantity of redeem items and the system verifies the member points to check whether the points are sufficient. If the member point is enough for redemption, the system will add redemption to the redeem class and update /deduct member points.

2.9.5 Rating

Sequence Diagram for Rating

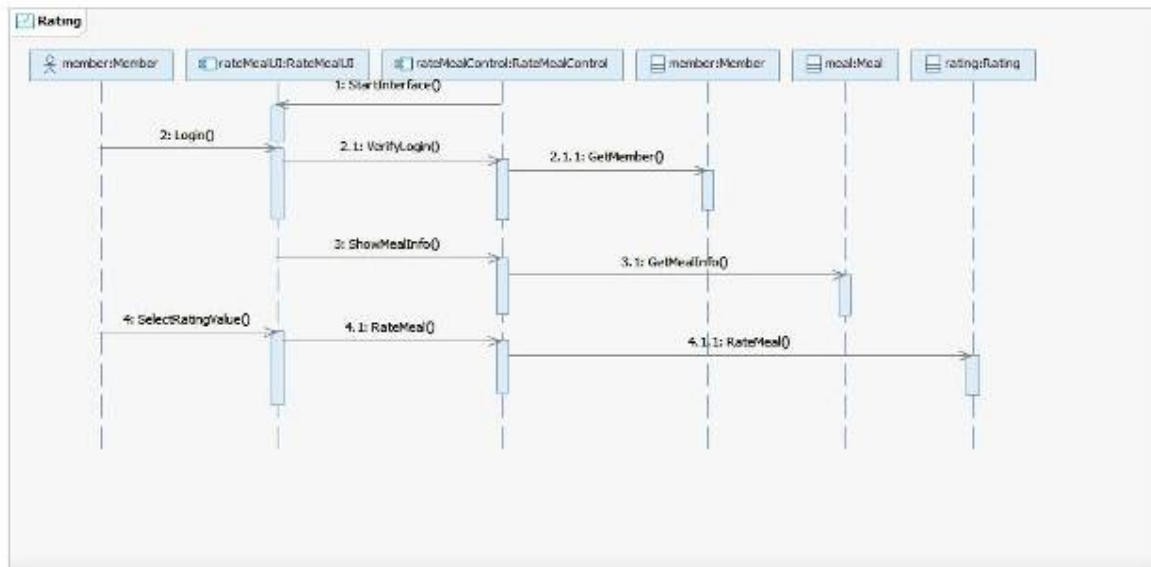


Figure 2.32: Rating Sequence Diagram

The system shows meals that enable member to rate meals by select the rating values (star) and press rate button. System will verify the rate values and add rate to rating class.

2.9.6 Meal Maintenance

Sequence Diagram for Add Meal

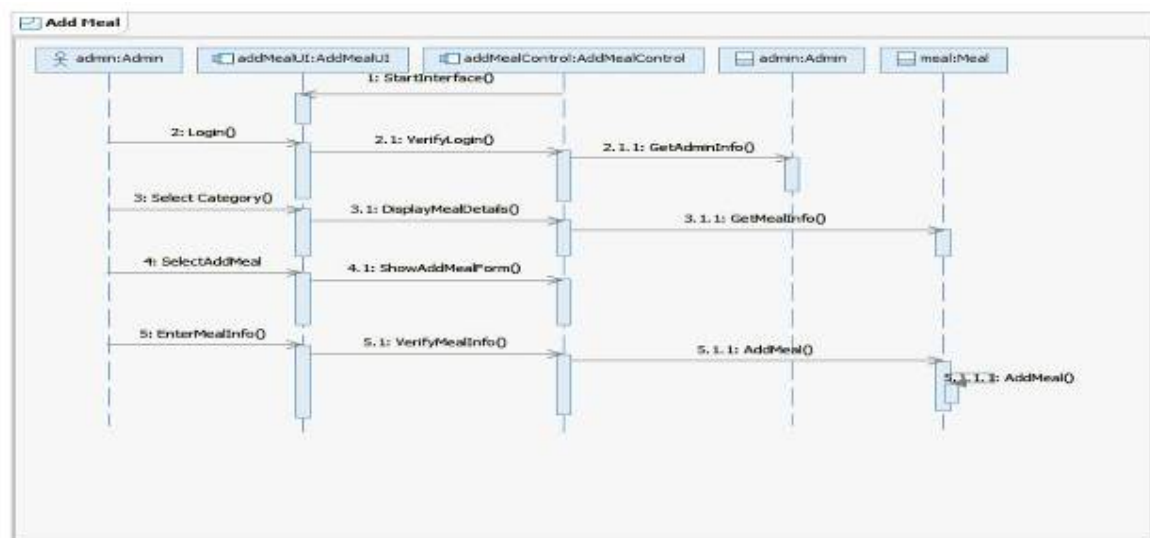


Figure 2.33: Add Meal Sequence Diagram

It shows the sequence of add meal. Admin select the meals' category and system will display meal details. Enter meal details and system verifies for details, then adds meals in meal class.

Sequence Diagram for Update Meal

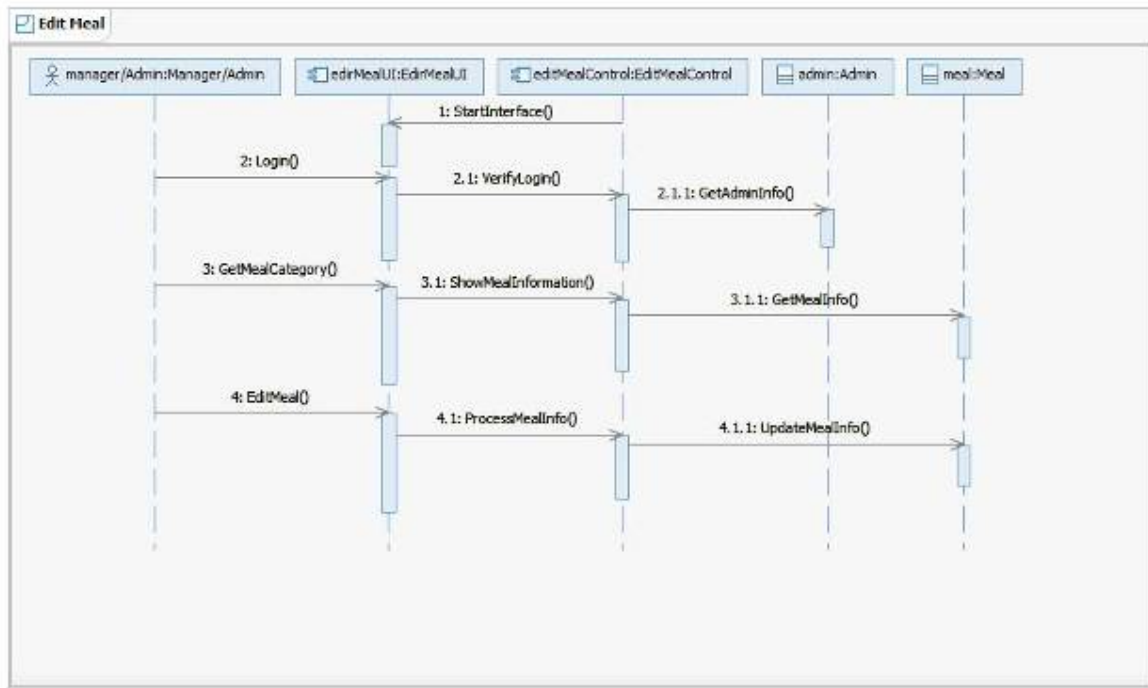


Figure 2.34: Update Meal Sequence Diagram

Admin can update meal by select meal category, edit the meal details and update it. System will verify the update meal details and update details in meal class.

Sequence Diagram for Delete Meal

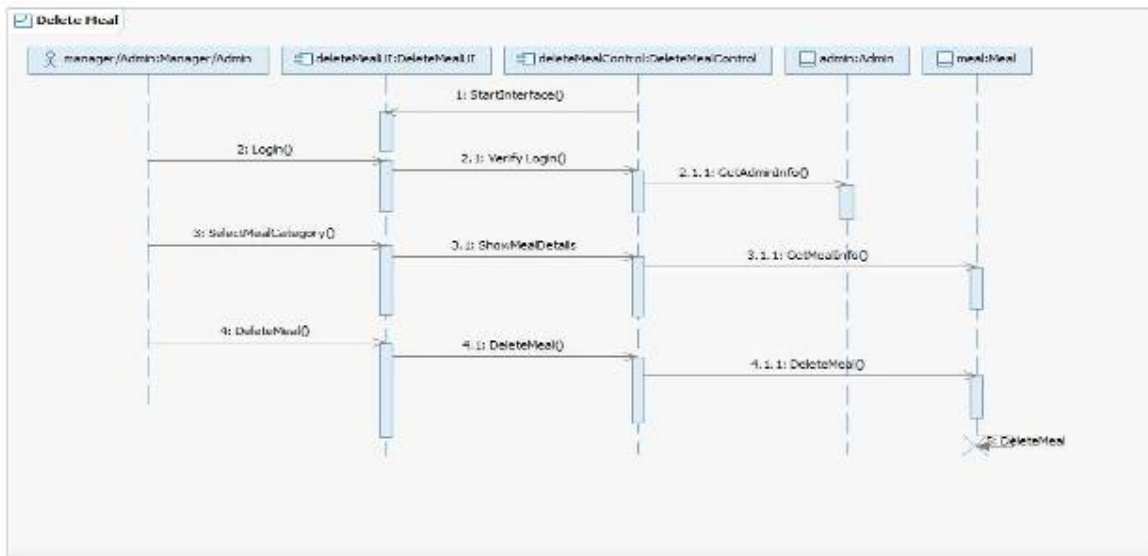


Figure 2.35: Delete Meal Sequence Diagram

Admin also enable to delete meal by select deleted meal's category, system show meal details. Admin press delete to delete meal and system delete the meal from meal class.

2.9.7 Generate Report

Sequence Diagram for Generate Report

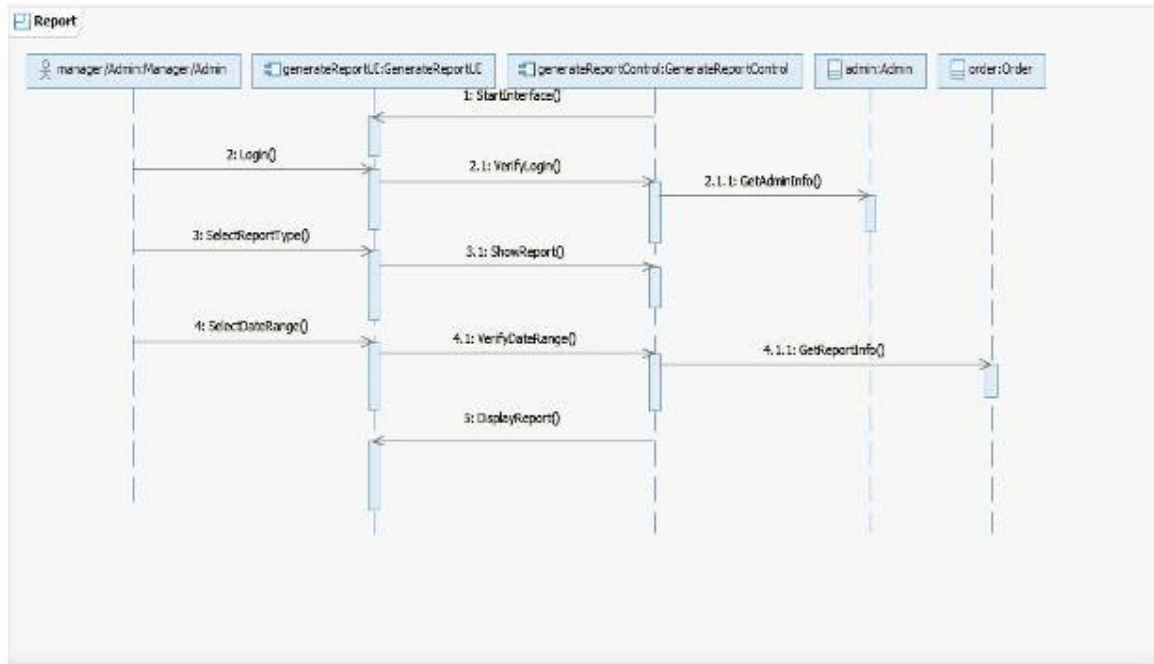


Figure 2.36: Generate Report Sequence Diagram

Admin generate report by select the report type (eg: monthly sales report, top 5 monthly report, etc). System will show the report based on the selection type and admin enable to select date range to generate report by getting report information from particular class and display out the report.

2.10 Summary

This chapter discuss about the fact finding technique, system requirements, and all the UML diagrams. A complete and details requirements has to be gathered before a quality informaiton system can be produced. Hence, the process of requiremens analysis is very important. So, the fast finding techniques that we used are interview and observation. Thus, we had more understand about the restaurant workflow. Functional requiements had described the details of each modules. By the way, non-functional requirements was described those requiments that are indirectly relate to system development. Requirements analysis is an important part of the system design process. Once the client's requirements have been identified and facts collected, we are then in a position to design a solution.

At start, I encounted a problems in drawing because I did not have the software to draw the diagrams. So, I used the IBM rational XDE software in lab to draw the diagrams. This software is user friendly because though I had forgotten in how to use it but I just learned it in shorter time to master using this software. The use case diagram is provided in order to increase the understanding of the system for developer. A use case defines the interaction between external actors and system under consideration to accomplish a goal.

Chapter 3

System Design

System Design

3.1 Introduction

This chapter will briefly discuss about my development project. This chapter was also the main chapter on this project as it will clearly describe details in the project development life cycle from the project testing stage.

3.2 Entity Relationship Diagram

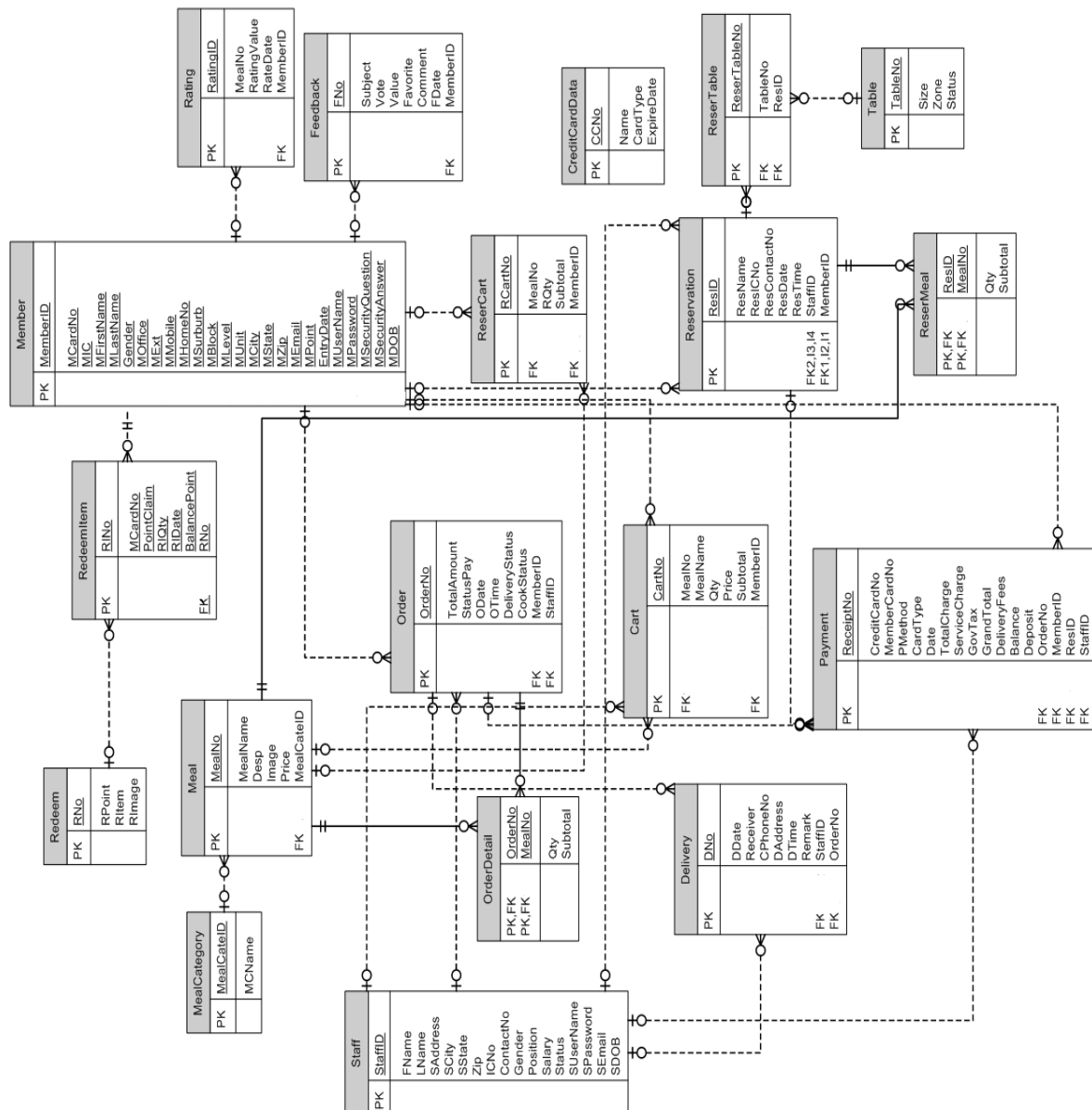


Figure 3.1: Entity Relationship Diagram

3.3 Data Dictionary

Table Name: Cart

Field Name	Data Type	Data Description	Key	Reference
CartNo	int Identity(1,1)	Cart Number	PK	
MealNo	nvarchar (10)	Meal Number	FK	Meal
MealName	nvarchar (50)	Meal Name		
Qty	int	Order quantity		
Price	decimal(18,2)	Meal Price		
Subtotal	decimal(18,2)	Subtotal of Meal		
MemberID	nvarchar(50)	Member ID	FK	Staff

Table Name: CreditCardData

Field Name	Data Type	Data Description	Key	Reference
CCNo	nvarchar(20)	Credit Card Number	PK	
Name	nvarchar(10)	Card Name		
CardType	nvarchar(50)	Card Type		
ExpireDate	date	Card's Expire Date		

Table Name: Delivery

Field Name	Data Type	Data Description	Key	Reference
DNo	Int Identity(1,1)	Delivery Number	PK	
DDate	date	Delivery Date		
Receiver	nvarchar(30)	Receiver Name		
CPhoneNo	nvarchar(12)	Receiver Phone Number		
DAddress	nvarchar(50)	Delivery Address		
DTime	time(0)	Delivery Time		
Remark	nvarchar(50)	Remark		
StaffID	nvarchar(10)	Staff ID	FK	Staff
OrderNo	nvarchar(10)	Order Number	FK	Order

Table Name: Feedback

Field Name	Data Type	Data Description	Key	Reference
FNo	int Identity(1,1)	Feedback Number	PK	
Subject	nvarchar(50)	Subject/Criteria		
Vote	nvarchar(10)	Vote (eg:Excellent, Good)		
Value	int	Values (eg:5,4,3,2,1)		
Favorite	nvarchar(50)	Member's Favorite Meal		
Comment	nvarchar(50)	Feedback Comment		
FDate	date	Feedback's Date		
MemberID	nvarchar(10)	Member ID	FK	Member

Table Name: Meal

Field Name	Data Type	Data Description	Key	Reference
MealNo	nvarchar(10)	Meal Number	PK	
MealName	nvarchar(50)	Meal Name		
Desp	nvarchar(50)	Meal Description		
Image	nvarchar(30)	Meal Image		
Price	decimal(8,2)	Meal Price		
MealCateID	nvarchar(10)	Meal Category ID	FK	MealCategory

Table Name: MealCategory

Field Name	Data Type	Data Description	Key	Reference
MealCateID	nvarchar(10)	Meal Category ID	PK	
MCName	nvarchar(30)	Meal Category Name		

Table Name: Member

Field Name	Data Type	Data Description	Key	Reference
MemberID	nvarchar(10)	Member ID	PK	
MCardNo	nvarchar(20)	Member Card Number		
MIC	nvarchar(12)	Member IC		
MFirstName	nvarchar(30)	First Name		
MLastName	nvarchar(30)	Last Name		
Gender	nvarchar(6)	Gender		
MOffice	nvarchar(15)	Office Number		
MExt	nvarchar(10)			
MMobile	nvarchar(10)	Member Contact No.		
MHomeNo	nvarchar(20)	Member Home Tel.		
MSurburb	nvarchar(20)	Surburb		
MBlock	nvarchar(10)	Block		
MLevel	nvarchar(10)	Level		
MUnit	nvarchar(10)	Unit		
MCity	nvarchar(30)	City		
MState	nvarchar(30)	State		
MZip	Int	Zip Code		
MEmail	nvarchar(30)	Member Email		
MPoint	Int	Member's Point		
EntryDate	date	Entry Date		
MUserName	nvarchar(30)	User Name		
MPassword	nvarchar(30)	Password		
MSecurityQuestion	nvarchar(50)	Security Question		
MSecurityAnswer	nvarchar(50)	Security Password		
MDOB	date	Date of Birth		

Table Name: Order

Field Name	Data Type	Data Description	Key	Reference
OrderNo	nvarchar(10)	Order Number	PK	
TotalAmount	decimal(10,2)	Total Amount		
StatusPay	nvarchar(6)	Payment Status		
ODate	date	Order Date		
OTime	time(0)	Order Time		
DeliveryStatus	nvarchar(10)	Delivery Status		
CookStatus	nvarchar(10)	Cook Status		
MemberID	nvarchar(10)	Member ID	FK	Member
StaffID	nvarchar(10)	Staff ID	FK	Staff

Table Name: OrderDetail

Field Name	Data Type	Data Description	Key	Reference
OrderNo	nvarchar(10)	Order Number	PK, FK	Order
MealNo	nvarchar(10)	Meal Number	PK, FK	Meal
Qty	int	Order Quantity		
Subtotal	decimal(8,2)	Order Subtotal		

Table Name: Rating

Field Name	Data Type	Data Description	Key	Reference
RatingID	int IDENTITY(1,1)	Rating ID	PK	
MealNo	nvarchar(10)	Meal number		
RatingValue	int	Rating Values(eg:1,2,3,4,5)		
RateDate	date	Rate Date		
MemberID	nvarchar(10)	Member ID	FK	Member

Table Name: Redeem

Attribute	Data Type	Data Description	Key	Reference
RNo	nvarchar(10)	Redeem Number	PK	
RPoint	int	Point		
RItem	nvarchar(30)	Redeem Items		
RImage	nvarchar(30)	Item Image		

Table Name: RedeemItem

Field Name	Data Type	Data Description	Key	Reference
RINo	int	Redeem Item Number	PK	
MemberCardNo	nvarchar(50)	Member Card Number		
PointClaim	int	Point Require for redeem		
RIQty	int	Quantity Redemption		
RIDate	date	Redemption Date		
BalancePoint	int	Balance Point		
RNo	int		FK	Redeem

Table Name: Table

Field Name	Data Type	Data Description	Key	Reference
TableNo	nvarchar(5)	Table Number	PK	
Size	int	Number of seat(eg:2,3,4,8,10)		
Zone	nvarchar(20)	Zone(eg:non-smoking)		
Status	nvarchar(20)	Status Available		

Table Name: ReserTable

Field Name	Data Type	Data Description	Key	Reference
ReserTableNo	int	Auto Generate ID	PK	
TableNo	nvarchar(10)	Table Number	FK	
ResID	nvarchar(10)	Reservation ID	FK	

Table Name: Reservation

Field Name	Data Type	Data Description	Key	Reference
ResID	nvarchar(10)	Reservation ID	PK	
ResName	nvarchar(30)	People who make reservation		
ResICNo	nvarchar(12)	IC Number		
ResContactNo	nvarchar(10)	Contact Number		
ResDate	date	Reservation Date		
ResTime	time	Reservation Time		
StaffID	nvarchar(10)	Staff ID	FK	Staff
MemberID	nvarchar(10)	Member ID	FK	Member

Table Name: ReserMeal

Field Name	Data Type	Data Description	Key	Reference
ResID	nvarchar(10)	Reservation ID	PK, FK	
MealNo	nvarchar(10)	Meal Number	PK, FK	
Qty	int	Reserve Quantity		
Subtotal	decimal(10,2)	Reserve Subtotal		

Table Name: ReserCart

Field Name	Data Type	Data Description	Key	Reference
RCartNo	int IDENTITY(1,1)	Reservation Cart Number	PK	
MealNo	nvarchar(10)	Meal Number	FK	ReserMeal
RQty	int	Quantity Reserve		
Subtotal	decimal(10,2)	Meal Subtotal in reservation		
MemberID	nvarchar(10)	Member ID	FK	Member

Table Name: Payment

Field Name	Data Type	Data Description	Key	Reference
ReceiptNo	int	Receipt Number	PK	
CreditCardNo	nvarchar(20)	Credit Card Number		
MemberCardNo	nvarchar(20)	Member Card Number		
PMethod	nvarchar(10)	Payment Method		
CardType	nvarchar(10)	Card Type		
Date	date	Pay Date		
TotalCharge	decimal(10,2)	Total Charge		
ServiceCharge	decimal(10,2)	Service Charge		
GovTax	decimal(10,2)	Government Tax		
GrandTotal	decimal(10,2)	Grand Total		
DeliveryFees	decimal(10,2)	Delivery Fees		
Balance	decimal(10,2)	Balance		
Deposit	decimal(10,2)	Deposit		
OrderNo	nvarchar(10)	Order Number	FK	Order
MemberID	nvarchar(10)	Member ID	FK	Member
ResID	nvarchar(10)	Reservation ID	FK	Reservation

Table Name: Staff

Field Name	Data Type	Data Description	Key	Reference
StaffID	nvarchar(10)	Staff ID	PK	
FName	nvarchar(20)	Staff First Name		
LName	nvarchar(20)	Staff Last Name		
SAddress	nvarchar(20)	Address		
SCity	nvarchar(20)	City		
SState	nvarchar(20)	State		
Zip	int	Zip Code		
ICNo	nvarchar(20)	IC Number		
ContactNo	nvarchar(20)	Contact Number		
Gender	nvarchar(6)	Gender		
Position	nvarchar(10)	Position		
Salary	decimal(10,2)	Salary		
Status	nvarchar(10)	Free Status		
SUserName	nvarchar(20)	User Name		
SPassword	nvarchar(20)	Password		
SEmail	nvarchar(30)	Email		
SDOB	date	Date of Birth		

3.4 Normalization

Third Normal Form (3rd NF)

MealCategory (MealCateID, MCName)

Meal (MealNo, MealName, Desp, Image, Price, MealCateID*)

OrderDetail (OrderNo*, MealNo*, Qty, Subtotal)

Order (OrderNo, TotalAmount, StatusPay, ODate, OTime, DeliveryStatus, CookStatus, MemberID*, StaffID*)

Cart (CartNo, MealName, Qty, Price, Subtotal, MealNo*, StaffID*)

Delivery (DNo, DDate, Receiver, CPhoneNo, DAddress, DTime, Remark, StaffID*, OrderNo*)

Feedback (FNo, Subject, Vote, Value, Favorite, Comment, FDate, MemberID*)

Rating (RatingID, RatingValue, RateDate, MealNo*, MemberID*)

Redeem (RNo, RPoint, RItem, RImage)

RedeemItem (RINo, MemberCardNo, PointClaim, RIQty, QIDate, BalancePoint, RNo*)

Staff (StaffID, FName, LName, SAddress, SCity, SState, Zip, ICNo, ContactNo, Gender, Position, Salary, Status, SUssetName, SPassword, SEmail, SDOB)

Member (MemberID, MCardNo, MIC, MFirstName, MLastName, Gender, MOffice, MExt, MMobbile, MHomeNo, MSurburb, MBlock, MLevel, MUnit, MCity, MState, MZip, MEmail, MPoint, EntryDate, MUserName, MPassword, MSecurityQuestion, MSecurityAnswer, MDOB)

Table (TableNo, Size, Zone, Status)

ReserTable (ReserTableNo, TableNo*, ResID*)

Reservaton (ResID, ResName, ResICNo, ResContactNo, ResDate, ResTime, StaffID*, MemberID*)

ReserMeal (ResID*, MealNo*, Qty, Subtotal)

ReserCart (RCartNo, RQty, Subtotal, MealNo*, MemberID*)

CreditCardData (CCNo, Name, CardType, ExpireDate)

Payment (PaymentNo, CreditCardNo, MemberCardNo, PMethod, CardType, Date, TotalCharge, ServiceCharge, GovTax, GrandTotal, DelvieryFees, Balance, Deposit, OrderNo*, MemberID*, ResID*)

*** define as Foreign Key**

3.5 Screen Design

3.5.1 Non-Members

Main Page

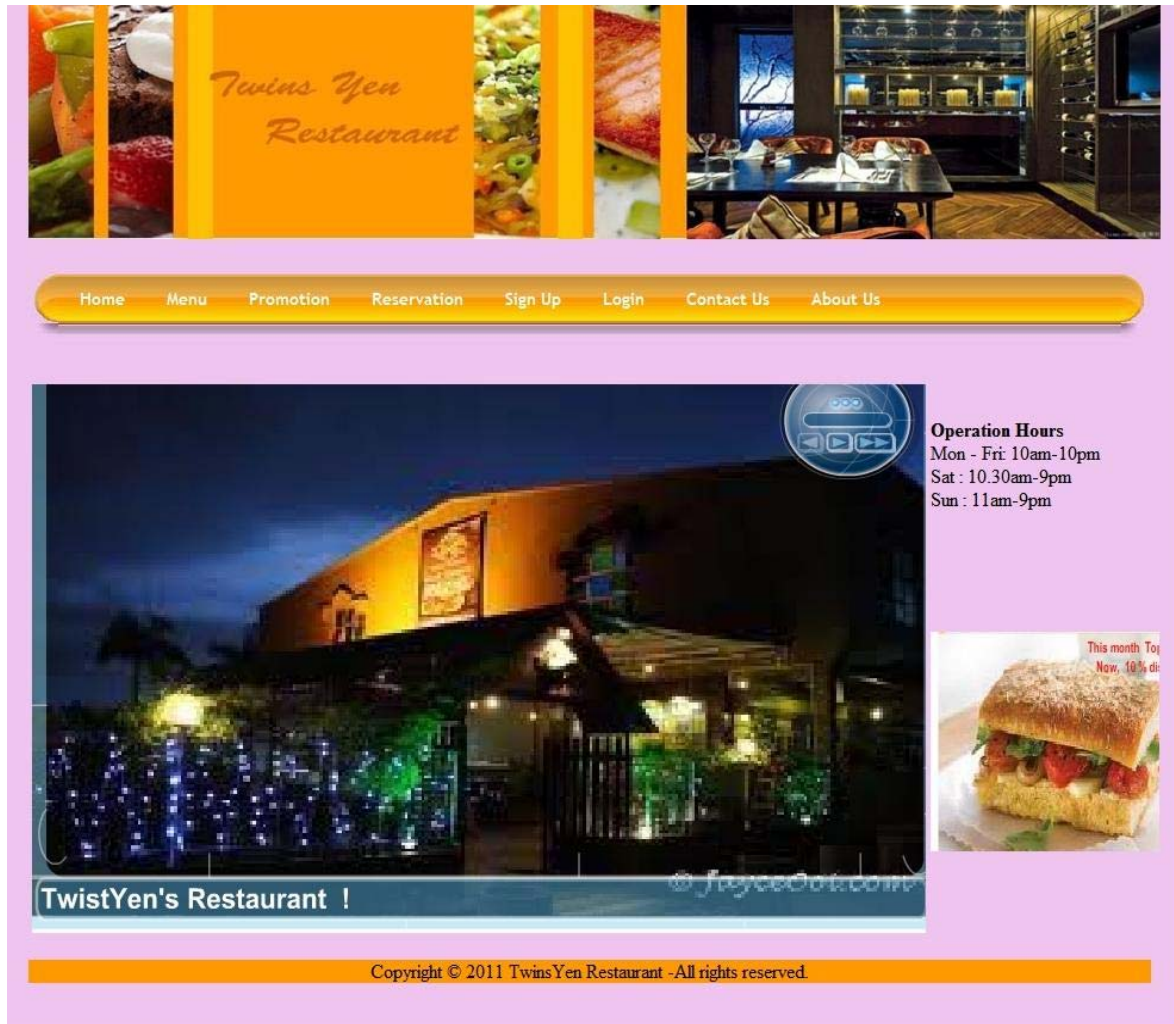


Figure 3.1: Home Page of Restaurant System

This main page is used by all internet users to view our restaurant products and services. This main page has links to meals menu, promotion, reservation information, contact us and about us details. It also allows new members to sign up or login by existing members to make orders or reservation. It displays some images that play with flash and change in a few seconds automatically.

Menu

Twins Yen Restaurant






Home Menu Promotion Reservation Sign Up Login Contact Us About Us

Welcome

Meal Category

Select Meal Category:

Menu

Image	Description
	I0001 Chocolate Icecream coco RM 2.50
	M0001 Fried Rice Fried, Rice RM 5.90
	M0002 Nasi Lemak Rice, Samba, Chicken RM 3.80
	M0003 Mee Goreng Mee RM 2.50
	M0004 Orange Juice Orange, Ais, Water RM 1.80

1 2 Goto To page: Go

Paging

Copyright © 2011 TwinsYen Restaurant - All rights reserved.

Figure 3.2: Menu

This menu page has showed all the meals to customer to have a view. Customer can view meals by select meal category or select page number. There have different meals with its information like meal number, name, description and price. Customer need to register to become member in order to make order.

Promotion

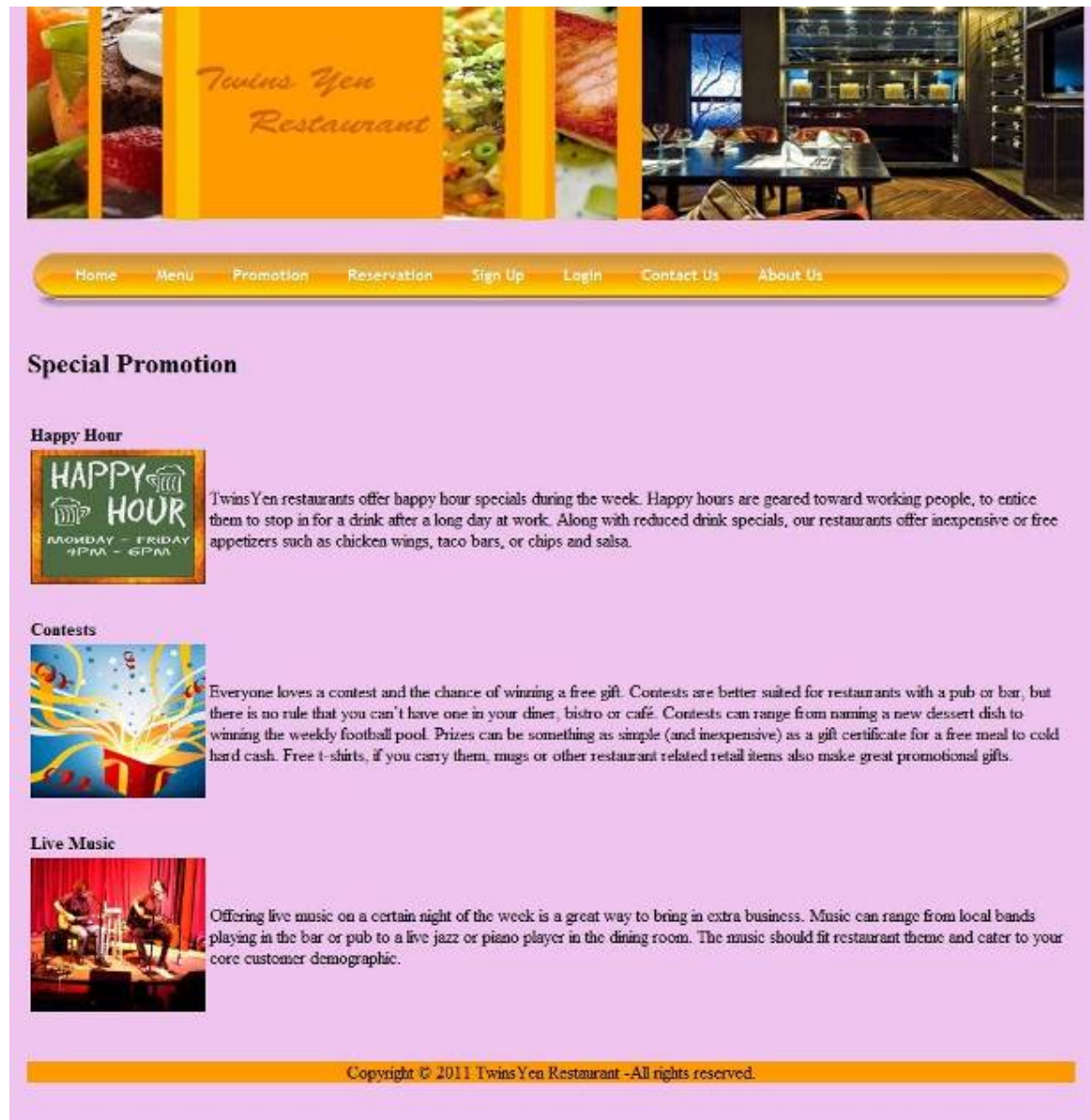


Figure 3.3: Promotion

This web page is show about TwinsYen Restaurant promotion like Happy Hour which has fun with guest and offer appetizer to them. We have also promote with a eating contest for those who eat most in limited time can with our mystery gifts. Every weekend, our restaurant has play for live music, it enable customer Live by Request.

3.5.2 Member

Main Page



Figure 3.4: Members Home Page

This home page will show after member was login. Different people have different access level. After member login, they enable to make order, rate meal, make reservation, view previous orders, top 5 meals, view their profile, give feedback and so on by selecting the menu bar at the top of web page.

Menu

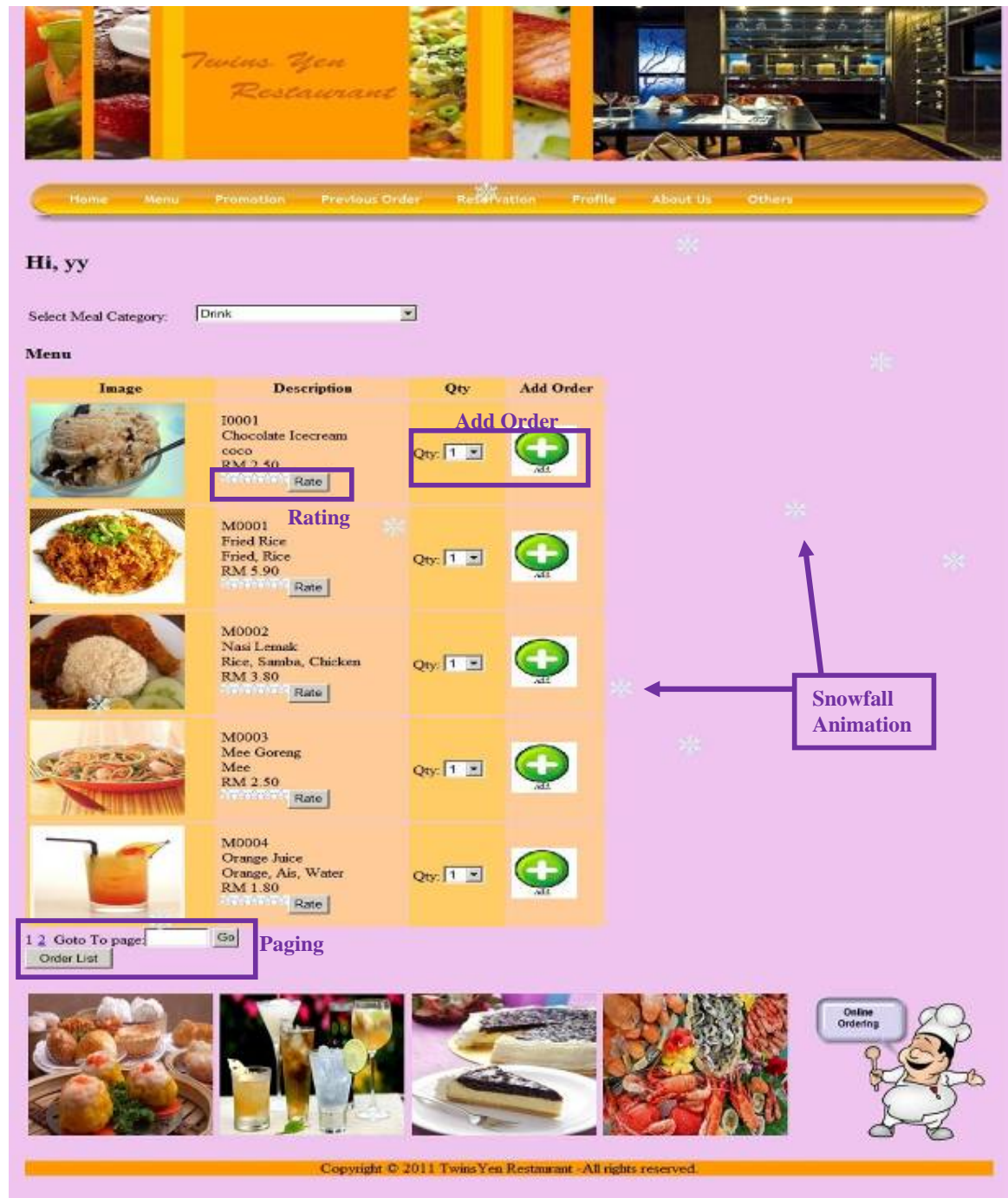


Figure 3.5: Order Meal

This menu page has show all the meals which can view by meal category or page numbering. It allows member to rate the meals and order meals by select meal quantity and add it to order list. Member can view their order by click the order list button. By the way, this menu page has display the snowfall animation to get more attractive for users.

Order List

Twins Yen Restaurant

Home Menu Promotion Previous Order Reservation Profile About Us Others

Order No.: 00002

Order List

MealNo	MealName	Qty	Price(RM)	Subtotal(RM)	Delete
M0003	Mee Goreng	2	2.50	5.00	<input type="checkbox"/>
M0007	Lemon Tea	3	1.90	5.70	<input type="checkbox"/>
M0002	Nasi Lemak	2	3.80	7.60	<input type="checkbox"/>
Grand Total:				RM 18.30	Confirm Delete

Continue Order Clear All Confirm Order

Method

☐ Collect Myself
☐ Delivery

Confirm

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Figure 3.6: Order List

This order list page is show all the meals that ordered by members. They enable to delete meals by check the check box and press confirm delete button. They also can clear all the orders/cancel transaction or continue make order. After make the orders, they need to confirm it. They allow to choose either delivery or take away, if users choose delivery, they may need to fill in for the delivery information, else make the payment directly.

Delivery



Home Menu Promotion Previous Order Reservation Profile About Us Others

Order Success, please choose either take away or delivery your meal.
Order No.: 00003

Order List

MealNo	MealName	Qty	Price(RM)	Subtotal(RM)	Delete
M0003	Mee Goreng	2	2.50	5.00	
M0007	Lemon Tea	3	1.90	5.70	
M0002	Nasi Lemak	2	3.80	7.60	
Grand Total:				RM 18.30	Confirm Delete

Method

☐ Collect Myself
☒ Delivery

Delivery Information

Customer Name: yy Receiver Name: yy
Delivery Date: 15-Mar-2011 Delivery Time: 10:30 AM
Delivery Address: A-1-10GK33550setapakKL
Contact No.: +60129844110 (eg.0123338888)
Message:

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Figure 3.7: Delivery Details

If users choose to deliver meals, they need to fill in delivery details such as receiver name, delivery date, time, address, contact number and so on. This information is needed by staff when delivering the meals. After submitting delivery information, they have to make payment either by cash or credit card.

Complete



Figure 3.8: Complete Transaction

After complete the payment transaction, it will redirect to this web page. It shows a message to inform users that they will receive SMS after the meals is ready to deliver. User can go back to home page by click the button above.

Previous Orders

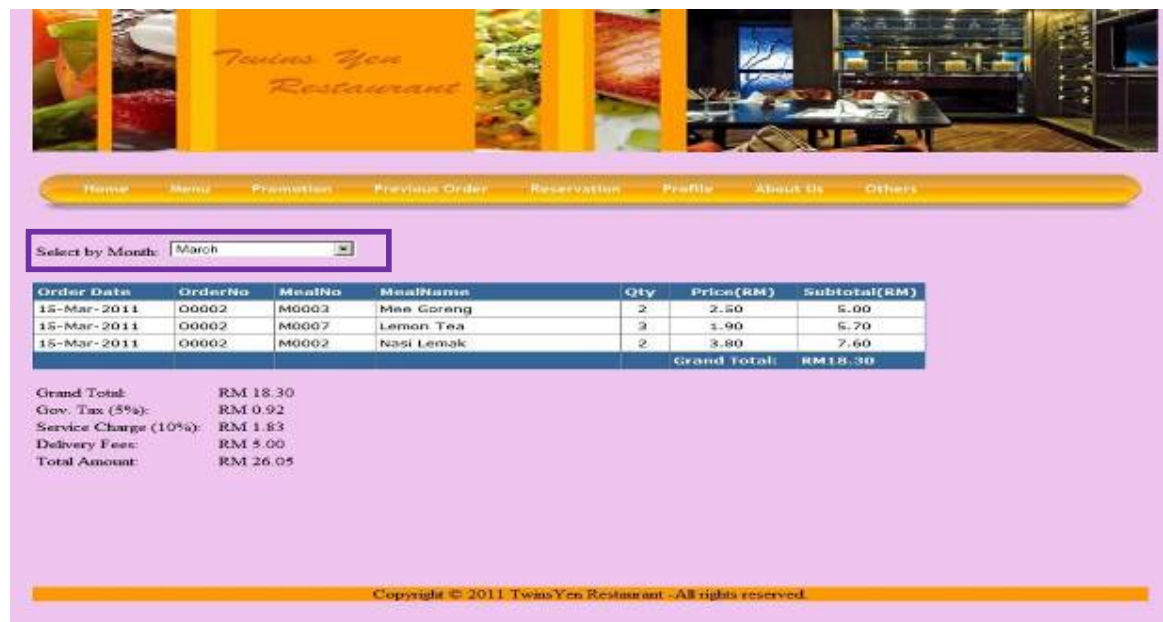


Figure 3.9: Check Previous Orders

This web page allow member to view their previous orders by month. It has displayed order date, meal order details and total consume on the selected month. So that, customers can checks back this consumption history to create an accounting statement.

Top 5 Meals

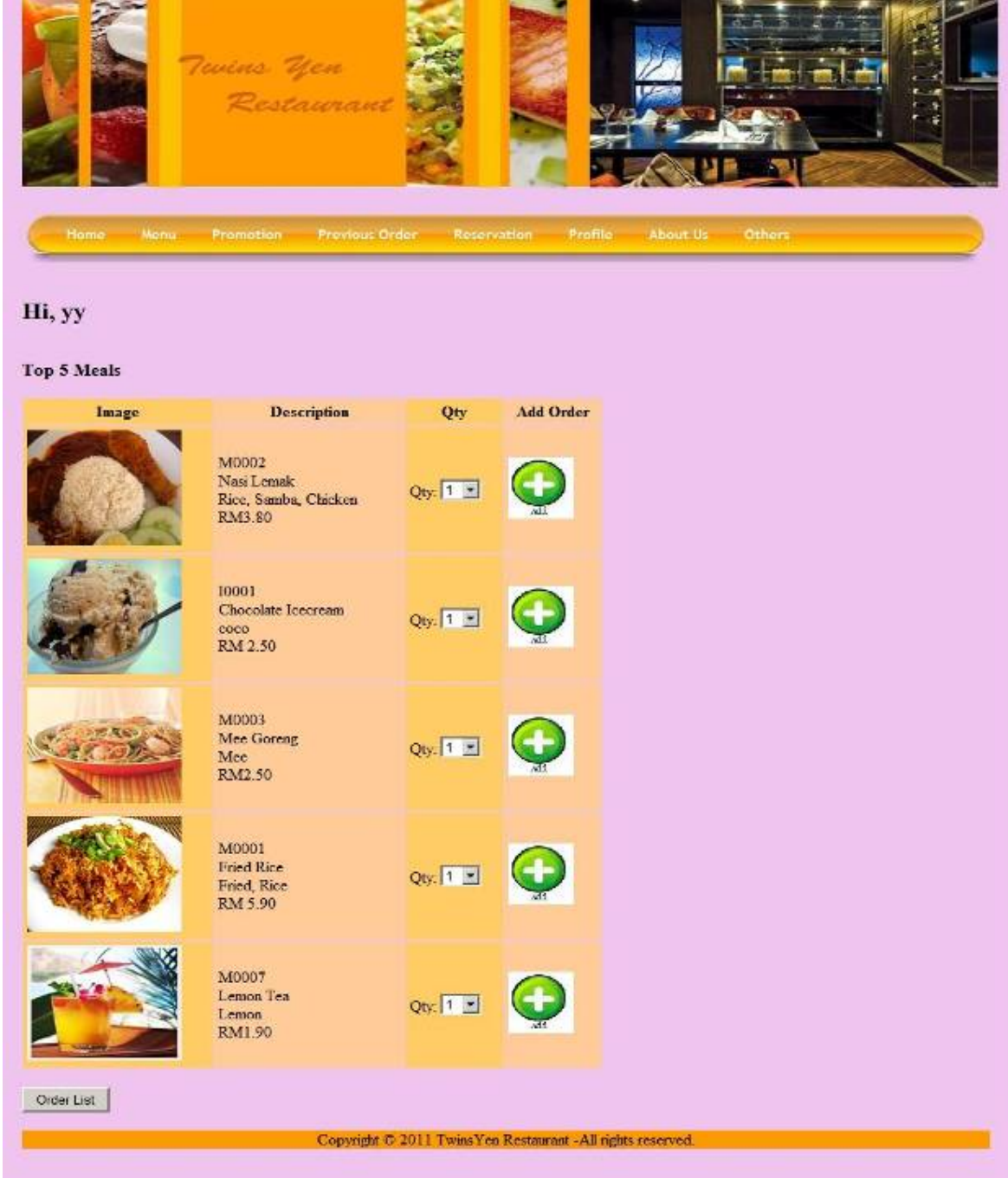












Image	Description	Qty	Add Order
	M0002 Nasi Lemak Rice, Samba, Chicken RM3.80	Qty: 1	
	I0001 Chocolate Icecream coco RM 2.50	Qty: 1	
	M0003 Mee Goreng Mee RM2.50	Qty: 1	
	M0001 Fried Rice Fried, Rice RM 5.90	Qty: 1	
	M0007 Lemon Tea Lemon RM1.90	Qty: 1	

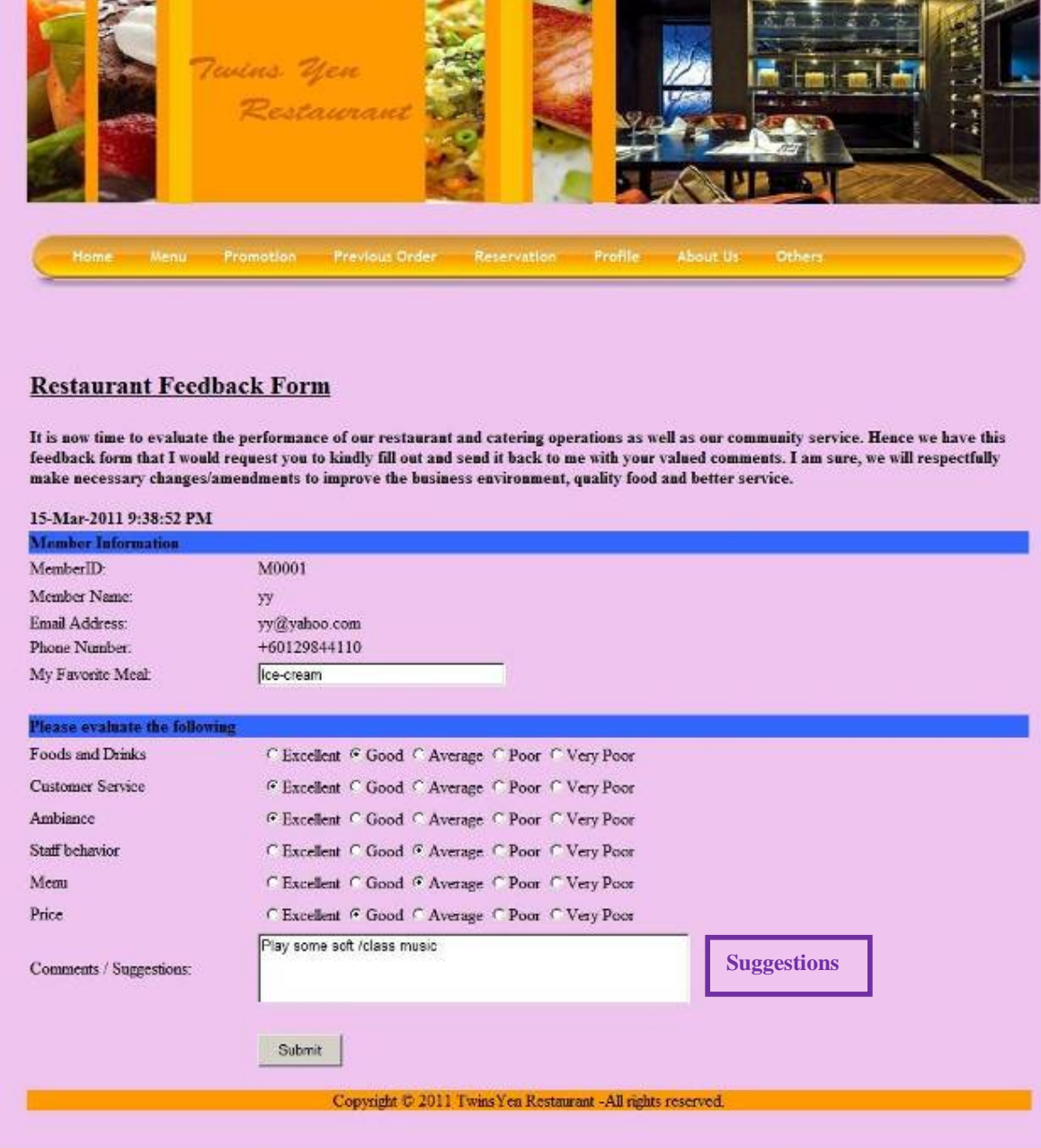
[Order List](#)

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Figure 3.10: Top five meals

This web page is show top 5 of meals which enable customers to have a reference to make orders. The top 5 meals is show by the highest total quantity orders of each meal order by customer. Members can make order directly from this page.

Feedback



Twins Yee Restaurant

Home Menu Promotion Previous Order Reservation Profile About Us Others

Restaurant Feedback Form

It is now time to evaluate the performance of our restaurant and catering operations as well as our community service. Hence we have this feedback form that I would request you to kindly fill out and send it back to me with your valued comments. I am sure, we will respectfully make necessary changes/amendments to improve the business environment, quality food and better service.

15-Mar-2011 9:38:52 PM

Member Information

MemberID: M0001
Member Name: yy
Email Address: yy@yahoo.com
Phone Number: +60129844110
My Favorite Meal: ice-cream

Please evaluate the following

Foods and Drinks	<input type="radio"/> Excellent <input checked="" type="radio"/> Good <input type="radio"/> Average <input type="radio"/> Poor <input type="radio"/> Very Poor
Customer Service	<input checked="" type="radio"/> Excellent <input type="radio"/> Good <input type="radio"/> Average <input type="radio"/> Poor <input type="radio"/> Very Poor
Ambiance	<input checked="" type="radio"/> Excellent <input type="radio"/> Good <input type="radio"/> Average <input type="radio"/> Poor <input type="radio"/> Very Poor
Staff behavior	<input type="radio"/> Excellent <input type="radio"/> Good <input checked="" type="radio"/> Average <input type="radio"/> Poor <input type="radio"/> Very Poor
Menu	<input type="radio"/> Excellent <input type="radio"/> Good <input checked="" type="radio"/> Average <input type="radio"/> Poor <input type="radio"/> Very Poor
Price	<input type="radio"/> Excellent <input checked="" type="radio"/> Good <input type="radio"/> Average <input type="radio"/> Poor <input type="radio"/> Very Poor

Comments / Suggestions:

Suggestions

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Figure 3.11: Feedback Form

This page enables members to provide feedback or suggestions to restaurant for make improvement in quality of food or services. Thus, staff can generate feedback chart according to the feedback provided by customers.

Redemption History

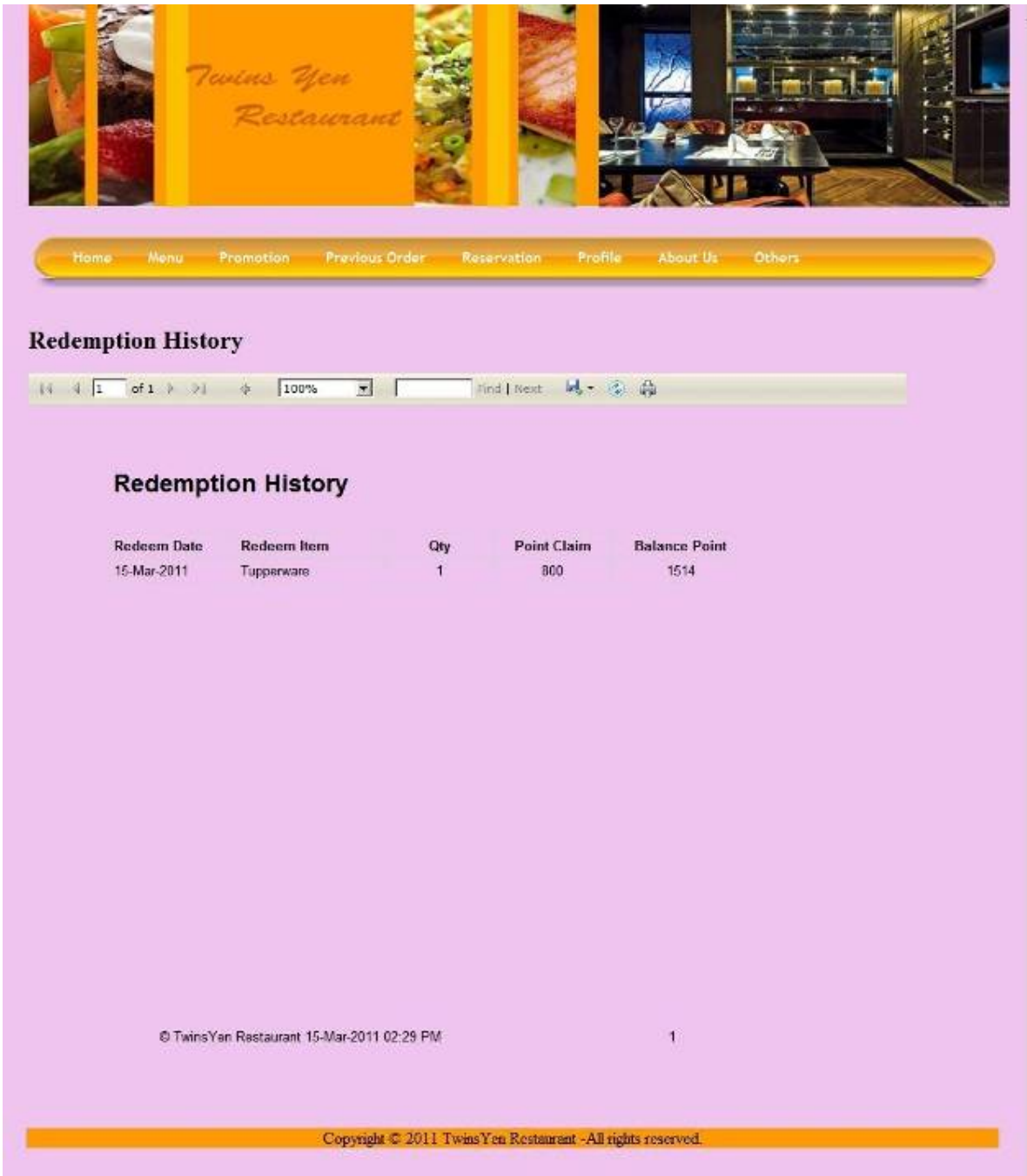


Figure 3.11: Redemption History

This page enables members to view the redemption history that they had make redemption for items before. From there, they can know that when they have make redemption and what they redeem. Besides, they also can view for their balance points.

3.5.3 Staff

Check Order List

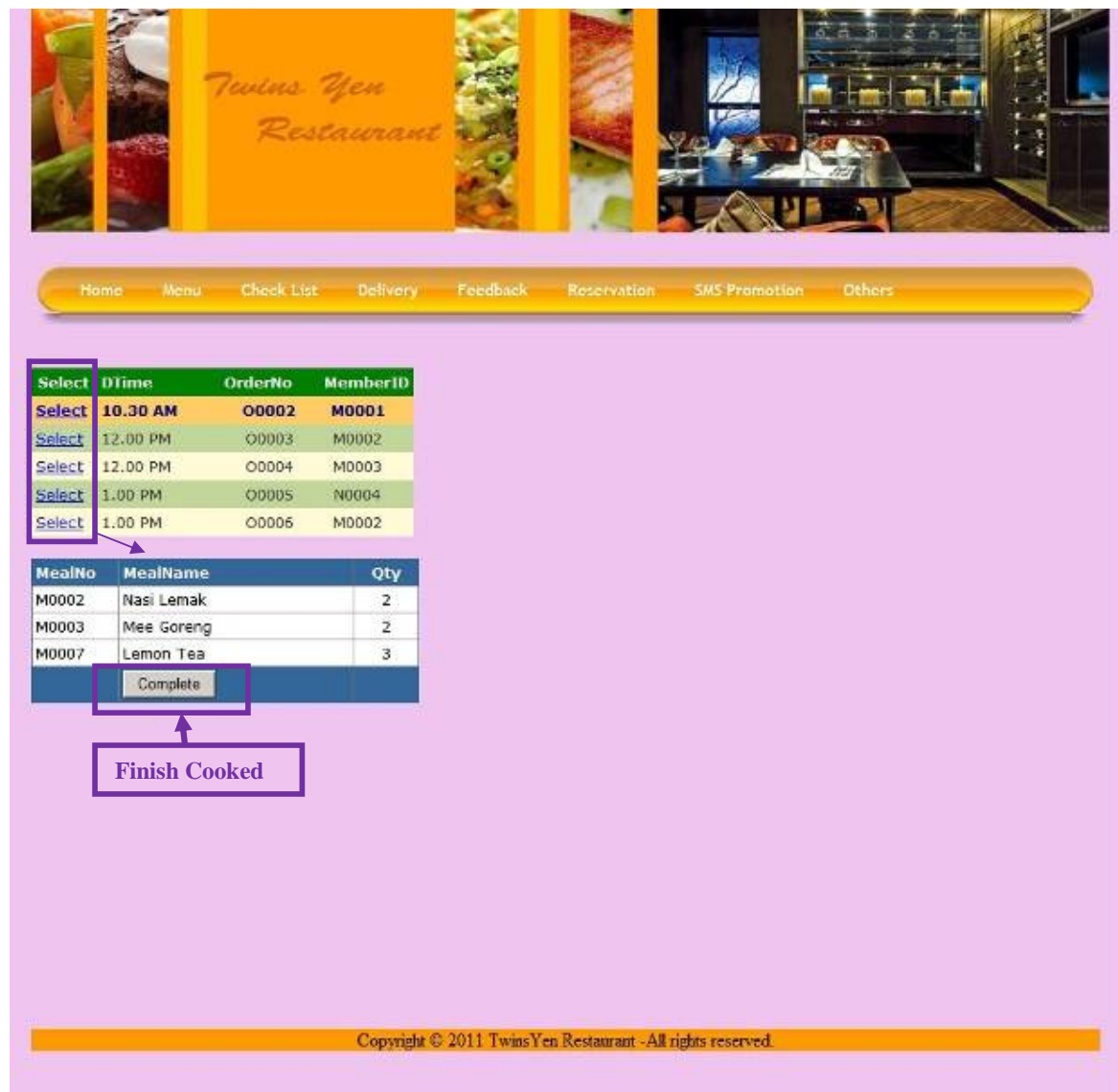


Figure 3.12: Check Order List (Kitchen)

This web page enables staff (kitchen) to view the orders that make by customers. They can prepare the meals based on the delivery time. Staff can view the order details by click the select button, and press complete button after the meals is cooked and send it to customers.

Check Delivery

Twins Yee Restaurant

Home Menu Check List Delivery Feedback Reservation SMS Promotion Others

Delivery

Delivery Information

Select	DTime	MemberID	OrderNo	Receiver	Contact No.	Deliver Address
Select	10.30 AM	M0001	O0002	yy	+60129844110	A'-1-10GK33550setapakKL
Select	12.00 PM	M0002	O0003	LAI	+60167791010	C-2-1GK33550setapakKL
Select	12.00 PM	M0003	O0004	hihi	+60168285566	'-B'-13-2Wangsa5330setapakKL

Meal Order Details

Meal No.	Meal Name	Qty	Price(RM)	Subtotal(RM)
M0002	Nasi Lemak	2	3.80	7.60
M0003	Mee Goreng	2	2.50	5.00
M0007	Lemon Tea	3	1.90	5.70

Payment Details

Grand Total (RM):	18.30
Gov. Tax 5%(RM):	0.92
Service Charge 10% (RM):	1.83
Delivery Fees (RM):	5
Total Amount (RM):	26.05
Total Paid (RM):	0.00
Balance (RM):	0.00

Delivery Information

Deliver by: Alex

Delivery Time: 3:27 PM

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Figure 3.13: Check Delivery Order Meal (Delivery Staff)

This delivery web page shows the delivery, order meals and payment information. Staff can view or check the meal order by click the select button, then the order meal will show at below. It also displays the total amount, balance or payment details. Besides, it enables staff to print delivery information or view map. Delivery staff may select their name and click the delivery button. Then, it will redirect to SMS form.

SMS Delivery Message

The screenshot displays the 'SMS Delivery' interface of the Restaurant Management System. At the top, there is a banner with images of food and the restaurant's interior. Below the banner is a navigation bar with links: Home, Menu, Check List, Delivery, Maintenance, Report, SMS Promotion, Reservation, and Others. The main form area has a light purple background. It contains the following elements:

- Device:** A dropdown menu showing 'SAMSUNG Mobile USB Modem'. A purple box labeled 'Device Connected' points to this dropdown.
- Device Speed:** A dropdown menu showing '9600'.
- Message:** A text area containing the message: 'RMG. Your meal order is ready to deliver. TwinsYen Restaurant'.
- Send SMS Message!:** A button to initiate the SMS sending process.
- Result:** A text box displaying '0: Success'. A purple box labeled 'Sending Result' points to this text box.
- Footer:** A copyright notice: 'Copyright © 2011 TwinsYen Restaurant -All rights reserved.'

Additional text on the right side of the form states: '(only applies to direct ports, i.e. COM1, COM2, etc.)'.

Figure 3.14: SMS Form

This figure shows SMS details when delivery meals. Staff enables to connect modem or mobile device to computer in order to send SMS to customers and inform them the meal is ready to deliver. Staff needed to select device name, speed, enter message and send it. It will display sending result at the label. (eg: Success)

Print Delivery Information

Twins Yen Restaurant

Home Maintenance Report Redeem SMS Promotion Contact Us Others

[Back](#)

15-Mar-2011 4:13:33 PM

Delivery Information

Order No.	Member ID	Customer Name	Contact No.	Address	Total Charge (RM)	Balance (RM)
00002	M0001	yy	+60129844110	A-1-10GK33550setapakKL	26.05	0.00
00003	M0002	LAI	+60167791010	C-2-10K33550setapakKL	14.20	0.00
00004	M0003	hihi	+60160205566	-B-13-2Wangsa5330setapakKL	20.30	0.00

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Figure 3.15: Print Delivery Information (Delivery Staff)

This page is print by staff for their reference whenever they required delivering many meals to customer. They no need to remember or copy down their address or balance when deliver to them.

View Map

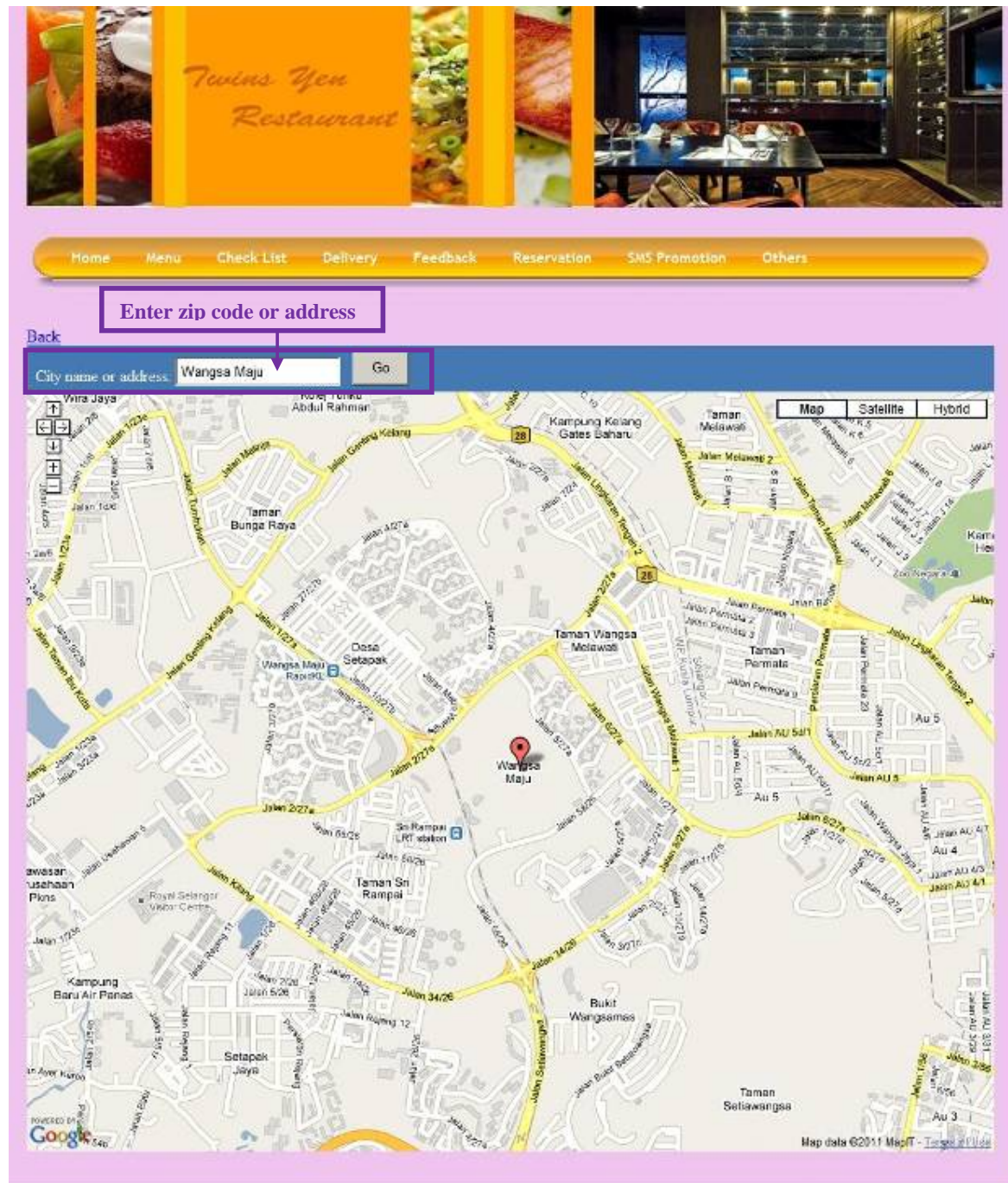
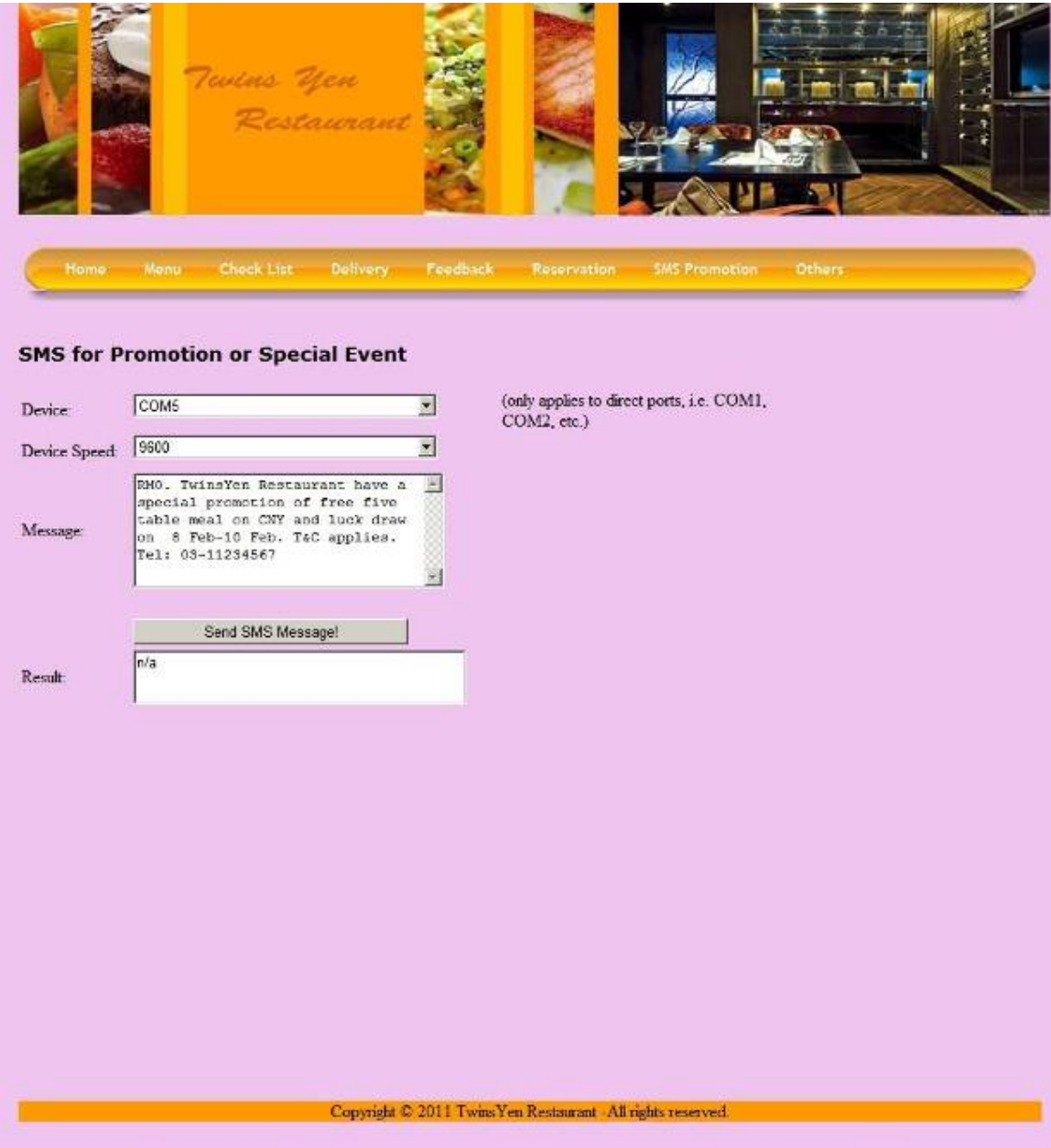


Figure 3.16: Search Delivery Location (Delivery Staff)

This page is enable staff to check for the delivery location by this map. They can search the location by enter zip code or address, then it will shows the search location map after verify the address.

SMS for Promotion or Special Event



The screenshot displays a web application interface for TwinsYen Restaurant. At the top, there is a banner with images of food and the restaurant's interior. Below the banner is a navigation menu with links: Home, Menu, Check List, Delivery, Feedback, Reservation, SMS Promotion, and Others. The main content area is titled "SMS for Promotion or Special Event". It contains several input fields and a button:

- Device:** A dropdown menu with "COM5" selected.
- Device Speed:** A dropdown menu with "9600" selected.
- Message:** A text area containing the message: "RM0. TwinsYen Restaurant have a special promotion of free five table meal on CNY and luck draw on 8 Feb-10 Feb. T&C applies. Tel: 03-11234567".
- Send SMS Message!** A button to submit the message.
- Result:** A text box showing "n/a".

On the right side of the Device and Device Speed fields, there is a note: "(only applies to direct ports, i.e. COM1, COM2, etc.)". At the bottom of the page, there is a copyright notice: "Copyright © 2011 TwinsYen Restaurant All rights reserved."

Figure 3.17: SMS for Promotion/Event

When restaurant conduct some event or promotion, they enable to send message to customer inform them about the promotion and date. Thus, they can improve sales through this method. For sending SMS, user may require to connect modem or mobile deliver with SIM card to computer. Then, select for the device name, speed, enter message and send it. It will show the sending result (eg: success) at the label.

Redemption

Twins Yen Restaurant

Home Menu Check List Delivery Feedback Reservation SMS Promotion Others

Redemption

Redeem Successfully, member's balance point is 1514

MemberID: Search

Member Card NO.: 12345678

Point: 1514

Image	RedeemItem	Point Require	Qty	Redeem
	R0001 Key Chain	300	Qty: <input type="text" value="1"/>	
	R0002 Tupperware	800	Qty: <input type="text" value="1"/>	
	R0003 Free 1 table set meal	2000	Qty: <input type="text" value="1"/>	
	R0004 toy	500	Qty: <input type="text" value="1"/>	
	R0005 shirt	1000	Qty: <input type="text" value="1"/>	

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Figure 3.18: Redemption

This figure shows the redeem items such as key chain, Tupperware, toy, etc which can be redeemed by using points. Staff may need to enter member ID in order to check their point or member card number. They can select redeem quantity and press the redeem button for redemption. It will check whether the point is sufficient for redemption; if the point is sufficient, it enables redemption and updates the member point, else it is not allowed to redeem by displaying an error message.

3.5.4 Admin

Meal Category Maintenance

The screenshot displays the 'Meal Category Maintenance' page of the Twins Yen Restaurant management system. At the top, there is a header banner with the restaurant's name and a navigation bar containing links: Home, Maintenance, Report, Redeem, SMS Promotion, Contact Us, and Others. The main content area features a table listing meal categories with columns for 'MealCateID' and 'MCName'. Each row includes a 'Select' button for editing. The category 'Spaghetti' (ID S2) is highlighted. Below the table, a form shows the details for the selected category: MealCateID: S2, MCName: Spaghetti. At the bottom of this form are buttons for 'Edit', 'Delete', and 'New'. A footer bar at the very bottom contains the copyright notice: 'Copyright © 2011 TwinsYen Restaurant - All rights reserved'.

	MealCateID	MCName
Select	D1	Drink
Select	D2	Dessert
Select	I1	IceCream
Select	N1	Noodles
Select	R1	Rice
Select	S1	Set
Select	S2	Spaghetti
Select	S3	Snack
Select	S4	Soup
Select	S5	Seafoods
Select	S6	aaa

MealCateID	S2
MCName	Spaghetti
<input type="button" value="Edit"/> <input type="button" value="Delete"/> <input type="button" value="New"/>	

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Figure 3.19: Meal Category Maintenance

This figure shows all the meal category, it enable admin to add, delete and edit meal category by select the category. Admin can change the id or name by using this page.

Meal Maintenance



Figure 3.20: Meal Maintenance

This figure shows the meal information for maintenance purpose. Admin enable to upload meals picture, edit, delete and add new meal by select meal category. They also allow to change meal picture by click edit button.

Reports

Monthly Sales Report

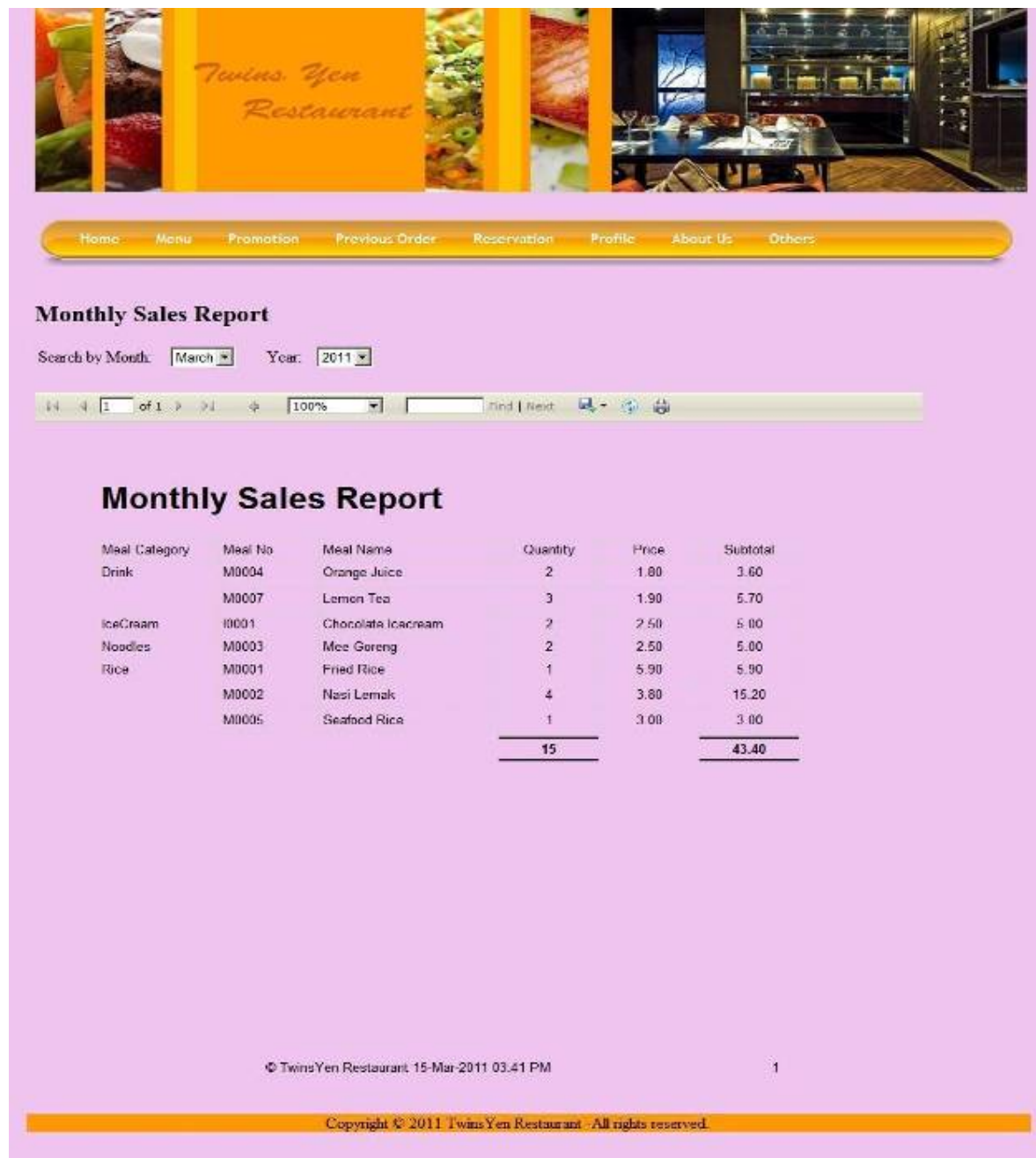


Figure 3.21: Monthly Sales Report

This figure is monthly sales reports that show meal details and total sales of selected month. Admin can use this report to analyse which meal was the highest sales and which month had gained more sales or profits.

Top 5 Monthly Reports



Figure 3.22: Top 5 Monthly Report

This figure is top 5 monthly reports that show the top 5 meals chart and information. The chart is show in quantity orders for each meal. There have display meal number, name, price and quantity order, total price and total quantity.

Feedback Report



Figure 3.23: Feedback Report

The figure shows for the feedback report chart in average values for each criteria. It also displays the number members who give the feedback as below.

Redemption Report



Figure 3.24: Redemption Report

This figure shows the redeem report for that day. It displays member id, redeem items, quantity, and balance point of members for staff to keep track of stock (redeem items).

Rating Report

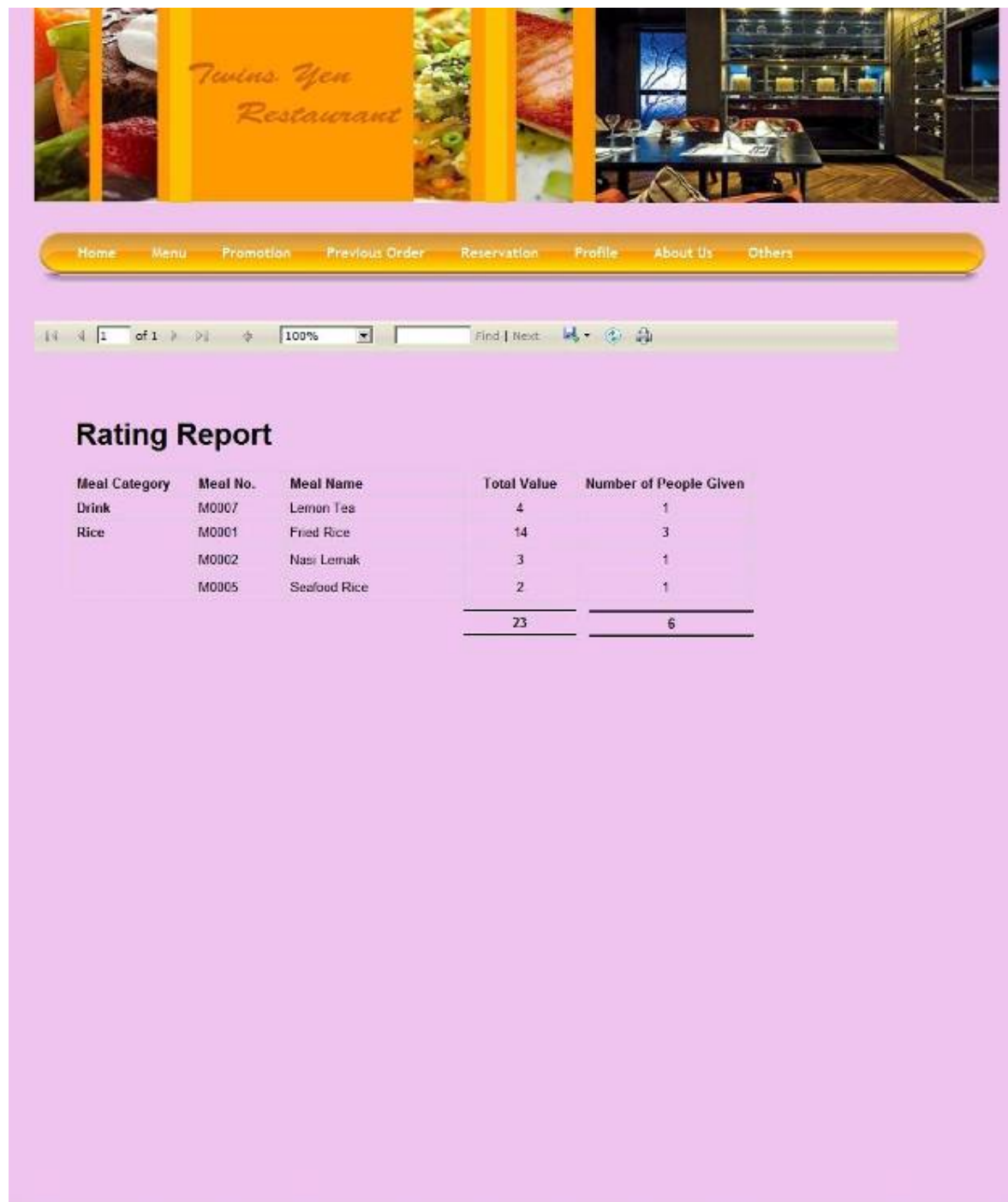


Figure 3.25: Rating Report

This figure shows rating report for the meals. It displays meal number, meal name, total rating values, number of people rate. All of them are display by meal category.

3.6 Summary

This chapter is summaries about class diagram, third normalization form, data dictionary and system design. Class diagram is the database structure that comprised of many classes, interrelationships between classes, operations and attributes of the classes. This class diagram is draw by using IBM RSA software. For the database dictionary was showed all the database table with attributes name, data description, data types, key, default values and so on. Database design is an important step in software development.

Screen design is needed to be carried out or implement the system requirements. Developers must understand well about the system requirements before exploit the system. We should refer to all the diagrams (use case, activity, and sequence diagrams) and class diagram to design the screen or user interface. While design the system, I required to use some tool like Photoshop, paint, and color cop in order to design logo or banner and get a nice, matching background colors.

Chapter 4

Programming

Programming

4.1 Introduction

In this chapter, it discuss about the programming code that used to create this restaurant management system. We are using ASP.NET C# to develop this system because asp.net is easy to learn and code. I have learned many codes that I never learned before like SMS Integration, the animation of snow, Google map, rating and so on. The following is some of the special or complicated programming code.

4.2 Critical Coding Within System

Ajax Calendar

```
<%@ Register Assembly="AjaxControlToolkit" Namespace="AjaxControlToolkit"
TagPrefix="asp" %>
<script type="text/javascript">
    // check the select date and today date
    function checkDate(sender, args) {
        if (sender._selectedDate < new Date()) {
            alert("You cannot select a day earlier than today.");
            sender._selectedDate = new Date();
            // set the date back to the current date
        }
        sender._textbox.set_Value(sender._selectedDate.format(sender._format))
    }
</script>

// Add the ToolkitScriptManager while using AjaxControlToolkit
<asp:ToolkitScriptManager ID="ToolkitScriptManager1" runat="server">
    </asp:ToolkitScriptManager>
    <asp:TextBox ID="txtStartDate" runat="server"></asp:TextBox>
    <asp:Image ID="Image1" runat="server"
ImageUrl="~/Calendar_scheduleHS.png" />
    <asp:CalendarExtender OnClientDateSelectionChanged="checkDate"
ID="CalendarExtender2" Format="dd-MMM-yyyy"
TargetControlID="txtStartDate" PopupButtonID="Image1" runat="server" />
```

Figure 4.1: Sample Code for Ajax Calendar

The calendar is created using Ajax toolkit, when select the image button, it will popup the calendar for user to select for the date and show in the textbox (eg:txtStartDate) in dd-MMM-yyyy format. While used Ajax control toolkit, the register assembly tag and ToolkitScriptManager need to add. Else, the code does not have any function. The function checkdate (javascript) is use to check the selected date is not early than today date, else display message.

Order Meal (Code Behind)

```

protected void LstMeal_SelectedIndexChanging(object sender,
ListViewSelectEventArgs e)
{
    SqlConnection conNwind;
    //Get meal details when member click Add Button
    ListViewItem item = (ListViewItem)LstMeal.Items[e.NewSelectedIndex];

    //Get order qty, mealno, mealname, price that select my member
    DropDownList ddlQty = (DropDownList)item.FindControl("ddlQty");
    Label lMealNo = (Label)item.FindControl("lMealNo");
    Label lMealName = (Label)item.FindControl("lMealName");
    Label lPrice = (Label)item.FindControl("lPrice");

    string connStr =
    ConfigurationManager.ConnectionStrings["ConnectionString"].ConnectionString;
    conNwind = new SqlConnection(connStr);
    conNwind.Open();
    {
        //Insert the Order into Cart Table
        string Sql = "Insert Into Cart(MealNo, MealName, Qty, Price,
Subtotal,
MemberID) values(@mno, @mname, @qty, @price, @sub, @mid)";

        using (SqlCommand dCmd = new SqlCommand(Sql, conNwind))
        {
            dCmd.Parameters.AddWithValue("@mno", lMealNo.Text.Trim());
            dCmd.Parameters.AddWithValue("@mname",
lMealName.Text.Trim());
            dCmd.Parameters.AddWithValue("@qty",
Convert.ToInt32(ddlQty.Text.Trim()));
            dCmd.Parameters.AddWithValue("@price",
Convert.ToDouble(lPrice.Text.Trim()));
            dCmd.Parameters.AddWithValue("@sub",
Convert.ToInt32(ddlQty.Text.Trim()) * Convert.ToDouble(lPrice.Text.Trim()));
            dCmd.Parameters.AddWithValue("@mid",
Session["MemberID"].ToString());

            dCmd.ExecuteNonQuery();
        }
    }

    lblSuccess.Text = "Order Added";
    conNwind.Close();
}

```

Figure 4.2: Sample Code for Order Meal (Code Behind)

This Order Meal code is show in the list view with menu details. When member add order by select the quantity and click Add button, this SelectedIndexChanging function will get the selected meal details (eg: qty, mealno, meal name, price) from list view. Then, insert the meal order into cart table and display the message “order added”.

Order List (GUI)

```

<asp:TemplateField HeaderText="Delete" HeaderStyle-HorizontalAlign="Center"
ItemStyle-
Width="50" ItemStyle-HorizontalAlign="Right">
    <ItemTemplate>
        <asp:CheckBox ID="cbRows" runat="server" />
    </ItemTemplate>
    <FooterTemplate>
        <asp:Button Font-Size="Small" ID="btnMultipleRowDelete"
OnClick="btnMultipleRowDelete_Click" runat="server" Text="Confirm Delete" />
    </FooterTemplate>
</asp:TemplateField>

```

Figure 4.3: Sample Code for GUI Order List**Order List (Code Behind)**

```

protected void btnMultipleRowDelete_Click(object sender, EventArgs e)
{
    string connStr =
ConfigurationManager.ConnectionStrings["ConnectionString"].ConnectionString;
SqlConnection conNwind;
//for loop to check which row in grid view is checked
foreach (GridViewRow row in GridView1.Rows)
{
    CheckBox checkbox1 = (CheckBox)row.FindControl("cbRows");
    {
        if (checkbox1.Checked)
        {
            Label lCartNo = (Label)row.FindControl("lblCartNo");
            {
                conNwind = new SqlConnection(connStr);
                conNwind.Open();
                string Sql = " DELETE FROM Cart WHERE (CartNO = @tcid)";

                using (SqlCommand dCmd = new SqlCommand(Sql, conNwind))
                {
                    dCmd.Parameters.AddWithValue("@tcid",
lCartNo.Text.Trim());
                    dCmd.ExecuteNonQuery();
                }
                conNwind.Close();
            }
        }
    }
}
}
}
}

```

Figure 4.4: Sample Code for Order List (Code Behind)

This code is use for delete the multiple row when member want to delete the meal by check the checkbox and click the confirm button. When member click the Confirm Delete Button, the btnMultipleRowDelete function is called to inspect the checked row and delete it.

View Map (GUI)

```

<script type="text/javascript">
    function getLatLongValues(overlay, point) {
        if (point) {
            document.getElementById("latValue").value = point.lat();
            document.getElementById("lngValue").value = point.lng();
            document.forms[0].submit();
        }
    }

    function setFocus(controlName) {
        document.getElementById(controlName).focus();
    }

    function windowHeight() {
        return (window.height() - 50) + "px";
    }
</script>

<div>
    <div>
        City name or address: <asp:TextBox ID="txtCity" runat="server">Wangsa
        Maju</asp:TextBox>
        <asp:Button ID="btnSearch" runat="server" Text="Go" onclick="btnSearch_Click"
    />
    </div>
    //when client click on the Google Map, it will call function
    getLatLongValues(javascript)
    <cc1:GoogleMap ID="mapControl" runat="server"
    OnClientClick="getLatLongValues"
    Width="100%" Height="740px" Zoom="3" Latitude="10" Longitude="10" Key="KEYHERE">
    </cc1:GoogleMap>
    </div>

    <asp:HiddenField ID="latValue" runat="server" />
    <asp:HiddenField ID="lngValue" runat="server" />

```

Figure 4.5: Sample Code for GUI View Map**View Map (Code Behind)**

```

protected void Page_Load(object sender, EventArgs e)
{
    // enter address store into mapControl.Address
    mapControl.Address = txtCity.Text;
    mapControl.Zoom = 15;

    // add a new search marker
    GoogleMarker marker = new GoogleMarker(mapControl.Address);
    marker.Title = mapControl.Address;
    marker.Clickable = false;
    mapControl.Markers.Add(marker);

    if (IsPostBack)
    {
        CheckForClickLocation();
    }
}

```

```
protected void btnSearch_Click(object sender, EventArgs e)
{
    // First clear old markers since this is a new search
    mapControl.Markers.Clear();

    if (txtCity.Text != "")
    {
        mapControl.Address = txtCity.Text;
        mapControl.Zoom = 15;

        // add a new search marker
        GoogleMarker marker = new GoogleMarker(mapControl.Address);
        marker.Title = mapControl.Address;
        marker.Clickable = false;
        mapControl.Markers.Add(marker);
    }
}

private void CheckForClickLocation()
{
    // clear the marker
    mapControl.Markers.Clear();

    // add new marker only if both hidden fields have a value
    if (latValue.Value != "" && lngValue.Value != "")
    {
        GoogleMarker marker = new
GoogleMarker(Convert.ToDouble(latValue.Value),
Convert.ToDouble(lngValue.Value));
        marker.Title = mapControl.Address;
        marker.Clickable = false;
        mapControl.Markers.Add(marker);

        mapControl.Latitude = marker.Latitude;
        mapControl.Longitude = marker.Longitude;
        mapControl.Zoom = 13;
    }
}
```

Figure 4.6: Sample Code for Search Delivery Location in Map (Code Behind)

This View Map code is show as the Google Map that allows staff to enter the zip code /address to search the delivery location. It checks for the longitude and latitude of Google. They can pan up/down/left/right or zoom in/out the Map, it also can display the map as Satellite or Hybrid.

SMS Delivery (Code Behind)

```
private SmsProtocolGsm objGsmProtocol = new SmsProtocolGsm();
private SmsMessage objSmsMessage = new SmsMessage();
private SmsConstants objConstants = new SmsConstants();

protected void Page_Load(object sender, EventArgs e)
{
    System.Int32 numDeviceCount, 1;
    string strDevice;

    if (!IsPostBack)
    {
        // Fill devices combo
        ctlDeviceSpeed.Items.Clear();
        numDeviceCount = objGsmProtocol.GetDeviceCount();
        for (l = 0; l < numDeviceCount; l++)
        {
            strDevice = objGsmProtocol.GetDevice(l);
            ctlDeviceSpeed.Items.Add(strDevice);
        }
        ctlDeviceSpeed.Items.Add("COM1");
        ctlDeviceSpeed.Items.Add("COM2");
        ctlDeviceSpeed.Items.Add("COM3");
        ctlDeviceSpeed.Items.Add("COM4");
        ctlDeviceSpeed.Items.Add("COM5");
        ctlDeviceSpeed.Items.Add("COM6");
        ctlDeviceSpeed.Items.Add("COM7");
        ctlDeviceSpeed.Items.Add("COM8");
        ctlDeviceSpeed.SelectedIndex = 0;

        // Fill devicespeed combo
        ctlDevices.Items.Clear();
        ctlDevices.Items.Add("Default");
        ctlDevices.Items.Add("1200");
        ctlDevices.Items.Add("2400");
        ctlDevices.Items.Add("4800");
        ctlDevices.Items.Add("9600");
        ctlDevices.Items.Add("19200");
        ctlDevices.Items.Add("38400");
        ctlDevices.Items.Add("57600");
        ctlDevices.Items.Add("115200");
        ctlDevices.SelectedIndex = 0;
    }
}

private void UpdateResult(System.Int32 numResult)
{
    // lblResult will show sending sms result (eg:Success)
    ctlResult.Text = numResult.ToString() + ": " +
objGsmProtocol.GetErrorDescription(numResult);
}
```

```

protected void ctlSendMessage_Click1(object sender, EventArgs e)
{
    object obj;
    // declare sqlConnection
    SqlConnection conNwind2;

    string constr =
ConfigurationManager.ConnectionStrings["ConnectionString"].ConnectionString;
    conNwind2 = new SqlConnection(constr);
    conNwind2.Open(); //Open connection

    SqlDataAdapter myAdapter = new SqlDataAdapter("SELECT CPhoneNo from
Delivery where remark='ready'", conNwind2);

    // instantiate dataset object
    DataSet myData = new DataSet();
    // fill with query results
    myAdapter.Fill(myData, "CPhoneNo");

    // loop thru the dataset (loop for Customer Phone Number, then send to them)
    foreach (DataRow Members in myData.Tables["CPhoneNo"].Rows)
    {
        // Message SettingsctlRecipient.Text
        objSmsMessage.Clear();
        objSmsMessage.Recipient = Members["CPhoneNo"].ToString();
        objSmsMessage.Data = ctlMSG.Text;

        // Device settings
        objGsmProtocol.Device = ctlDeviceSpeed.SelectedItem.ToString();
        if (ctlDevices.SelectedIndex == 0)
            objGsmProtocol.DeviceSpeed = 0;
        else
            objGsmProtocol.DeviceSpeed =
System.Int32.Parse(ctlDevices.SelectedItem.ToString());

        // Send the message !
        obj = objSmsMessage;
        objGsmProtocol.Send(ref obj);
        UpdateResult(objGsmProtocol.LastError); //call UpdateResult function
to show the sending result
    }
}

```

Figure 4.7: Sample Code for SMS

This code is showing the sending SMS to customer to inform that the meal is ready to deliver. Before staff sends the message, they need to connect the modem/mobile device with SIM card to the computer. Then, select the devices used (eg: COM1, COM2, COM3, etc) and the devices speed (eg: 1200, 2400, 4800, 9600, etc), enter the message and click send message. The system will loop to get the customer delivery contact number and send to all the customer who make order with delivery. After sending, it will show the sending result in the label. If the sending result not success, it will display error message to tell about what is the error problem.

Snow Animation

```
<script type="text/javascript">

    //The URL path to the snow image
    var snowsrc = "snow.png"
    // The number of snow to render
    var no = 10;
    // whether snow should disappear after x seconds (0=never):
    var hidesnowtime = 0;
    // how much snow should drop down before fading ("windowheight" or "pageheight")
    var snowdistance = "pageheight";

    //Stop Config
    var ie4up = (document.all) ? 1 : 0;
    var ns6up = (document.getElementById && !document.all) ? 1 : 0;

    function iecompattest() {
        return (document.compatMode && document.compatMode != "BackCompat") ?
document.documentElement : document.body
    }

    var dx, xp, yp;    // coordinate and position variables
    var am, stx, sty;  // amplitude and step variables
    var i, doc_width = 800, doc_height = 600;

    if (ns6up) {
        doc_width = self.innerWidth;
        doc_height = self.innerHeight;
    } else if (ie4up) {
        doc_width = iecompattest().clientWidth;
        doc_height = iecompattest().clientHeight;
    }

    dx = new Array();
    xp = new Array();
    yp = new Array();
    am = new Array();
    stx = new Array();
    sty = new Array();

    snowsrc = (snowsrc.indexOf("dynamicdrive.com") != -1) ? "snow.png" : snowsrc
    for (i = 0; i < no; ++i) {
        dx[i] = 0;                // set coordinate variables
        xp[i] = Math.random() * (doc_width - 50); // set position variables
        yp[i] = Math.random() * doc_height;
        am[i] = Math.random() * 20; // set amplitude variables
        stx[i] = 0.02 + Math.random() / 10; // set step variables
        sty[i] = 0.7 + Math.random(); // set step variables

        if (ie4up || ns6up) {
            if (i == 0) {
                document.write("<div id=\"dot\" + i + \"\" style=\"POSITION:
absolute; Z-INDEX: " + i + "; VISIBILITY: visible; TOP: 15px; LEFT: 15px;\"><a
href=\"http://dynamicdrive.com\"><img src=\"" + snowsrc +
\""border=\"0\"></a></div>");
            }
        }
    }
else {
```

```

        document.write("<div id=\"dot\" + i + \"\" style=\"POSITION: absolute; Z-INDEX: "
+ i + "; VISIBILITY: visible; TOP: 15px; LEFT: 15px;\"><img src=\"" + snowsrc +
    "" border=\"0\"></div>");
    }
}

function snowIE_NS6() { // IE and NS6 main animation function
    doc_width = ns6up ? window.innerWidth - 10 : iecompattest().clientWidth -
10;
    doc_height = (window.innerHeight && snowdistance == "windowheight") ?
window.innerHeight : (ie4up && snowdistance == "windowheight") ?
iecompattest().clientHeight : (ie4up && !window.opera && snowdistance ==
"pageheight") ?
iecompattest().scrollHeight : iecompattest().offsetHeight;

    for (i = 0; i < no; ++i) { // iterate for every dot
        yp[i] += sty[i];
        if (yp[i] > doc_height - 50) {
            xp[i] = Math.random() * (doc_width - am[i] - 30);
            yp[i] = 0;
            stx[i] = 0.02 + Math.random() / 10;
            sty[i] = 0.7 + Math.random();
        }
        dx[i] += stx[i];
        document.getElementById("dot" + i).style.top = yp[i] + "px";
        document.getElementById("dot" + i).style.left = xp[i] + am[i] *
Math.sin(dx[i]) + "px";
    }
    snowtimer = setTimeout("snowIE_NS6()", 10);
}

function hidesnow() {
    if (window.snowtimer) clearTimeout(snowtimer)
    for (i = 0; i < no; i++) document.getElementById("dot" +
i).style.visibility =
    "hidden"
}
if (ie4up || ns6up) {
    snowIE_NS6();
    if (hidesnowtime > 0)
        setTimeout("hidesnow()", hidesnowtime * 1000)
}
</script>

```

Figure 4.8: Sample Code for Snowfall Animation

This code is show the animation of snow falling. For using this code, user needs to insert the snow picture. Enter the number of snow to render, set the coordination, position, amplitude, and step of the variable. Then, do using for loop to iterate the snow. So that, the animation of the snowfall was repeated.

Rating (GUI)

```

<%@ Register Assembly="AjaxControlToolkit" Namespace="AjaxControlToolkit"
TagPrefix="asp" %>

// Add the ToolkitScriptManager while using AjaxControlToolkit
<asp:ToolkitScriptManager ID="ToolkitScriptManager1" runat="server">
    </asp:ToolkitScriptManager>
<asp:UpdatePanel ID="UpdatePanel1" runat="server">
    <contenttemplate>
        // Display the start rate
        <asp:Rating
            ID="Rating1"
            CurrentRating='0'
            MaxRating="5"
            StarCssClass="rating_star"
            FilledStarCssClass="rating_filled"
            EmptyStarCssClass="rating_empty"
            WaitingStarCssClass="rating_empty" OnChanged="Rating1_Changed"
            AutoPostBack="true"
            runat="server" >
        </asp:Rating>

        <asp:Label ID="Label3" runat="server" Font-Size="16px"></asp:Label>
        <asp:Button ID="btnRate" runat="server" CommandArgument="rate"
            CommandName="Rate"
            Text="Rate" />
    </contenttemplate>
</asp:UpdatePanel>

```

Figure 4.9: Sample Code for GUI Rating**Rating (Code Behind)**

```

protected void Rating1_Changed(object sender, AjaxControlToolkit.RatingEventArgs e)
{
    // Get the Star rating value, and store into the session
    Session["Rating"] = e.Value ;
}

protected void LstMeal_OnItemCommand(object sender, ListViewCommandEventArgs e)
{
    // When member select star rating
    if (e.CommandName == "Rate")
    {
        //Get rate Meal No.
        Label lMealNo = (Label)e.Item.FindControl("lMealNo");
        SqlConnection conNwind;
        string connStr =
            ConfigurationManager.ConnectionStrings["ConnectionString"].ConnectionString;
        conNwind = new SqlConnection(connStr);
        conNwind.Open();
    }
}

```

```
//Insert the rating values, mealno, memberid into DB
string Sql = "Insert Into Rating(Rating, MealNo, MemberID,
RatDate)
values(@rate, @mno, @mid,@rdate)";

using (SqlCommand dCmd = new SqlCommand(Sql, conNwind))
{
    dCmd.Parameters.AddWithValue("@rate",
Session["Rating"].ToString());
    dCmd.Parameters.AddWithValue("@mno", lMealNo.Text.Trim());
    dCmd.Parameters.AddWithValue("@mid", Session["MemberID"]);
    dCmd.Parameters.AddWithValue("@rdate",
DateTime.Now.ToShortDateString());

    dCmd.ExecuteNonQuery();
}
}
lblSuccess.Text = "Rate Successfully.";
conNwind.Close();
}
```

Figure 4.10: Sample Code for Rating (Code Behind)

The rating is use the Ajax Toolkit feature, when member click for the rating, it will fill in the star and get the rating value (store in session). If the press Rate button, it will get the meal no. from the list view and insert the rating value, meal number, memberID and date into the rating table.

4.3 Summary

In this chapter, programming development has been discussed in details. There are a lot of problems faced during the system development especially doing the coding for reports. I had done many research and try many different ways to create the reports, finally I get to know a new way to create the reports. Sometime, I encountered problem in understand the coding that search from internet. Thus, I had to do more research in order to get more idea from it. During development system, I had learned many different codes from internet and gained some experienced in using asp.net languages. By the way, I had learned some special codes such like rating, SMS, snow effect, Google map, reports chart, delete multiple rows, calendar and so on.

To ensure the software quality, there was a standard for development team to follow such as coding standard, form design standard and so on. Besides, progress review is done by all the time in order to ensure that development is under control. In addition, Ajax Tools also used in this web application in order to complete some function like rating, validation, message box, etc. Other than that, flash and animation also have build in this system.

When I faced bugs or errors, I had to debugging to find out the errors and fixed it. Otherwise, I needed to check for the whole module. Due to that, system testing is very important task that needed to do it frequently in order to avoid or reduce this kind of problems happened. System testing will be discussed in next chapter.

Chapter 5

Software Testing

Software Testing

5.1 Introduction

Software testing is an important stage for the system in order to make the system or software able to run smoothly and usefulness. There have many type of testing that can be used to test system. Software testing is to verify that all functions are working properly and the overall system performance/objective is well achieved and work fine. The purpose of testing is to reduce and minimize the risk or error of the system. Different system requires different type of software testing.

5.2 Levels of Testing

There are various levels of testing include unit testing, integration testing, system testing, user acceptance and installation testing. Our system should go through all the testing before distribute to the user. The system must pass all these testing to ensure that the system reliability, dependability and maximize the system performance while reduce the system errors. The diagram illustrates levels of testing shown in figures 1.

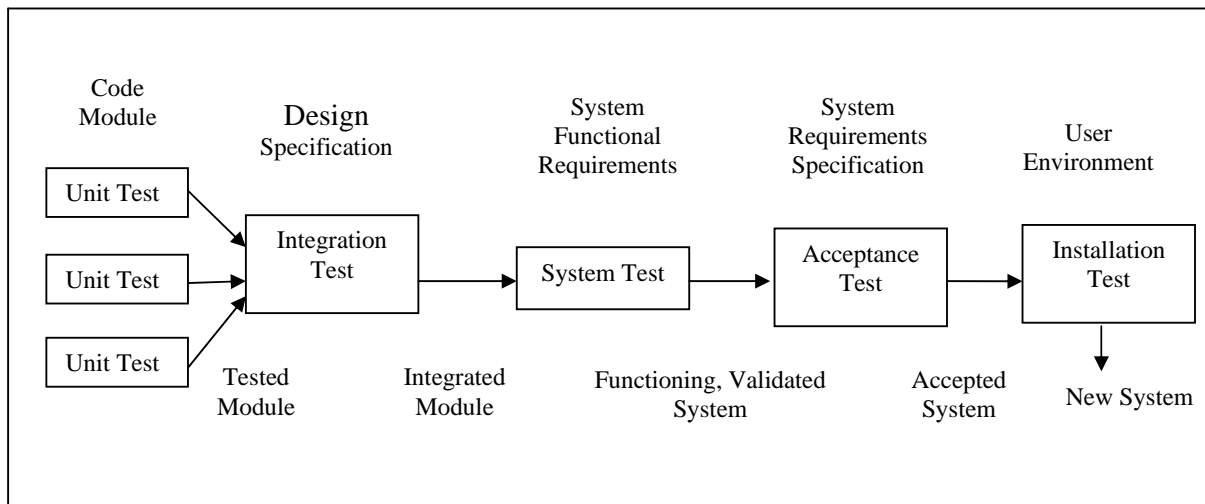


Figure 1: The various levels of testing

Test Technique

System testing of software is testing conducted on a complete, integrated system to evaluate the system compliance with its specified requirements. In order to perform, there are some guidance and technique that we must follow.

5.2.1 Unit Testing

This testing is test particular part and not to test whole system. Unit testing is a method by which units of source code are tested to determine if they are fit for use. A unit is the smallest testable part of an application. Unit tests are written and run by software developers to ensure that code meets its design and behaves as intended. The goal of unit testing is to isolate each part of the program and show that the individual parts are correct. (Wikipedia, 2011) By writing new tests before writing code can helps focus the developer on the problem at hand. (Joomla, 2010) Unit testing can find the error earlier or those deeply-hidden errors which would hardly be found in system testing. Thus, each developer has performed the unit testing during the development phase in order to ensure the system is error and bug free. Each module must go through unit testing in order to find out the error and solve it at this testing stage before it bring to next stage.

5.2.2 Integration Testing

The objective of Integration testing is to make sure that the interaction of two or more components produces results that satisfy functional requirement. (testinggeek, 2011) The integration testing is a software development process which program units are combined and tested as groups in multiple ways. (TechTarget, 2007) The purpose of integration testing is to verify functional, performance, and reliability requirements placed on major design items. (Wikipedia, 2011) It will test after the combination of separate modules in order to identify the bugs and weaknesses in the system. It is important to ensure that it was no any conflict after combination.

5.2.3 System Testing

System testing is very important when all modules combined from different people to verify and assess the system with its requirements. Therefore, system testing must run in order to make sure the logic is still strong and no error occurred. Besides, this testing will check whether it meets all the system requirements and user requirements. The purpose of this test is to evaluate the system's compliance with the specified requirements. System testing is performed on the entire system in the context of System Requirement Specification (SRS). System testing tests not only the design, but also the behavior and even the believed expectations of the customer. It is also intended to test up to and beyond the bounds defined in the software/hardware requirements specification. (Wikipedia, 2011)

5.3.4 User Acceptance Test

User Acceptance testing is final stage of testing before the system release or implementation. Acceptance testing is to demonstrate that the system can be ready to be use to the end user/customer. It tested with the real data in real/simulated environment. The acceptance testing is where product being delivered to customer and then customer execute the acceptance test see whether the expectation of the functionality meet/fulfill their requirements. This testing is go through by test plan and all the test case in the test plan must pass. It must get acceptance and satisfaction from the user before it being implemented to the user.

5.2.5 Installation Testing

Installation testing is a kind of quality assurance work in the software industry that focuses on what customers will need to do to install and set up the new software successfully. The testing process may involve full, partial or upgrades install/uninstall processes. This testing performs by software testing engineer in conjunction with the configuration manager. (Wikipedia, 2011) Installation is the first interaction of user with our product and it is very important to make sure that user does not have any trouble in installing the software. (testinggeek, 2011)

5.3 Test Plan

Login

Test Case	Test Data	Expected Results	Pass/Fail
Validation	To check whether the validation is executed when required field is blank data or invalid.	Display information message	Pass
Verify username, password and access level	To check whether the username, password and access level is match.	Login successful, display main page	Pass
Authorization	To check whether the system will perform authorization when user login.	Display different main page for different access level.	Pass

Order Meal

Test Case	Test Data	Expected Results	Pass/Fail
Search meal	To check whether it display meal for the select category when select the meal category.	Display search result(Meal) in list view	Pass
Add to Order List	To check whether the meal order is added into order list/cart, when click on the Add button.	Meal order insert into database	Pass
Verify input data	To check whether input data has been verified and prevent sql injection.	Display error message	Pass
View Menu	To check whether can display all meal information.	Display all meal information	Pass
Rate Meal	To check whether can rate meal successfully.	Success to rate meal	Pass
View Top 5	To check whether it display top 5 meal	Display Top 5 Meal	Pass

Order List

Test Case	Test Data	Expected Results	Pass/Fail
Display Order List	To check whether the added meal can be displayed.	Added meal orders displayed	Pass
Remove meal order from Order List	To check whether can delete unwanted meal is workable when click on the delete button.	Success removing the meal off the order list/cart.	Pass
Continue Order	To check whether can continue to make order.	Success to go back and continue to make order.	Pass
Cancel Order	To check whether can cancel the order.	Success deleting the order and redirected to main page.	Pass
Confirm Order	To check whether orders are success added into database.	Insert orders into database. Display added success message.	Pass

Delivery

Test Case	Test Data	Expected Results	Pass/Fail
Validate input data	To check whether the validation is executed when the required field is blank data or wrong format.	Display error message	Pass
Edit and validate delivery address	To check whether can edit the default delivery address and input is not blank.	Delivery address is editable and validated	Pass
Validate Delivery Date	To check delivery date is not earlier than today date.	Prompt message box if selected delivery date earlier than today date	Pass
Submit	To check whether delivery details can be added successful.	Successful added delivery information to database.	Pass

Check List

Test Case	Test Data	Expected Results	Pass/Fail
View all orders	To check whether the orders information is display.	Display all the orders information.	Pass
Complete	To check whether meal orders is complete and update the cook status in database.	Meal order is visible after click complete button and updates the cook status in database.	Pass

Delivery Admin

Test Case	Test Data	Expected Results	Pass/Fail
View delivery order list	To check whether the delivery meal order information is display.	Display all the delivery order information	Pass
Verify delivery person	To check which staff is free and available.	Display staff who are free in drop down list	Pass
Print Delivery Information	To check whether the delivery information is display accurately and allow to print.	Staff can print the delivery information for review	Pass
Verify Device Connect (Mobile device)	To verify the mobile device after connect to mobile with SIM card.	Display the device name in the drop down list	Pass
Enter SMS information	To check whether the SMS details is valid.	Display error message if SMS details is invalid.	Pass
Send SMS	To check whether successful to send SMS to customer.	Display “success” on sending result label	Pass
Update Delivery Status	To check whether update delivery status in database.	Successful updated delivery status.	Pass
View Map	To check whether can search delivery location by enter zip code/address.	Display searching location and allow to zoom in and out of Map.	Pass

Redemption

Test Case	Test Data	Expected Results	Pass/Fail
Validation	To check whether the validation is executed when the required field is blank data or wrong data.	Display error message	Pass
Verify	To check whether the member ID is valid.	Display error message if memberID invalid, display member details if it is valid.	Pass
Search	To check whether can search member points by member ID.	Display member point, member card number.	Pass
View All Redeem Items	To check whether can display all the redeem details.	Display all redeems details.	Pass
Check member points	To check whether member points is sufficient for redemption.	Display error message if member points is not sufficient. Add redeem if member points is sufficient when staff press Redeem button.	Pass
Add	To check whether the redeem item information is added into database.	Successful redeemed and added to database.	Pass
Update Point	To check whether can update the member point after redeem.	Successful updated member points.	Pass

Feedback

Test Case	Test Data	Expected Results	Pass/Fail
Validation	To check whether the validation is executed when the required field is blank data or wrong data.	Display error message	Pass
Add/Submit	To check whether the feedback can be added into database.	Successful submit feedback details /added in database.	Pass

Feedback Admin

Test Case	Test Data	Expected Results	Pass/Fail
Generate Chart/Report	To check whether feedback report is generate accurately.	Chart/report display accurate data.	Pass
Print	To check whether the report will print.	System print report/chart	Pass

Meal Category Maintenance

Test Case	Test Data	Expected Results	Pass/Fail
View all category	To check whether can display all the meal category.	Display all meal category	Pass
Add	To check whether meal category can successful added into database.	Successful Added and allow to add new meal under the meal category.	Pass
Update	To check whether the meal category can be successful edit.	Successful Updated	Pass
Delete	To check whether the meal category can be successful delete.	Successful deleted, and all the meal under that category also deleted.	Pass

Meal Maintenance

Test Case	Test Data	Expected Results	Pass/Fail
Validation	To check whether the validation is executed when the required field is blank data or invalid.	Display error message	Pass
View all meal	To check whether can display all the meal information	Display all meal details	Pass
Search	To check whether can search the meal by category	Display meal details when select meal category	Pass
Add	To check whether meal can successful added into database	Successful Added	Pass

Update	To check whether the meal details can be successful edit	Successful Updated	Pass
Delete	To check whether the meal can be successful delete	Successful Deleted	Pass

Generate Report

Test Case	Test Data	Expected Results	Pass/Fail
Display report	To check whether the report will generate accurately according to the selected date.	Report displayed the correct details	Pass
Display chart	To check whether the chart is show the correct data	Chart display the correct data	Pass
Print Report	To check whether the report will print	System print the report	Pass

5.4 Summary

Software testing is an important stage to ensure that the software is free of bugs. The purpose of testing is to ensure that the system will propose require function correctly, accurately, efficiency and effectively. There have various way to testing our system in order to make sure the system is dependability. During the process of develop this system, I had go through all the testing such as unit testing, integration testing, system testing, and user acceptance testing to test our software or system.

A good system must carry out cost-effective and quality software testing. If error can be detected at testing stage, unnecessary cost can be eliminated such as maintenance cost. During this stage, I have faced problems on how to carry out an effective testing. Besides, when we carry out testing, we have detected/discovered errors or bugs. So, we need to trace the bugs and debug. Most of the time, we will found error after we combine the system. So, we must plan probably before we start the system development and communication also important in a group team.

Chapter 6

Conclusion

Conclusion

6.1 Introduction

This chapter will discuss about evaluation against the project objectives, project management issues, methodology, critical evaluation of project, strength and weakness of project, future improvement of the project and so on.

6.2 Seminar Linked to Project

I have fully applied my seminar in this project because my seminar is doing about the asp.net. During the project development, I have learned and understand a lot of code that I have not learn it before. I have improved my coding knowledge by doing the research and encountered to different problems. When I faced problems or the module cannot function, I will tried different ways and online search to find out the solution, from this I can learn more and gain more experience about it. Therefore, when I faced the same error on next time, I will know how to solve it. One thing I agree that asp.net is more easy to learn compare to others programming languages. While doing this project, I had perceived that almost of the whole project is just depend on the sql query.

6.3 Justification of choice of tools, methodology

In this project, Visual Studio 2010 had been used to develop the whole project. This is because Visual Studio 2010 had been proved of its stability, easy to use and most of the tools had been provided and it can support many programming language. For database development, we were using Microsoft SQL Server 2008 to create our database because it is easy to use in Visual Studio 2010. Another software tools used to draw the Gantt Chart was using Microsoft Office Project 2007 and draw the diagrams (Use Case, Activity, Sequence, Collaboration) was using Rational Software Architecture (RSA). SDLC project phases had been used to develop a formal software module. Besides, we also used adobe flash to create flash, platform design and so on.

6.4 Evaluation against the Project Objectives

The project objectives should be defined clearly before the project starts and agree upon. By using Restaurant Management System, user can carry out or manage their operation easier and effectiveness. It is user friendly and convenience systems for user or customer to make order through online without go out or call upon. It also can easy to get customer suggestion or feedback and understand customer preferences. This system is able to provide accurate and up-to-date information for decision making purpose. Security is provided to prevent unauthorized user from accessing to the system.

Compared to current system, a lot of paper works need to be done and sometime result in lots of document due to improper management. This new system also enhance with more reliable, usability, maintainability and dependability. Furthermore, this web application is available anytime, anywhere and the users are able to surf to the web site. It is able to provide better customer service in transaction and easy to keep track management. The most important is the new system can streamline all the works by a simple click. Operation such like add, edit, delete, print data is become much easier and convenient ever. This project has provided a system with complete functionality which meet the user requirements and project objectives which is to ensure a sustainable environment.

6.5 Project Management Issues

The entire project is under control and managed with minimum delay or out of schedule. Besides managing this project, there was some of the course assignments needed to be handled. In the period of industry training, I have tried to improve and learn for coding. This is because while semester one, our lecture just teach the basic of internet programming, so I may need to improve and learned more about it.

In this project, there have various problems being faced within the team work. It is hard to manage the time or find for the free period for team member to discuss and develop the project together. Sometime, the team member back to hometown, prepare for exam and so on. By the way, team cooperation is important too. Different member has different perspective or

opinion. Sometime I had faced the most difficulty is to reach an agreement on a certain issue such as interface design, functionality. It is difficult to get a consensus, so I need to explain to my partner why I doing it. Furthermore, I also need to plan well and give opinion for my group member about her task, and make sure the project is under control.

At the same time, project time line may be a problem too because some of the task may required more time to find solution and solve it. It will cause others to be delay and may not be able to follow the project schedule that had been set before. The lesson learnt from the project development is the ways to manage the project in flexible ways such as the ways of solve problems, searching for codes and so on. Time management is very important to develop a system. Thus, we need to manage our time well in future development in order to avoid project delay.

6.6 Evaluation of Project

Strength

- **Attractive.** The system has Flash, background music, and animation in order to attract customer to view or use our system.
- **User friendliness.** Consistent user-interfaces enabled the application easy to use, look tidy, and indirectly it will increase customer satisfactory on using this system.
- **Validation.** System design provides validation features to minimize the invalid input format such as IC No., contact no. Errors rates had been reduced because there are various validations being done to ensure that the information being stored to database is correct and match with the database attributes data type.
- **Unique ID.** The system able to auto generates unique ID for some module that required this function such as member registration, reservation, etc.
- **Security.** Security objectives had been done by using login ID for each staffs and members. Although it may not able to fully enhancing the security purpose, but it can prevent unauthorized login. For example, normal staff is not allowed to view report except manager or admin due to reports is considered as private and confidential.
- **Performance.** System performance is considered good because of response time of user request depend on the internet connection speed.

- **Message Box.** The system has less confusion because it locks unnecessary functions and hides unnecessary information and show only available actions for user. The system also consists less controls which cause the user confuses which to choose to perform next action. Error message, warning message and information message will given on necessary part to lead user to perform the function.
- **Special Feature.** The system also provide special feature like SMS promotion and platform design that allow user to make design and decoration.

Weaknesses

- **Design.** The design of the user interface can be improve
- **Report.** Report Title should display by selected month
- **Special Information.** The system can send email or provide some special information like healthy tip or latest new for customers. So that, customer can knows more about the healthy knowledge.

6.7 Suggestions for Future Improvement

There is still got limitation on the project that had developed. The project can be improved for future by:

- **Enlarge Image.** When customer click the meal image, it will show the enlarge image.
- **Multiple languages.** The system in future may support multiple languages such as Chinese, Japan. The languages can be changed according to user preferences and as they desired.
- **Rating Chart.** Besides that, the rating also can improve by show that rating chart when user point to the rating meal.
- **Advance Search.** The project can enhance by provide the advance search for staff and customer which allow them to search for particular keyword.
- **Advertisement.** Apart from that, it can be upload the advertisement by advertiser and the advertisement will show dynamic which will link to the advertiser's company.
- **Encrypted password.** The security password can be enhancing by encrypted password to prevent password from being stolen.

- **Entertainment.** In addition, it can add in some problems in daily life (general knowledge) or games to allow people to have some recreations or entertainment.
- **Video.** Add in some video to advertise our restaurant or video that teaches us how to cook.
- **Forum.** Except this, adding a forum to let user to have a discussion about our meal or others.

As conclude, I like to try to create and add in a special function because I will be very happy when I success to do it. Thus, in the future, there will be a lot of mitigation and enhancement to do in order to improve the system.

6.8 Personal Reflection

Final Year Project is the most challenging project in my syllabus of my course. It enables the application of what has been learnt throughout this few years of our study apply in a single project. Since this is final year project, so I need to put more effort and able to apply the theories, methodologies, concepts, skill of development and so on in this project.

At start, I had tried to find and get more information and do research from internet in order to understand more about my project scope and get some idea from there. I had faced many problems while doing this project. Therefore, I always solve my problem by Google search to find the solution by myself. I had also borrowed references book from library for more coding information. Sometime, it is take time to do testing, research and understand the code that search from internet. It is because some of the functions that are needed in this system while I was totally lack of experience of this area. Also, the report generate was taken me a lot of time to do research because I was not do crystal report with asp.net and VS2010 before. When I faced errors or bugs, I always solve it by debugging and testing the validation.

I always keep track the planning and re-manage the planning when there are problems encountered. I like to test and create a special feature such like animation, this is because I will feel gratification once I successful to make it. I will learn other special thing that I interested like flash in future.

Team work is also important in order to make mutual goal released. At start, I worried that I cannot collaborate well with my partner. This is because in my mind, I may need to form a tacit understanding with her in order to make the development perform smoothly. I have to ask for the progress frequently and make sure everything goes as planned. Besides, I had taken long time to combine the system. After combining the project, I needed to test all the module and make sure it is workable. Sometime, I feel suffer in give consideration to many things but I have to try my best to finish it and do it well.

The overall planning, analysis, design, programming and testing of the Restaurant Management System took a lot of time to proceed even I had been met many problem and keep modified. During the process of development, I had learned more especially in coding. Many software such as Microsoft Office Project 2007, Microsoft SQL Server 2008, IBM Rational Software Architect, Microsoft Visual Studio 2010 and so on.

From project planning stage until software testing stage, time management is an important thing that needs to give attention for develops a system. Time allocated for every stage must be planned carefully in order to meet the project deadline. We should always refer and follow the project schedule (Gantt chart) to avoid project delay.

Finally, I had completed my final year project and my system works fine during testing stages by supervisor and moderator. This is a valuable experience for me to have an opportunity to develop this project before expose to the real IT environment. I am very appreciate supervisor because she always spend time to advice us, give us suggestion even scold us. Actually I always very worry while going to meet with her but she always make me feel at ease after I meet her. I also want to say sorry to her because sometime I disappointed to her. Lastly, I am wholeheartedly thankful to her for helping us in this final year project and seminar.

6.9 Summary

After the project evaluation has been carried out, I able to understand my project strengths and weaknesses. Besides I also learnt that time management is important in order to create a quality system and meet deadline. Team work also cannot be neglect in development system. This system can have future improvement to make a perfect software system.

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Appendices

Questionnaires

(A) Your Observation

1. Do you satisfy the current restaurant window application system?

☐ Yes ☐ No

2. Please briefly list out the main step to help a customer to register.

3. The time spent to help a customer to register with this system?

☐ less than 2min ☐ between 2min to 5min
☐ between 5min to 10min ☐ more than 10min

4. Is the current restaurant window based system efficiency to use?

☐ Yes ☐ No

5. The time you spent for learnt this system?

☐ Within 6months ☐ 6months to 1 year
☐ 1year to 2years ☐ 2years to 3 years

6. Do you think the user interface of restaurant window based system is user-friendly?

☐ Yes ☐ No

7. How frequent errors occur when you using the system in 1 week?

☐ 1-3 errors ☐ 4-6errors ☐ 7-9errors ☐ more than 10errors

8. What types of errors do you face most often on using this system?

- ☐ reading error ☐ storing error ☐ viewing error
☐ modifying error ☐ no idea

9. When an error occurs, what will you see on the screen?

(B) Your Suggestions

1. What improvement do you expect if the current system were to be redesign?

- ☐ better data consistency ☐ better user interface
☐ faster processing speed ☐ simplified way of registration
☐ other, _____

2. If current system were to be redesign, what function would you like to recommend integrating into new system?

Interview Questions

1. What problems do you face when this restaurant system operates?
2. Will this restaurant system develop errors and what are the errors occur during this system usually?
3. Normally, when the errors occur, what steps will you take to solve them?
4. During the guests are doing enrolment, if they found it have some mistake from information in the order section. How do you solve the problem?
5. What are the features have including on this restaurant system?
6. How long does the restaurant system takes to do a registration?
7. How does the system operate? Can you describe the steps of operating of this restaurant system?
8. What is the user interface design of this restaurant system?
9. Is the system user friendly? Why?
10. What functions do you think you need to add on this current system use to become more efficiency on work? Please give some recommendation.
11. Do you have any comment about this current use online ordering system in the restaurant?

Pizza Hut Online Ordering

The screenshot displays the Pizza Hut Malaysia website's login and registration interface. At the top, a navigation bar includes the Pizza Hut logo and a 'Welcome to Pizza Hut' message. Below this, a horizontal menu shows five steps: STEP 1 LOGIN, STEP 2 ORDER, STEP 3 VIEW ORDER, STEP 4 CHECKOUT, and STEP 5 SUBMIT. The main content area is divided into two sections: 'Existing member? Login and start ordering online!' and 'First time ordering from Pizza Hut?'. The 'LOGIN' section features fields for 'Username:' and 'Password:', with 'Delivery' and 'Pickup' buttons below. A 'Forgotten Password' link is also present. The 'REGISTRATION' section has a 'Register' button. At the bottom, links for 'Frequently Asked Questions', 'Terms & Conditions', and 'Privacy Policy' are visible.

Figure 8.1: Login Form

The screenshot displays the Pizza Hut Malaysia website's delivery registration form. The form is titled 'DELIVERY REGISTRATION' and 'Step 2 - Registration Information'. It is divided into two main sections: 'PERSONAL INFORMATION' and 'PIZZA HUT ACCOUNT INFORMATION'. The 'PERSONAL INFORMATION' section includes fields for 'First Name:', 'Last Name:', 'E-mail:', 'Verify E-mail:', 'Birthday:' (with 'Day', 'Month', and 'Year' dropdowns), 'Telephone/Mobile:' (with 'ext.' dropdowns), and 'We will deliver your order to' (with 'Address:', 'Street:', 'State:', 'PostCode:', and 'Comment:' fields). An 'Address Search' button is located next to the 'Address:' field. The 'PIZZA HUT ACCOUNT INFORMATION' section includes fields for 'Username:', 'Password:', and 'Confirm Password:', with a 'Note: 6-15 Characters maximum' for each. A checkbox for 'Would you like to receive Pizza Hut's latest offer / newsletter?' is also present. At the bottom, there are buttons for 'Need Help Registering?', 'Register', and 'Cancel'. Links for 'Frequently Asked Questions', 'Terms & Conditions', and 'Privacy Policy' are visible at the bottom right.

Figure 8.2: Registration Form

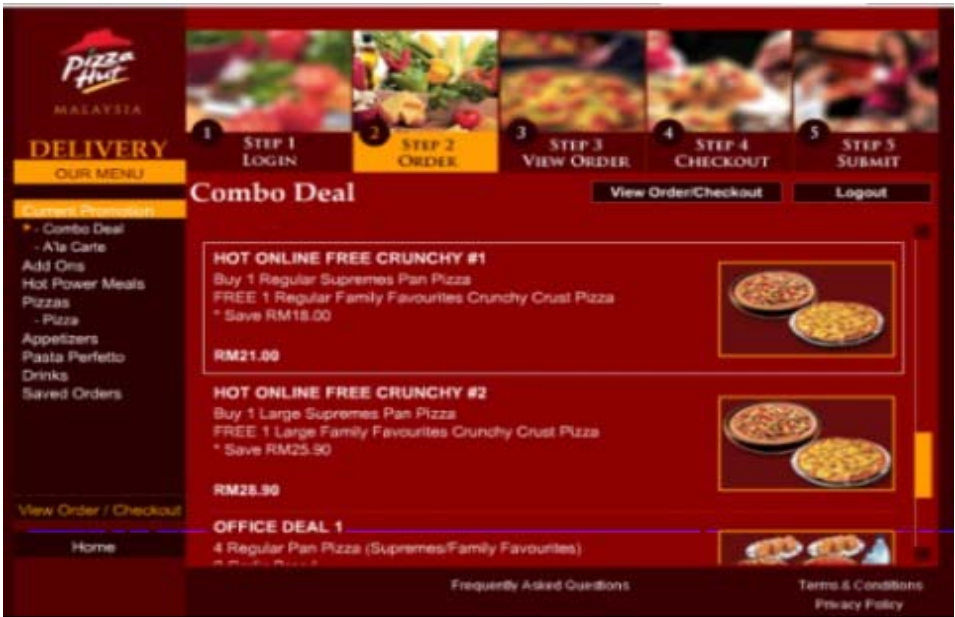


Figure 8.3: View Menu and Add Orders



Figure 8.4: View Orders

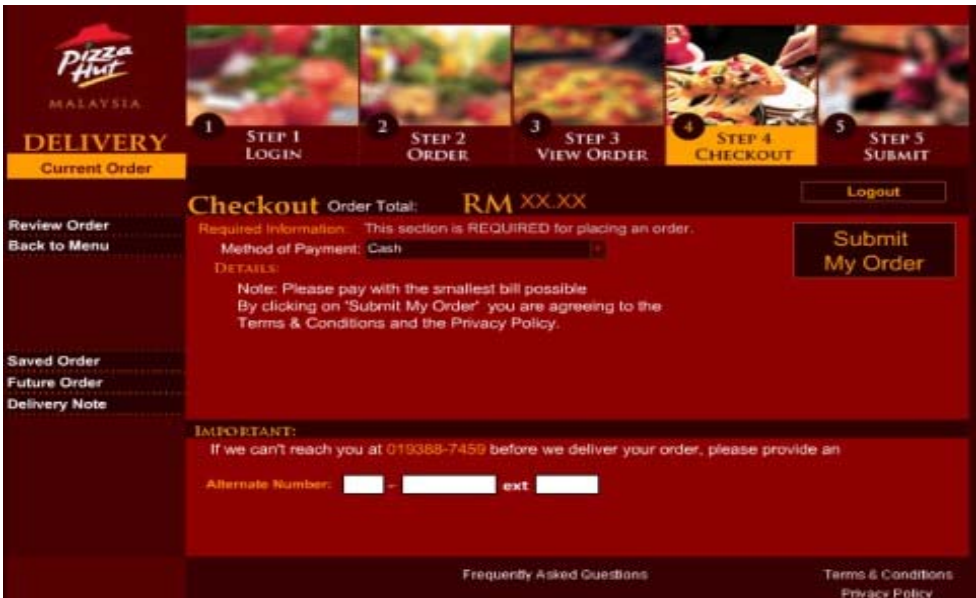


Figure 8.5: Checkout

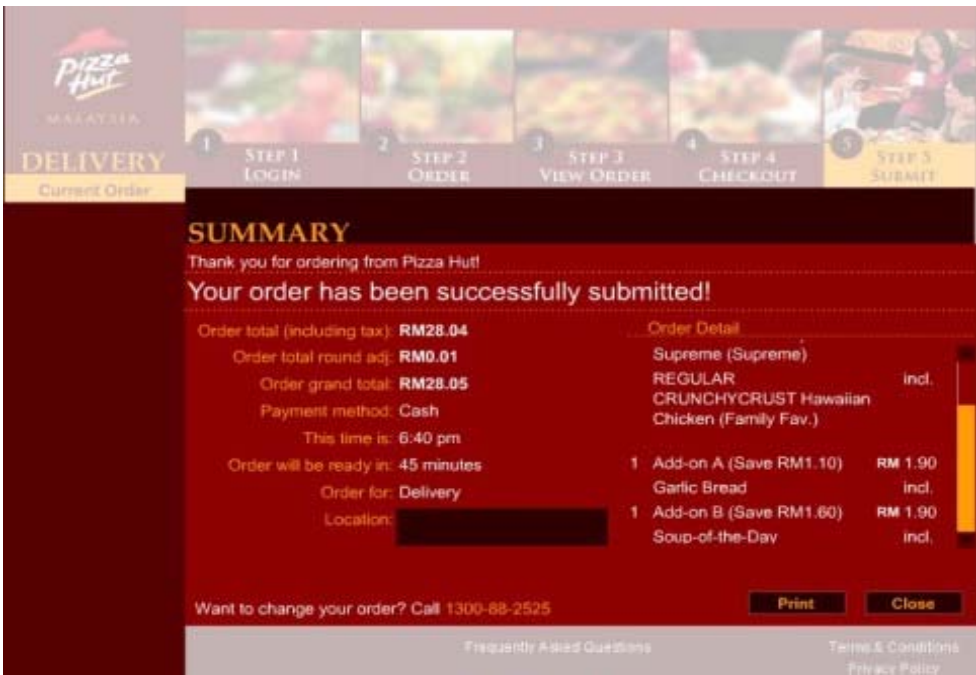


Figure 8.6: Complete Transaction

System Guide

Deploying Web Site Using the Copy Web Site Tool

Visual Studio's Copy Web Site tool is similar in functionality to a stand-alone FTP client. In a nutshell, the Copy Web Site tool allows you to connect to a remote web site through FTP. Copy Web Site user interface consists of two panes: the left pane lists the local files while the right pane lists those files on the destination server.

Let's take a look at using the Copy Web Site tool to publish the application to production. Launch the Copy Web Site tool project by clicking the Copy Web Site icon in the Solution Explorer (this icon is circled in Figure 1); alternatively, you can select the Copy Web Site option from the Website menu. Either approach launches the Copy Web Site user interface shown in Figure 1; only the left pane in Figure 1 is populated because we have yet to connect to a remote server.

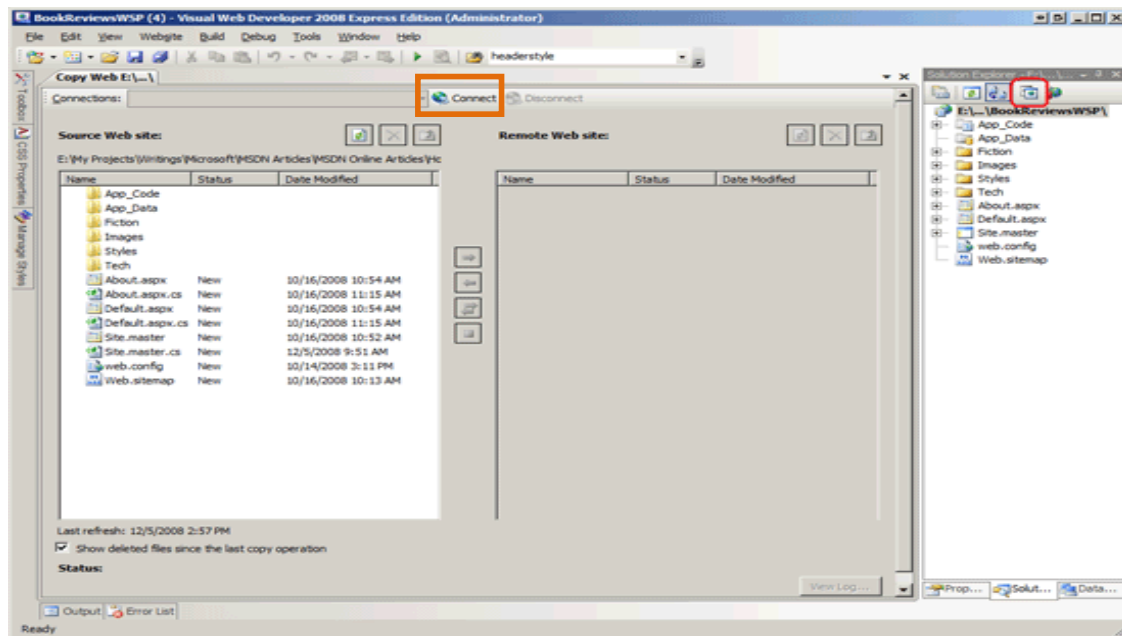


Figure 1: The Copy Web Site Tool's User Interface is divided into Two Panes

In order to deploy our site we need to first connect to the web host provider. Click the Connect button at the top of the Copy Web Site user interface. This displays the Open Web Site dialog box shown in Figure 2.

You can connect to the destination website by selecting one of the four options from the left:

- **File System** - select this to deploy your site to a folder or network share accessible from your computer.
- **Local IIS** - use this option to deploy the site to the IIS web server installed on your computer.
- **FTP Site** - connect to a remote web site using FTP.
- **Remote Site** - connect to a remote website using FrontPage Server Extensions.

Most web host providers support FTP, but fewer offer FrontPage Server Extension support. Now, I show the example of selected the FTP Site option and then entered the connection information as shown in Figure 2.

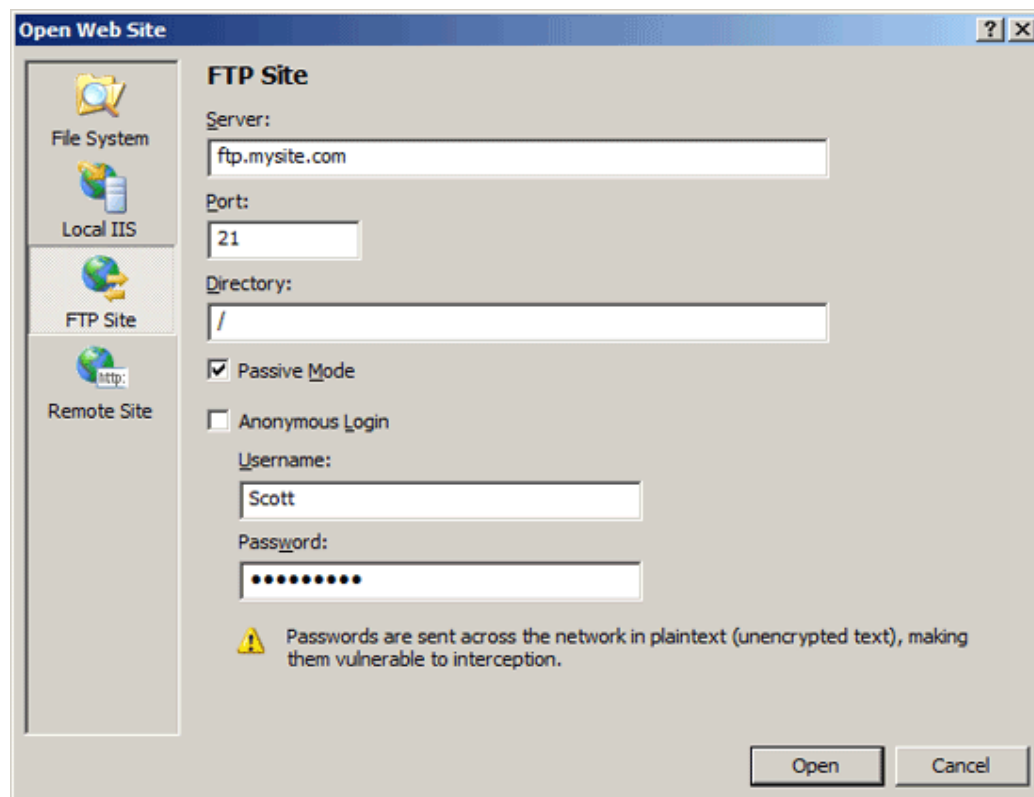


Figure 2: Specify the Destination Website

After you connect, the Copy Web Site tool loads the files at the remote site in the right pane and indicates the status of each file: New, Deleted, Changed, or Unchanged. You can copy a file from the local site to the remote site, or vice-a-versa. Let's add a new page to the project and then deploy it so that we can see the Copy Web Site tool in action. Create a new ASP.NET page in Visual Studio in the root directory named Privacy.aspx. Have the page use the master page Site.master and add your site's privacy policy to this page.

Next, return to the Copy Web Site user interface. As Figure 3 shows, the left pane now includes the new files -Policy.aspx and Policy.aspx.cs. What's more, these files are marked with an arrow icon and a Status of New, indicating that they exist on the local site but not on the remote site.

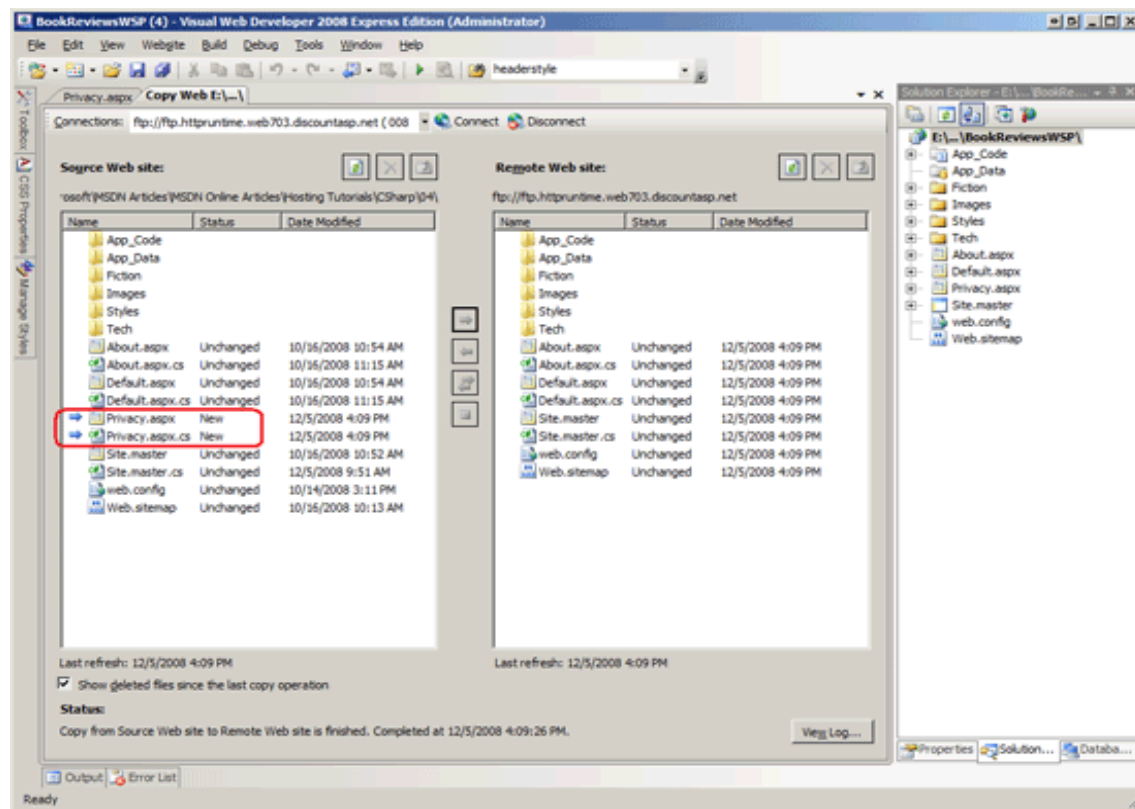


Figure 3: The Copy Web Site Tool Includes the New Privacy.aspx Page in its Left Pane

To deploy the new files select them and then click the arrow icon to transfer them to the remote site. After the transfer completes the Policy.aspx and Policy.aspx.cs files exist on both the local and remote sites with the status Unchanged.

Along with listing new files, the Copy Web Site tool highlights any files that differ between the local and remote sites. To see this in action, return to the Privacy.aspx page and add a few more words to the privacy policy. Save the page and then return to the Copy Web Site tool. As Figure 4 shows, the Privacy.aspx page in the left pane has a status of Changed indicating that it is out of sync with the remote site.

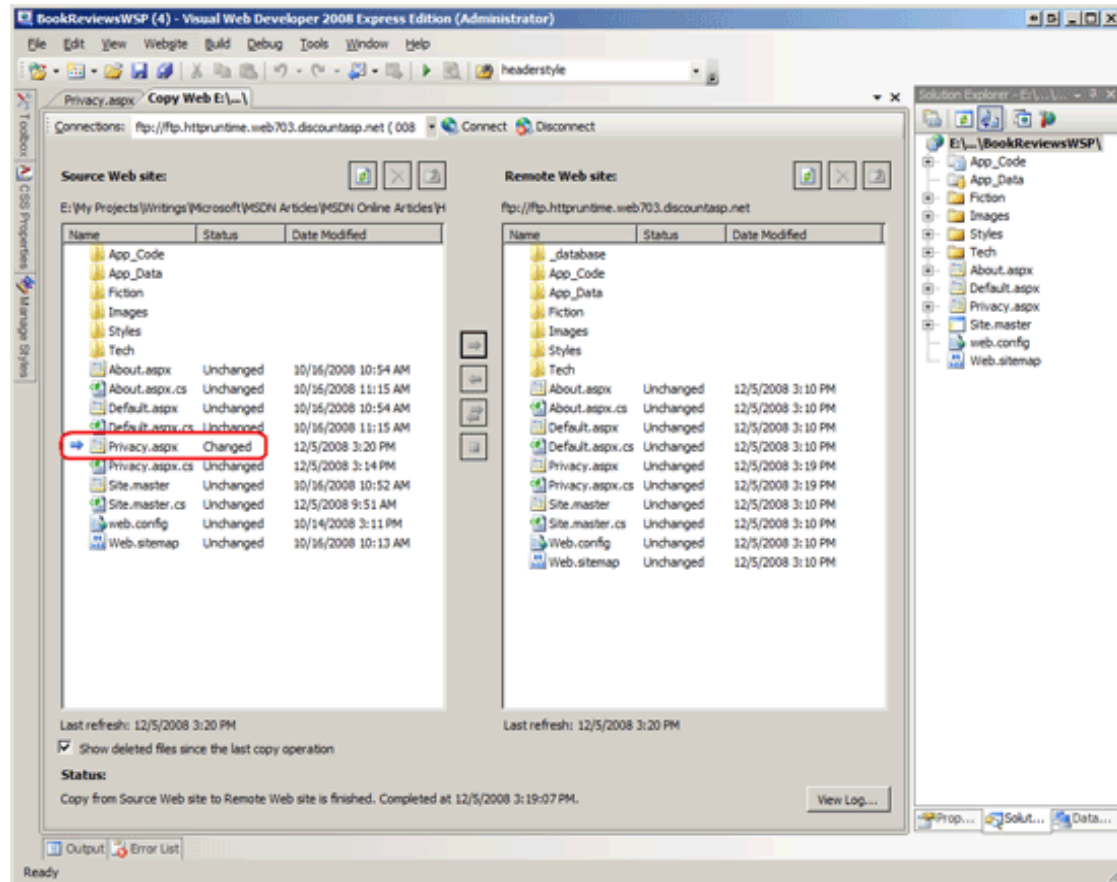


Figure 4: The Copy Web Site Tool Indicates that the Privacy.aspx Page has been Changed

The Copy Web Site tool also indicates if a file has been deleted since the last copy operation. Delete the Privacy.aspx from the local project and refresh the Copy Web Site tool. The Privacy.aspx and Privacy.aspx.cs files remain listed in the left pane, but have a Deleted status indicating that they have been removed since the last copy operation.

Publishing a Web Application

Another way to deploy your web application from within Visual Studio is to use the Publish option, which is accessible via the Build menu. The Publish option explicitly compiles the application and then copies all of the necessary files up to the specified remote site. As we'll see shortly, the Publish option is blunter than the Copy Web Site tool. Whereas the Copy Web Site tool lets you examine the files on the local and remote sites and permits you to **upload or download individual files as needed**, the Publish option deploys the **entire web application**.

In addition to copying all of the needed files to the specified remote site, the Publish option also explicitly compiles the application. Given that Web Application Projects need to be explicitly compiled it should come as no surprise that the Publish option is available for Web Application Projects. What may be a bit surprising is that the Publish option is also available for Web Site Projects.

Let's look at deploying the application using the Publish option. Start by opening (the Web Application Project) in Visual Studio. From the Publish menu choose the Build the project. This brings up a dialog box that prompts for the target location, among other configuration options (see Figure 5). Much like with the Copy Web Site tool you can enter a location that points to a local folder, a local website on IIS, a remote website that supports FrontPage Server Extensions, or an FTP server address. You can choose whether to replace the files on the remote web server with the deployed files or to delete all of the content on the remote site before publishing. You can specify whether to copy:

- Only the files in the project needed to run the application, which omits the unneeded source code and project-related files.
- All project files, which includes the source code files and Visual Studio project files like the Solution file.
- All files in the source project folder, which copies all files in the source project folder regardless of whether they're included in the project.

There's also an option to upload the contents of the App_Data folder.

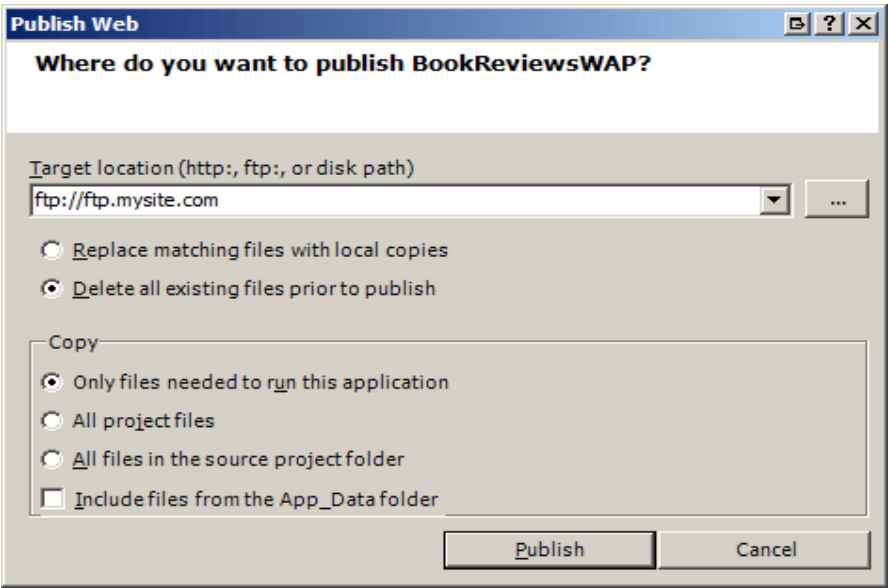


Figure 5: Specify the Destination Website

For the application, the remote site contains the files deployed when copying the project via the Copy Web Site tool. Therefore, let's have the Publish option start by deleting all existing content. Also, let's just copy the necessary files rather than cluttering the production environment with unneeded source code and project files. After specifying these options, click the Publish button. Over the next several seconds Visual Studio will deploy the necessary files to the destination site, displaying its progress in the Output window.

Figure 6 shows the files on the FTP site after the Publish operation has completed. Note that only the markup pages and the necessary sever- and client-side support files have been uploaded.

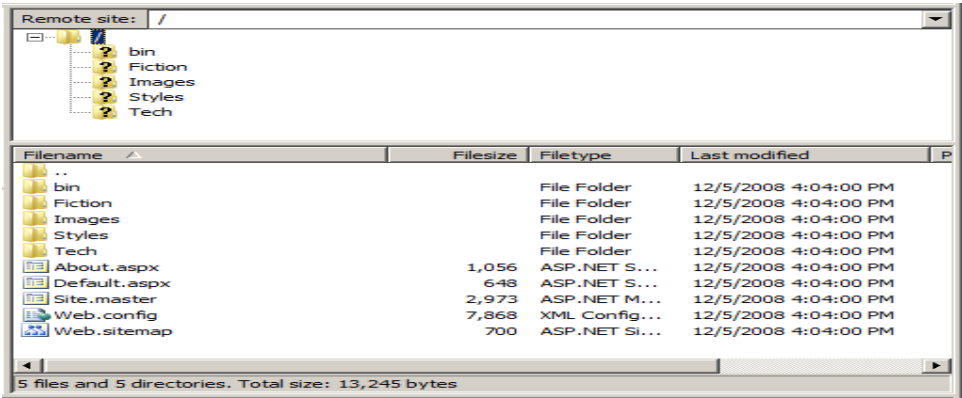


Figure 6: Only the Needed Files Were Published to the Production Environment

The Publish option is a less nuanced tool than the Copy Web Site tool. Whereas the Copy Web Site tool allows you to inspect the files on the local and remote sites and see how they differ, the Publish option provides no such interface. Moreover, the Copy Web Site tool enables you to make one-off changes, uploading or deleting individual files. The Publish option does not allow such fine-grained control; instead, it publishes the *entire* application. This behavior has its pros and cons. On the plus side, you know when using the Publish option you won't be forgetting to upload an important file. But consider what happens if you have made a small change to a very large website - with the Publish option you cannot update that page or two that has been modified, but instead you must wait while Visual Studio deploys the entire site.

It's not uncommon for there to be certain files whose content differs between the production and development environments. A key example is the application's configuration file, Web.config. Because the Publish option blindly copies the web application files it overwrites the production environment's customized configuration files with the version in the development environment. The subsequent tutorial explores this topic further and offers tips for deploying a web application when such differences exist. (Scott Mitchell, 2011)

Summary

Deploying a website involves copying the necessary files from the development environment to the production environment. The previous tutorial showed how to transfer files using an FTP client like FileZilla. This tutorial examined two deployment tools in Visual Studio: the Copy Web Site tool and the Publish option. The Copy Web Site tool is similar to an FTP client in that it has a two-paned interface listing the files on the local computer and a specified remote computer that makes it easy to upload or download files between the two computers. The Publish option is a more blunt tool that explicitly compiles the project and then deploys the entire application to the specified destination. (Scott Mitchell, 2011)

User Guide

Non-Member

Main Page

This main page is use by all internet users to view our restaurant product and services. This main page have link to meals menu, promotion, reservation information, contact us and about us details. It also allow new member to sign up or login by existing members to make orders or reservation. It displays some images that play with flash and changed in few second automatically.



Figure 9.1: Main Page of Restaurant Management System

Step 1: Register by Non Member/New User to make order.

Step 2: Login to Member Home Page

Menu

This menu page has showed all the meals to customer (non-member) to have a view. Customer can view meals by select meal category or select page number. There have different meals with its information like meal number, name, description and price. Customer need to register to become member in order to make order.



Figure 9.2: Menu Page

Step 1: Customer can view menu by meal category or page numbers.

Step 2: Menu displayed based on the selection of category or page number.

Promotion

This web page is show about TwinsYen Restaurant promotion like Happy Hour which has fun with guest and offer appetizer to them. We have also promote with a eating contest for those who eat most in limited time can with our mystery gifts. Every weekend, restaurant has play for live music, it enable customer Live by Request.

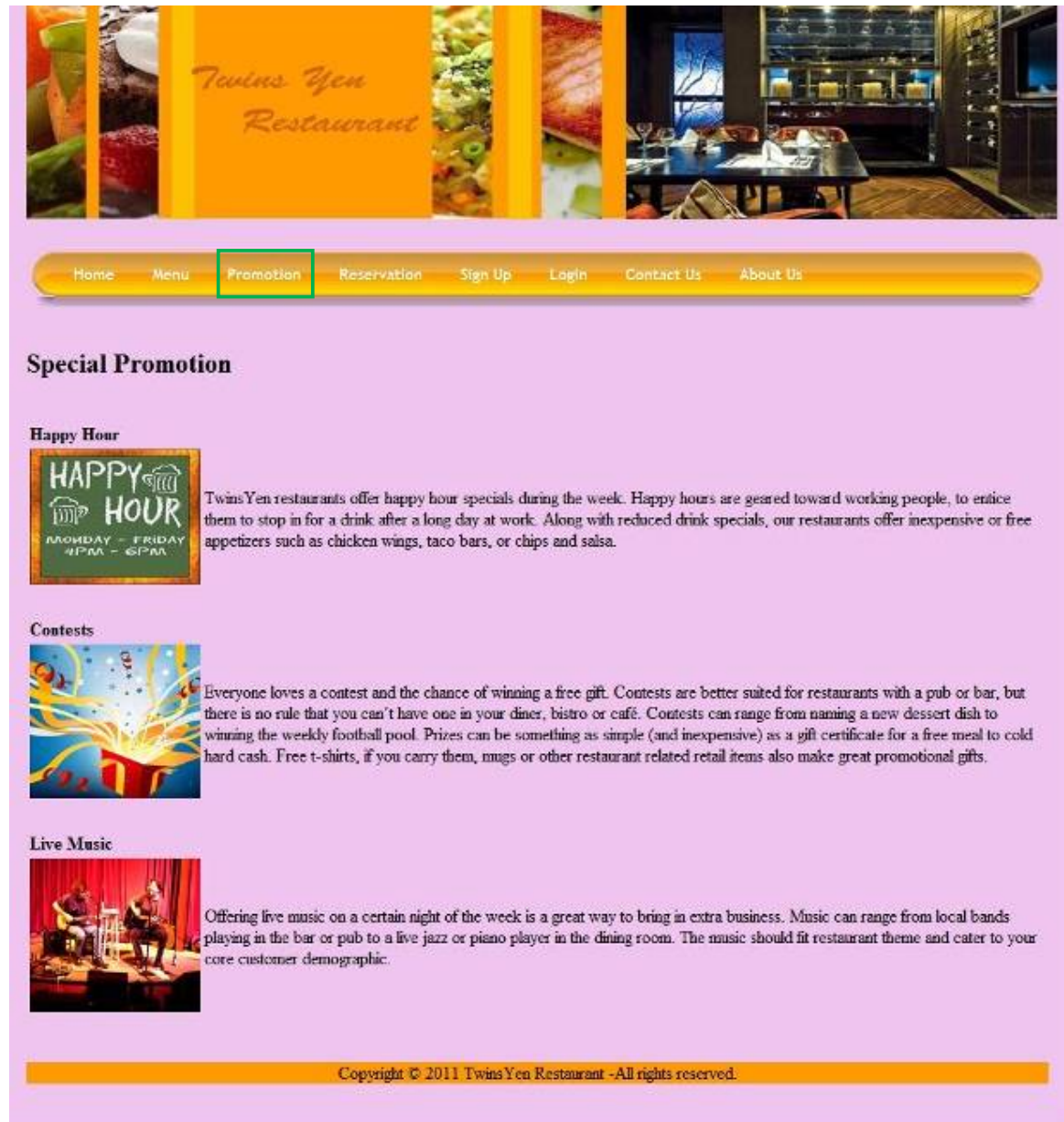


Figure 9.3: Promotion of TwinsYen Restaurant

Member

Main Page

This home page will show after the member was login. Different people have different access level. After member login, they enable to make order, rate meal, make reservation, view previous orders, top 5 meals, view their profile, give feedback and so on by selecting the menu bar at the top of web page.



Figure 9.4: Member Home Page

Menu

This menu page has show all the meals which can view by meal category or page numbering. It allows member to rate the meals and order meals by select meal quantity and add it to order list. Member can view their order by click the order list button. By the way, this menu page has display the snow fall effect to get more attractive for users.

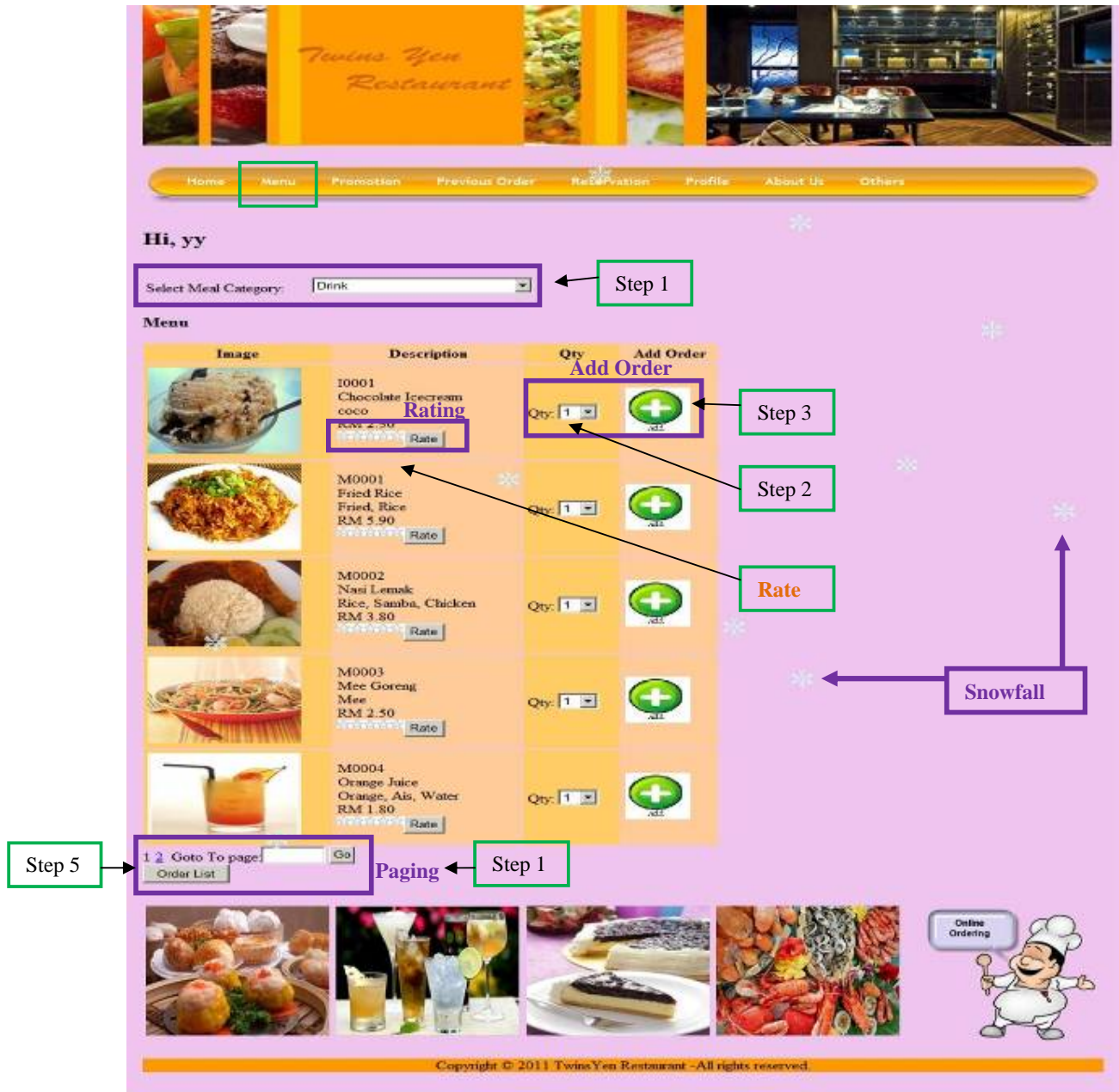


Figure 9.5: Menu Page

Step 1: Search by meal category or view by page number.

Step 2: Select meal quantity

Step 3: Click “Add” to add orders.

Step 4: Display “Order Add” message

Step 5: Click “Order List” to view all the orders

Rate: Select rating values (star), click “Rate”.

Order List

This order list page is show all the meals that ordered by the member.

Order No.: O0002

Order List

MealNo	MealName	Qty	Price(RM)	Subtotal(RM)	Delete
M0003	Mee Goreng	2	2.50	5.00	<input type="checkbox"/>
M0007	Lemon Tea	3	1.90	5.70	<input type="checkbox"/>
M0002	Nasi Lemak	2	3.80	7.60	<input type="checkbox"/>
Grand Total:				RM 18.30	Confirm Delete

Continue

Method
☐ Collect Myself
☐ Delivery
 Method

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Figure 9.6: Order List

Continue: Continue to make order, redirect to order page.

Clear: Clear all the orders, back to home page.

Confirm: Confirm the orders, submit the order to restaurant.

Delete: Checked it and Click delete button.

Method: Make selection either take away or delivery.

Delivery

If users choose to deliver meals, they need to fill in delivery details such as receiver name, delivery date, time, address, contact number and so on. After submit delivery information, they have to make payment either by cash or credit card.

Twins Yen Restaurant

Home Menu Promotion Previous Order Reservation Profile About Us Others

Order Success, please choose either take away or delivery your meal.
Order No.: 00003

Order List

ItemId	ItemName	Qty	Price(RM)	Subtotal(RM)	Delete
M0003	Mee Goreng	2	2.50	5.00	
M0007	Lemon Tea	3	1.90	5.70	
M0002	Nasi Lemak	2	3.80	7.60	
Grand Total:				RM 18.30	Confirm Delete

Continue Order Clear All Confirm Order

Method

☐ Collect Myself
☒ Delivery

Confirm

Delivery Information

Customer Name: yy Receiver Name: yy

Delivery Date: 15-Mar-2011 Delivery Time: 10:30 AM

Delivery Address: A-1-10GK33550setapakKL

Contact No.: +60129844110 (eg:0123338888)

Message:

Submit

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Steps:

- Step 1: Receiver Name
- Step 2: Delivery Date
- Step 3: Delivery Time
- Step 4: Delivery Address
- Step 5: Contact No.
- Step 6: Message
- Step 7: Submit

Figure 9.7: Delivery Form

Step 1: Enter Receiver name

Step 2: Select delivery date (delivery date can be early then today date)

Step 3: Select delivery time

Step 4: Enter delivery full Address

Step 5: Enter contact number.

Step 6: Leave a message if require special services

Step 7: Submit delivery information

Complete

After complete the payment transaction, it will redirect to this web page. It shows a message to inform users that they will receive SMS after the meals is ready to deliver. User can go back to home page by click Back to Home Page button.



Figure 9.8: Complete Transaction

Previous Orders

This web page allow member to view their previous orders by month. It has displayed order date, meal order details and total consume on the selected month. So that, customers can checks back this consumption history to create an accounting statement.

Twins Yen Restaurant

Home Menu Promotion **Previous Order** Reservation Profile About Us Others

Select by Month: March

Step 1

Order Date	OrderNo	MealNo	MealName	Qty	Price(RM)	Subtotal(RM)
15-Mar-2011	00002	M0003	Mee Goreng	2	2.50	5.00
15-Mar-2011	00002	M0007	Lemon Tea	3	1.90	5.70
15-Mar-2011	00002	M0002	Nasi Lemak	2	3.80	7.60
Grand Total:						RM18.30

Step 2

Grand Total: RM 18.30
Gov. Tax (5%): RM 0.92
Service Charge (10%): RM 1.83
Delivery Fees: RM 5.00
Total Amount: RM 26.05

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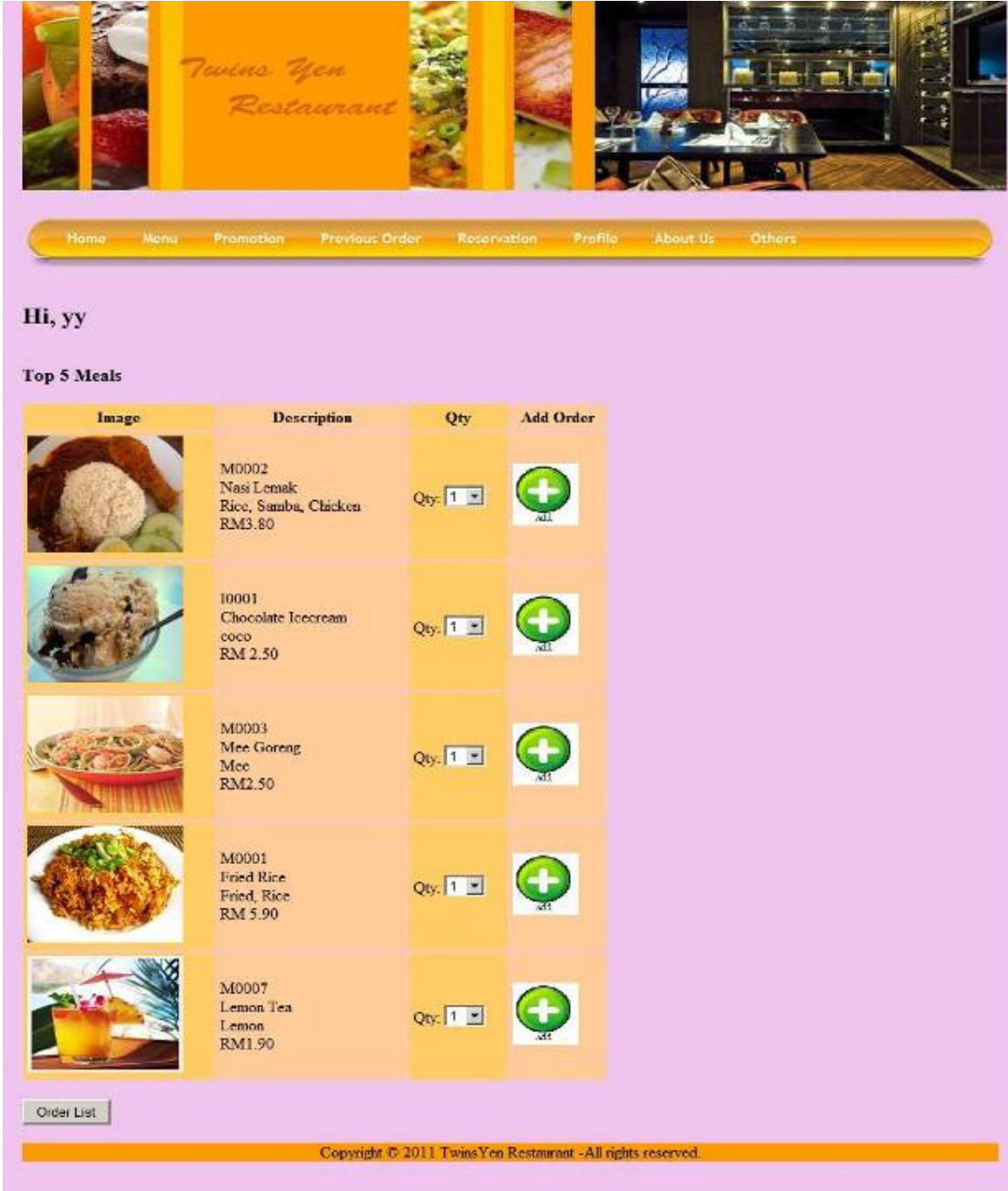
Figure 9.9: Previous Orders

Step 1: Search by Month to check for the previous orders.











Step 2: Display Order details and Payment Information of selected month.

Top 5 Meals

This web page is show top 5 of meals which enable customers to have a reference to make orders. The top 5 meals is show by the highest total quantity orders of each meal that order by customer. Members can make order directly from this page.



The screenshot displays the website for TwinsYen Restaurant. At the top, there is a navigation bar with links: Home, Menu, Promotion, Previous Order, Reservation, Profile, About Us, and Others. Below the navigation bar, a greeting "Hi, yy" is shown. The main section is titled "Top 5 Meals" and contains a table with five items. Each item includes an image, a description with an ID and price, a quantity selector (Qty: 1), and an "Add Order" button with a green plus icon. At the bottom of the table, there is an "Order List" button. The footer of the page states "Copyright © 2011 TwinsYen Restaurant -All rights reserved."

Image	Description	Qty	Add Order
	M0002 Nasi Lemak Rice, Samba, Chicken RM3.80	Qty: 1	
	I0001 Chocolate Icecream coco RM 2.50	Qty: 1	
	M0003 Mee Goreng Mee RM2.50	Qty: 1	
	M0001 Fried Rice Fried, Rice RM 5.90	Qty: 1	
	M0007 Lemon Tea Lemon RM1.90	Qty: 1	

[Order List](#)

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Figure 9.10: Top 5 Meals

Feedback

This page enables members to provide feedback or suggestions to restaurant for make improvement in quality of food or services. Thus, staff can generate feedback chart according to the feedback provided by customers.

Twins Yeu Restaurant

Home Menu Promotion Previous Order Reservation Profile About Us Others

Feedback
Contact Us
Logout

Restaurant Feedback Form

It is now time to evaluate the performance of our restaurant and catering operations as well as our community service. Hence we have this feedback form that I would request you to kindly fill out and send it back to me with your valued comments. I am sure, we will respectfully make necessary changes/amendments to improve the business environment, quality food and better service.

15-Mar-2011 9:38:52 PM

Member Information

MemberID: M0001
Member Name: yy
Email Address: yy@yahoo.com
Phone Number: +60129844110
My Favorite Meal: ice-cream

Please evaluate the following

Foods and Drinks ☐ Excellent ☒ Good ☐ Average ☐ Poor ☐ Very Poor
Customer Service ☒ Excellent ☐ Good ☐ Average ☐ Poor ☐ Very Poor
Ambiance ☒ Excellent ☐ Good ☐ Average ☐ Poor ☐ Very Poor
Staff behavior ☒ Excellent ☐ Good ☒ Average ☐ Poor ☐ Very Poor
Menu ☒ Excellent ☐ Good ☒ Average ☐ Poor ☐ Very Poor
Price ☒ Excellent ☐ Good ☐ Average ☐ Poor ☐ Very Poor

Comments / Suggestions: Play some soft /class music

Submit

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Figure 9.11: Feedback

Step 1: Enter your favorite meal

Step 2: Evaluate all the criteria in different areas.

Step 3: Enter comments or suggestions.

Step 4: Submit Feedback to restaurant

Redemption History

This page enables members to view the redemption history that they had make redemption for items before. From there, they can know that when they have make redemption and what they redeem. Besides, they also can view for their balance points.

TwinsYen Restaurant

Home Menu Promotion Previous Order Reservation Profile About Us Others

Redemption History

1 of 1 100% Find Next

Redeem Date	Redeem Item	Qty	Point Claim	Balance Point
15-Mar-2011	Tupperware	1	800	1514

© TwinsYen Restaurant 15-Mar-2011 02:29 PM 1

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Figure 9.11: Redemption History

Staff

Check Order List

This web page enables staff (kitchen) to view the orders that make by customers. They can prepare the meals based on the delivery time. Staff can view the order details by click the select button, and press complete button after the meals is cooked and send it to customers.

Twins Yen Restaurant

Home Menu **Check List** Delivery Feedback Reservation SMS Promotion Others

Step 1

Select	Time	OrderNo	MemberID
Select	10.30 AM	O0002	M0001
Select	12.00 PM	O0003	M0002
Select	12.00 PM	O0004	M0003
Select	1.00 PM	O0005	M0004
Select	1.00 PM	O0006	M0002

MealNo	MealName	Qty
M0002	Nasi Lemak	2
M0003	Mee Goreng	2
M0007	Lemon Tea	3

Complete

Finish Cooked **Step 2**

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Figure 9.12: Check List

Step 1: Select the order to view all the meal details.

Step 2: Click “Complete” after the meal is cooked.

Check Delivery

This delivery web page shows the delivery, order meals and payment information. Staff can view or check the meal order by click the select button, then the order meal will show at below. It also displays the total amount, balance or payment details. Besides, it enables staff to print delivery information or view map. Delivery staff may select their name and click the delivery button. Then, it will redirect to SMS form.

Delivery

Step 1

Delivery Information

Select	DTime	MemberID	OrderNo	Receiver	Contact No.	Deliver Address
Select	10.30 AM	M0001	O0002	yy	+60129844110	A'-1-10GK33550setapakKL
Select	12.00 PM	M0002	O0003	LAI	+60167791010	C-2-1GK33550setapakKL
Select	12.00 PM	M0003	O0004	hihi	+60168285566	'--B'-13-2Wangsa5330setapakKL

Meal Order Details

Meal No.	Meal Name	Qty	Price(RM)	Subtotal(RM)
M0002	Nasi Lemak	2	3.00	7.60
M0003	Mee Goreng	2	2.50	5.00
M0007	Lemon Tea	3	1.90	5.70

Step 2

Payment Details

Grand Total (RM): 18.30
 Gov. Tax 5%(RM): 0.92
 Service Charge 10% (RM): 1.83
 Delivery Fees (RM): 5
 Total Amount (RM): 26.05
 Total Paid (RM): 0.00
 Balance (RM): 0.00

Delivery Information

Step 3

Deliver by: Alex **Step 5**

Delivery Time: 3:27 PM

Step 4

Print Delivery Info.

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Figure 9.13: Delivery Details

Step 1: Select the order

Step 2: View and confirm all the meals

Step 3: Assign Delivery Person

Step 4: Click “Print Delivery Info.” to print the delivery details.

Step 5: Click “Delivery” to redirect to SMS form.

SMS Delivery Message

It show SMS form when delivery meals. Staff enables to connect modem or mobile device to computer in order to send SMS to customers and inform them the meal is ready to deliver.

The screenshot shows the 'SMS Delivery' form within the 'Twins Yen Restaurant' application. The form has a light purple background and a yellow navigation bar at the top with links: Home, Menu, Check List, Delivery, Maintenance, Report, SMS Promotion, Reservation, and Others. The form fields are as follows:

- Device:** A dropdown menu showing 'SAMSUNG Mobile USB Modem'. A green box labeled 'Step 1' points to this field.
- Device Speed:** A text input field showing '9600'. A green box labeled 'Step 2' points to this field. A note next to it says '(only applies to direct ports, i.e. COM1, COM2, etc.)'.
- Message:** A text area containing 'RM0. Your meal order is ready to deliver. TwinsYen Restaurant.' A green box labeled 'Step 3' points to this field.
- Send SMS Message:** A button with the text 'Send SMS Message'. A green box labeled 'Step 4' points to this button.
- Result:** A text input field showing '0: Success'. A green box labeled 'Step 5' points to this field.

Additional annotations include a purple box labeled 'Device Connected' pointing to the Device dropdown, and another purple box labeled 'Sending Result' pointing to the Result field. At the bottom of the form, there is a copyright notice: 'Copyright © 2011 TwinsYen Restaurant - All rights reserved.'

Figure 9.14: SMS Form

Step 1: Select mobile device name

Step 2: Select device speed

Step 3: Enter delivery message

Step 4: Click “Send SMS” to send the message to customers.

Step 5: Show sending result.

Print Delivery Information

This page is print by staff for their reference whenever they required delivering many meals to customer. They no need to remember or copy down their address or balance when deliver to them.



15-Mar-2011 4:13:33 PM

Delivery Information

Order No.	Member ID	Customer Name	Contact No.	Address	Total Charge (RM)	Balance (RM)
O0002	M0001	yy	+60129844110	A-1-10GK33550setapakKL	26.05	0.00
O0003	M0002	LAI	+60167791010	C-2-10K33550setapakKL	14.20	0.00
O0004	M0003	hihi	+60166205566	F-13-2Wangsa5330setapakKL	20.30	0.00

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Figure 9.15: Print Delivery Details

View Map

This page is enable staff to check for the delivery location by this map. They can search the location by enter zip code or address, then it will shows the search location map after it verify the address.

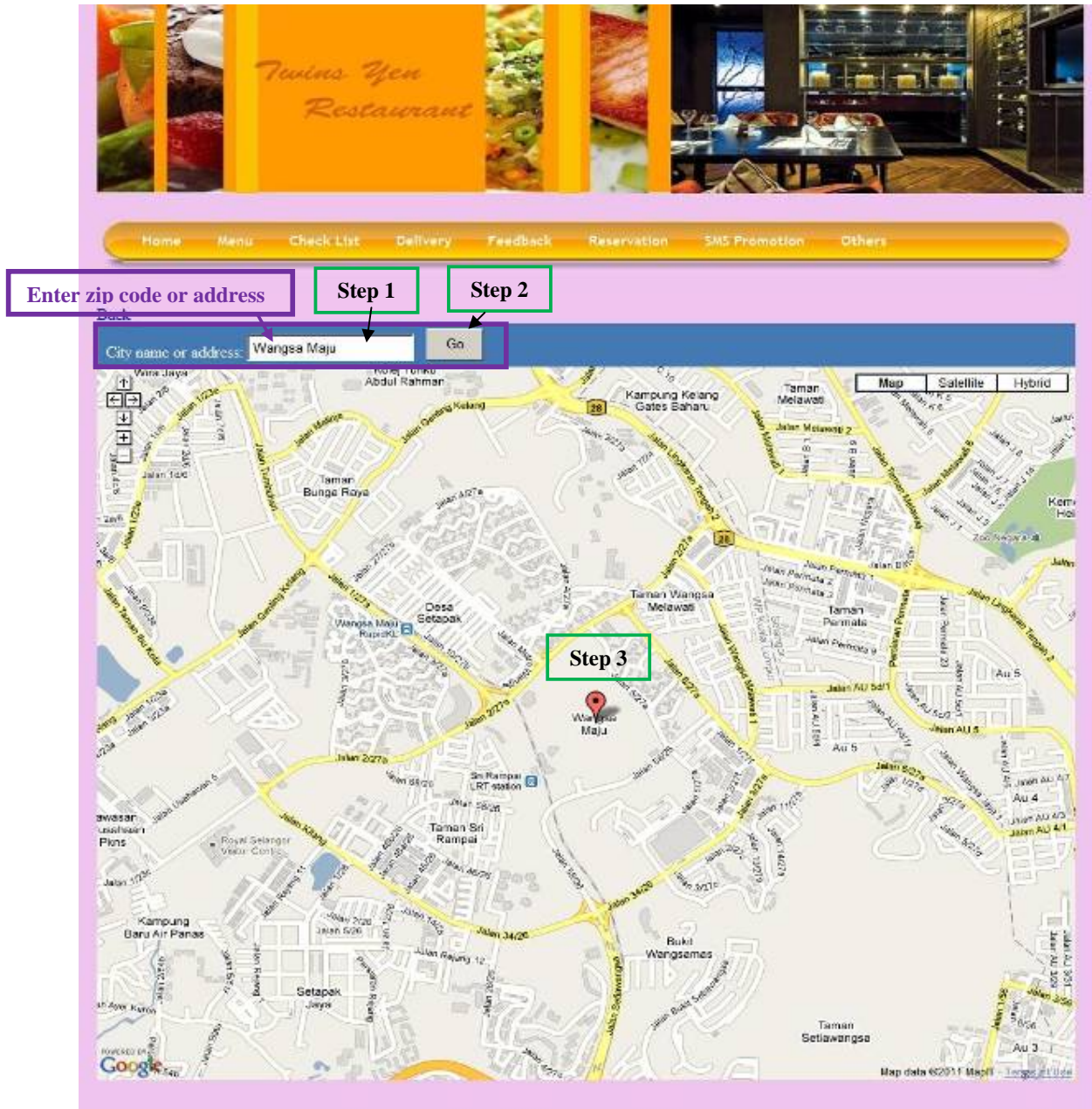


Figure 9.16: Search Delivery Location

Step 1: Enter zip code or address

Step 2: Click “Go” to search the location

Step 3: Display the location

SMS for Promotion or Special Event

When restaurant conduct some event or promotion, they enable to send message to customer inform them about the promotion and date. Thus, they can improve sales through this method. For sending SMS, user may require to connect modem or mobile deliver with SIM card to computer.

The screenshot shows the 'SMS Promotion' section of the restaurant management system. It includes a navigation bar with links: Home, Menu, Check List, Delivery, Feedback, Reservation, SMS Promotion, and Others. The main form is titled 'SMS for Promotion or Special Event' and contains the following fields and steps:

- Step 1:** Device: A dropdown menu showing 'COM5'. A note indicates '(only applies to direct ports, i.e. COM1, COM2, etc.)'.
- Step 2:** Device Speed: A dropdown menu showing '9600'.
- Step 3:** Message: A text area containing the message: 'RMO. TwinsYen Restaurant have a special promotion of free five table meal on CNY and luck draw on 8 Feb-10 Feb. T&C applies. Tel: 03 11294567'.
- Step 4:** Send SMS Message!: A button to send the message.
- Step 5:** Result: A text field showing 'n/a'.

At the bottom of the page, there is a copyright notice: 'Copyright © 2011 TwinsYen Restaurant. All rights reserved.'

Figure 9.17: SMS for Promotion

Step 1: Select mobile device name

Step 2: Select device speed

Step 3: Enter Promotion information

Step 4: Click “Send SMS” to send the message to customers.

Step 5: Show sending result.

Redemption

This figure show the redeem items such as key chain, Tupperware, toy, etc which redeem by using points.



Figure 9.18: Redemption

Step 1: Enter Member ID to search member card number and member points.

Step 2: Select redeem quantity

Step 3: Click “Redeem” to add redemption

Step 4: Display redeem successful message

Step 5: Click “View Redeem Info” to print redemption details for that day.

Admin

Meal Category Maintenance

This figure shows all the meal category, it enable admin to add, delete and edit meal category by select the category. Admin can change the id or name by using this page.

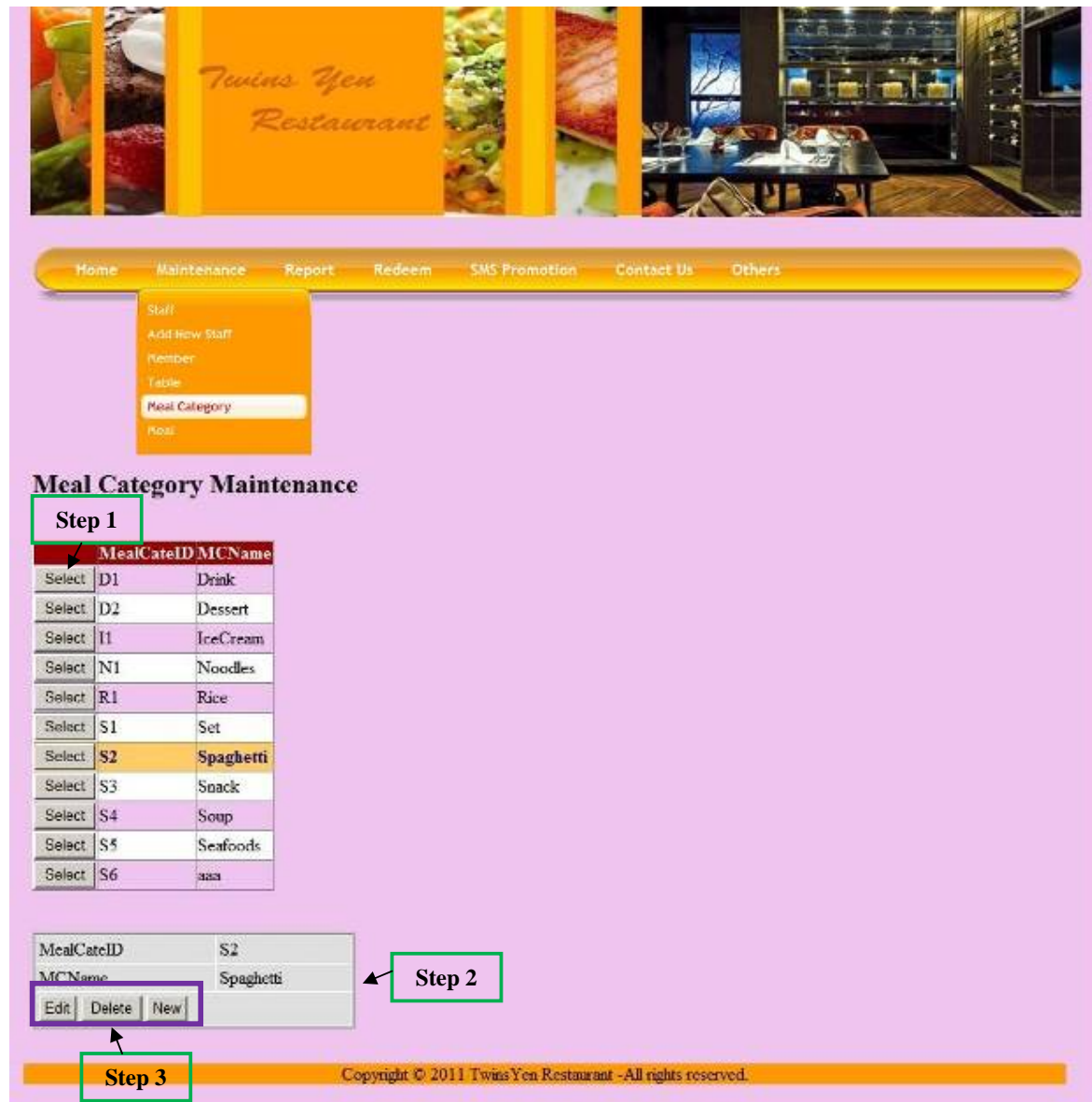


Figure 9.19: Meal Category Maintenance

Step 1: Select the meal category

Step 2: Display the selected category

Step 3: Select Edit to do modification, Delete to delete the category and Add to add new category.

Meal Maintenance

This figure shows the meal information for maintenance purpose. Admin enable to upload meals picture, edit, delete and add new meal by select meal category.

The screenshot displays the 'Meal Maintenance' interface for 'Twins Yen Restaurant'. The interface is divided into several sections:

- Navigation Bar:** Home, Maintenance, Report, Redeem, SMS Promotion, Contact Us, Others.
- Files on the Server:** A list of files including drink.jpg, FriedRice.jpg, ice-cream1.jpg, juice1.jpg, juice2.jpg, juice3.jpg, Nasi_Lemak.jpg, noodles1.jpg, rice1.jpg, and seafood2.jpg. A 'Create New Folder' button is also present.
- Upload Section:** A 'Choose a file to upload to the server' section with a 'Browse...' button and an 'Upload File' button.
- Meal Details Table:** A table with columns: MealNo, MealName, Price(RM), Desp, and Image. It lists three items: Orange Juice, Lemon Tea, and Juice. Each item has a 'Select' button next to its image.
- Meal Details View:** A detailed view of a selected meal (Lemon Tea) showing its image, name, price, and description. It includes 'Edit', 'Delete', and 'New' buttons.

Annotations and steps are provided for clarity:

- Step 1:** Points to the 'Select Meal Category' dropdown menu.
- Step 2:** Points to the 'Select' button next to the 'Lemon Tea' meal image.
- Step 3:** Points to the 'Edit' button in the meal details view.
- Step 4:** Points to the 'Delete' button in the meal details view.
- Upload Pictures:** A label pointing to the file upload section.
- Meal Details:** A label pointing to the table of meal information.

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Figure 9.20: Meal Maintenance

Step 1: Select Meal Category

Step 2: Select Meal

Step 3: Display Meal Details

Step 4: Click “Edit” to make change of meal information

Click “Delete” to delete the meal.

Click “Add” to add new meal information and upload meal for new meal.

Reports

Top 5 Monthly Reports

This figure is top 5 monthly reports that show the top 5 meals chart and information. The chart is show in quantity orders for each meal. Information display such as meal number, name, price and quantity order, total price and total quantity.

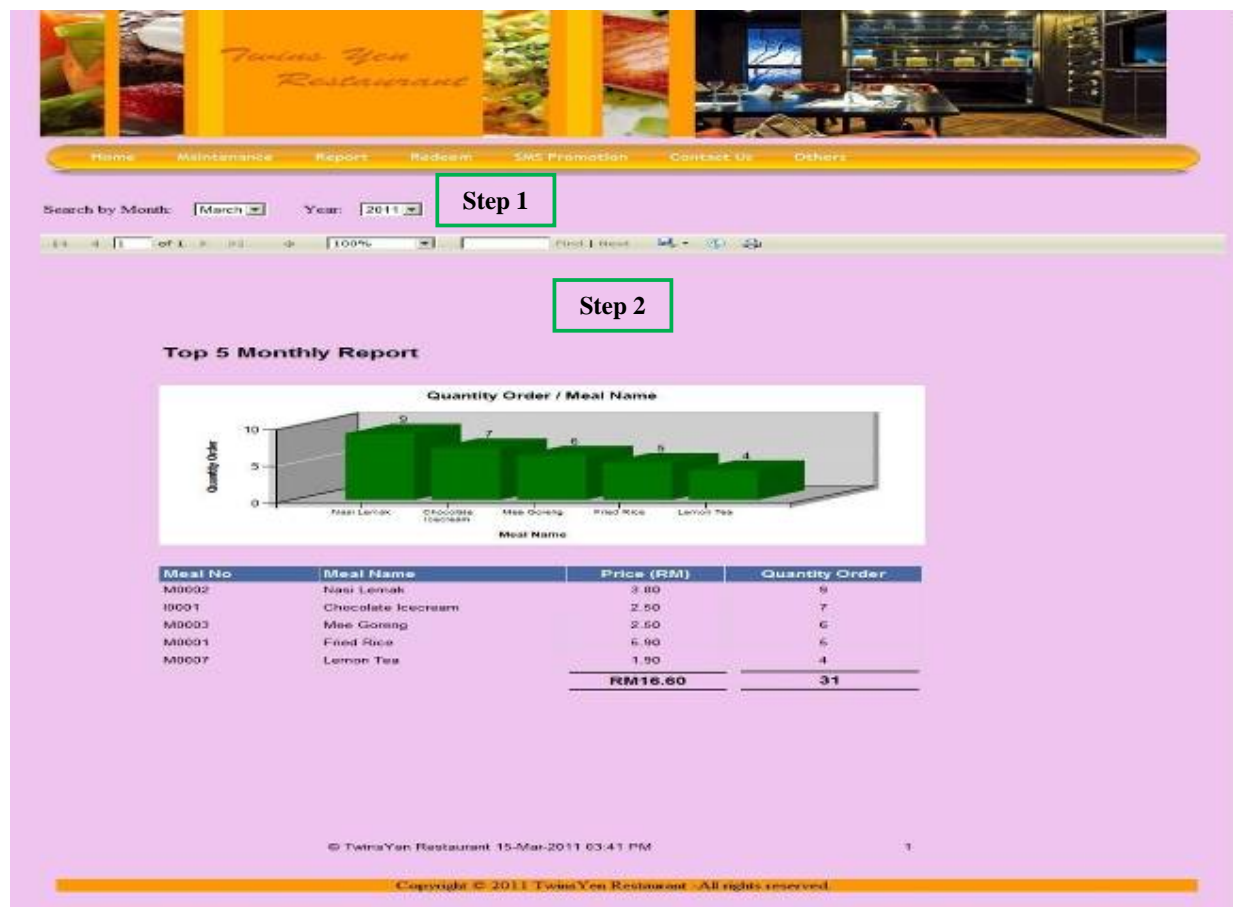


Figure 9.21: Top 5 Monthly Report

Step 1: Select Month or year to search top 5 reports

Step 2: Display Top 5 Monthly Report

Feedback Report

The figure shows for the feedback report chart in average values for each criteria. It also displays the number members who give the feedback as below.



Figure 9.22: Feedback Report

Step 1: Select Month or year to search feedback information by month

Step 2: Display Feedback Report

Redemption Report

This figure shows the redeem report for that day. It displays member id, redeem items, quantity, and balance point of members for staff to keep track of stock (redeem items).



The screenshot displays the 'Redemption Report' interface for TwinsYen Restaurant. At the top, there is a banner image showing various food items and the restaurant's interior. Below the banner is a navigation bar with links: Home, Maintenance, Report, Redeem, SMS Promotion, Contact Us, and Others. The main content area is titled 'Redeem Information' and includes a 'Back' link. A status bar shows the date and time: '15 Mar 2011 2:29:15 PM'. Below this, a table lists the redemption information:

Member ID	Member Card No.	Redeem Item	Qty	Balance Point
M0001	12345678	Tupperware	1	1514
M0002	87654321	Toy	1	1100

At the bottom of the interface, there is a footer with the text: '© TwinsYen Restaurant 15-Mar-2011 02:29 PM' and a page number '1'. The copyright notice at the very bottom reads: 'Copyright © 2011 TwinsYen Restaurant -All rights reserved'.

Figure 9.23: Redemption Report

Rating Report

This figure shows rating report for the meals. It displays meal number, meal name, total rating values, number of people rate. All of them are display by meal category.

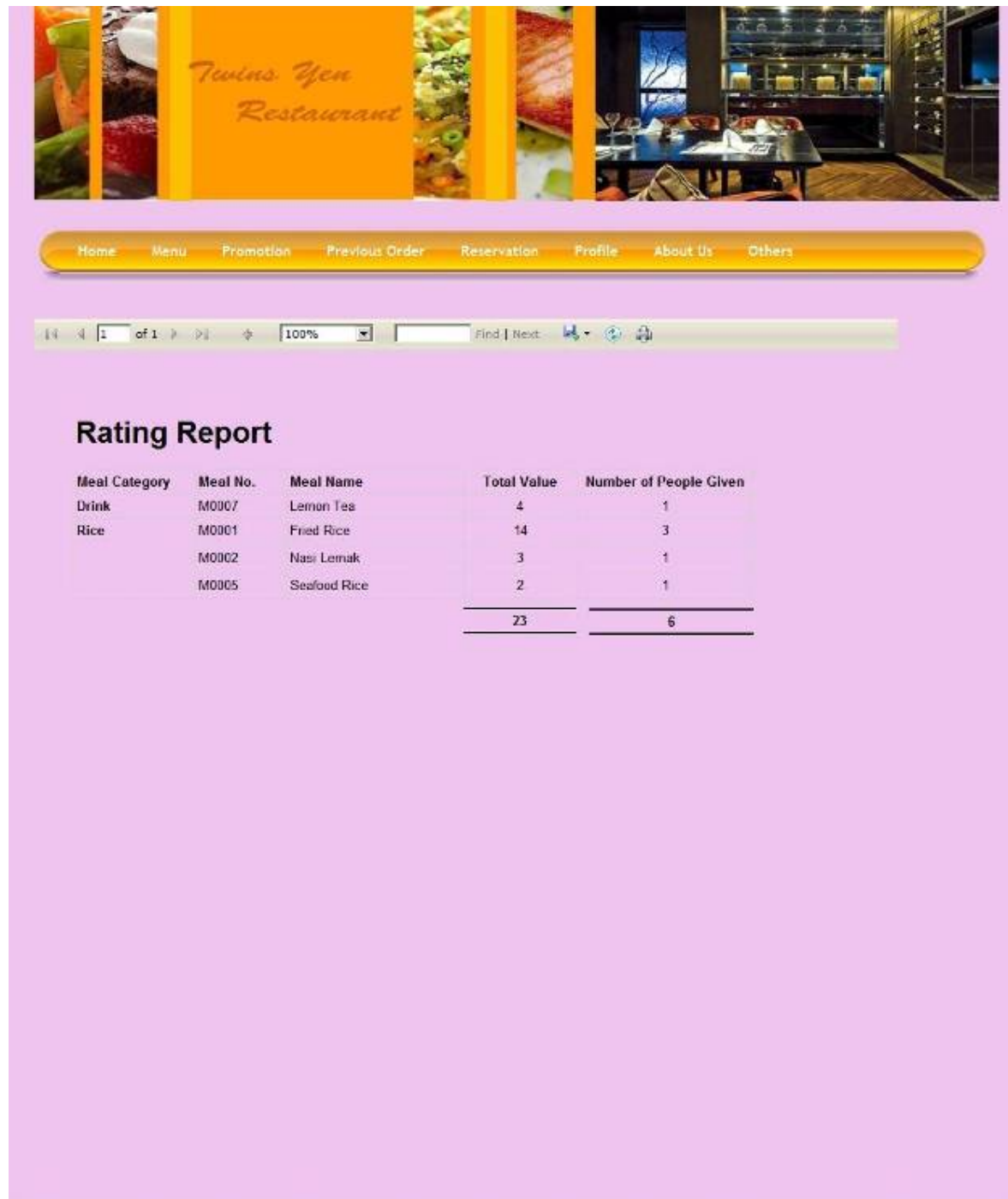


Figure 9.24: Rating Report

Monthly Sales Report

This figure is monthly sales reports that show meal details and total sales of selected month. Admin can use this report to analyst which meal was the highest sales and which month had gained more sales or profits.

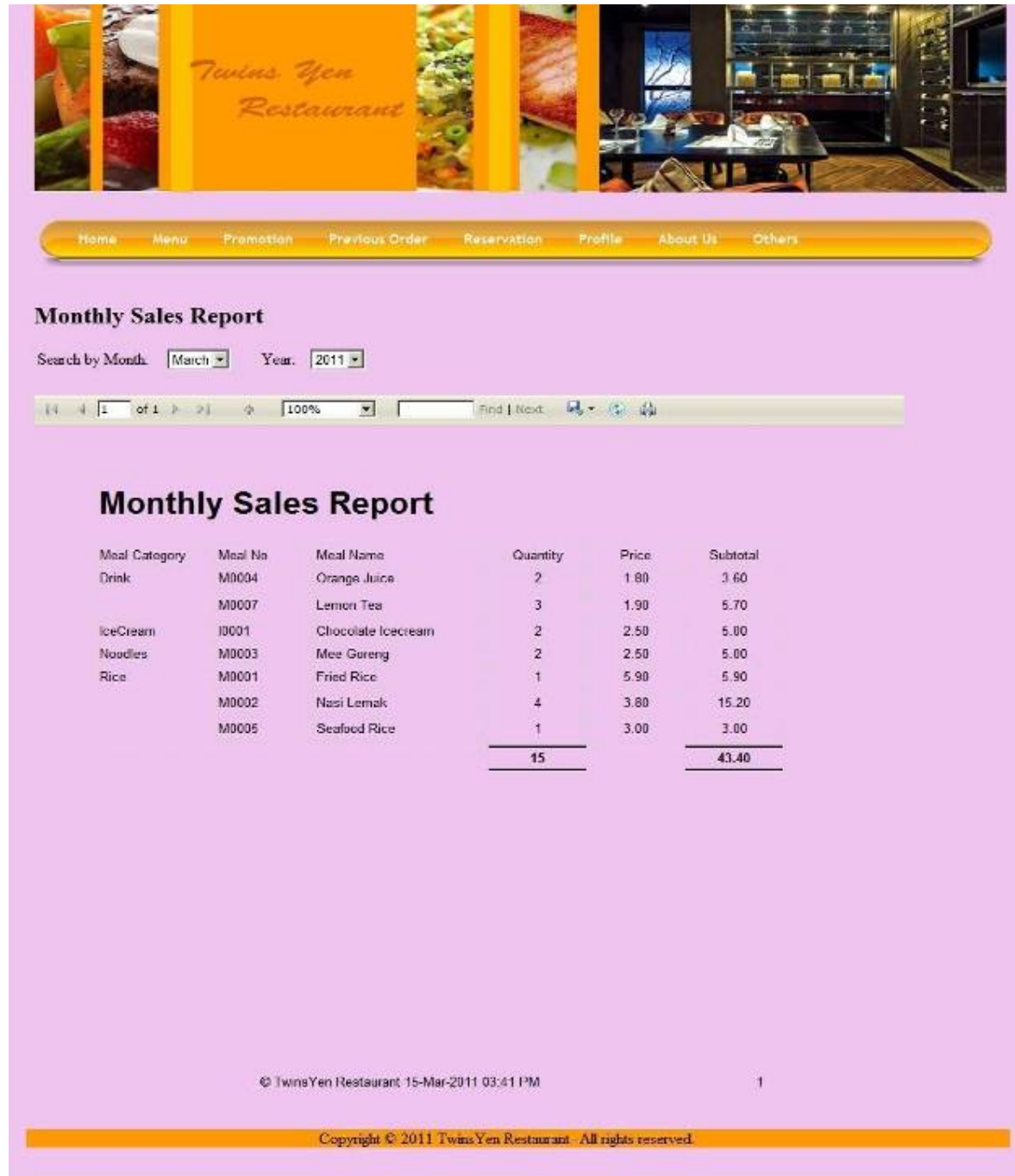


Figure 9.25: Monthly Sales Report