PROJECT REPORT

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TOPIC: Restaurant Management System

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ABSTRACT

"Restaurant Management System" is a web application for restaurant management. This system aims to provide service facilities to restaurants and also to the customer. The services that are provided are food ordering and reservation table management by the customer through the system online, customer information management and waiter information management, menu information management and report. Main objective of building the system is to provide ordering and reservation service online to the customer. With this system online, ordering and reservation management will become easier and systematic to replace the traditional system where we are still using paper. Furthermore, this system is applicable any time and where also customers. During the development of ORMS, the methodology being used is the Prototyping model. Furthermore, this project will develop for restaurant management and enhance business in system business by online. Others, this project to facilitate customers to make online ordering and reservations. The main objective of this project is to develop a client/server model, which deals with "Online Restaurant Meal Reservation System". The system has two parts first for the customers and the other for the management side.

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

INTRODUCTION

Restaurant management system is the system for manage the restaurant Business. The main point of developing this system is to help restaurant administrator Manage the restaurant business and help customers for online ordering and reserve tables. The project is developing because; many restaurants have a lot difficult to manage the business such as customer ordering and reservation table. By using manual customer ordering is difficult to waiter keep the correct customer information and maybe lose the customer information. So, restaurant management system will develop to help the restaurant.

Administrator to manage restaurant management and for customer make their online ordering and reservation table. Other than that, this project is to upgrade the manual System and make the business easy to access and systematic. Restaurant is a kind of business that serves people all over the world with readymade food. Currently this industry is going on with a lot of flare. People feel more comfortable with lot of variations in the selection and consumption of their food in their busy life. Nowadays, many restaurants manage their business by manual especially take customer ordering. Today, restaurant waiter takes the customer ordering by manual System with using paper. This is problem for restaurant waiter the probability lost and Duplicates customer information. Additionally, it would affect to reputation restaurant in operate management of ordering.

Hides, the restaurant waiter information also by manual system kept use paper and this is difficult for restaurant administrator to find waiter information, probability missing the paper and difficult to arrange the schedule. Sometimes, waiter information and customer information is important to restaurant administrators for reference in the future.

Furthermore, the restaurant side needs management in the section menu. This is the Important to restaurant waiters to manage the menu. Besides this section is for customer Viewer the menu that the restaurant prepared and make their order. As a result, the current system (manual system) is not effective and efficient to use anymore because the current system cannot save, manage and monitor the restaurant waiter information, menu infant, customer ordering info don and generate Report well.

Objective

The objective of this project is to build an electronic restaurant management system using all of the skills and techniques from the field ensuring that no common development mistakes are reproduced. Project management is critical to all software engineering projects and keeping to a project plan will be of similar importance. One of the main objectives of any business is to maximize profit by increasing efficiency and decreasing overheads1 without compromising customer satisfaction. Currently, many restaurants use a Paper-based system to communicate between the restaurant and kitchen which can be shown to be one of the least efficient approaches. Even though this

approach is implemented in successful profitable restaurants, there are several problems which could be seen as reducing the restaurant's efficiency:

• Miscommunication caused by handwriting.
• Unmanageable order logging.
• Inefficient restaurant-kitchen communication.
• Difficult order tracking and time management.
• Difficult stock management.
• Limited statistical output.

By introducing an electronic restaurant management system these problems can be avoided or improved leading to an increase in profits. Based on the problems stated above, the objectives of the project are:

1. To develop an online ordering and reservation system in restaurants. To develop use interface for restaurant management system.

ii. to provide online menu information for customers.

Advantages of proposed system

During login the user has to enter his emailed/Use rid, password and desired time of order delivery. After successful login the customer can access the menu page with the items listed according to the desired time. Later within the available items he can search for a menu according to his choice i.e. according to price range and category of food and later he can order a meal.

If the customer later wants to cancel the order, he is permitted to do this only within a specific time period. The customer is also given the facility to view the status of the order and if the order is ready then he can go and get it.

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

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

Technical feasibilities

1. Encapsulation of services—the server is a specialist: when given a message requesting a service, it determines how to get the job done. Servers can be upgraded without affecting clients as long as the published message interface used by both is unchanged.
2. Integrity—the code and data for a server are centrally maintained, which results in cheaper maintenance and the protection of shared data integrity. At the same time, clients remain personal and independent.
3. Location transparency—the server is a process that can reside on the same machine as a client or on a different machine across a network. Client/server software usually hides the location of a server from clients by redirecting service requests. A program can be a client, a server, or both.
4. Message-based exchanges—clients and servers are loosely-coupled processes that can exchange service requests and replies using messages.
5. Modular, extensible design—the modular design of a client/server application enables that application to be fault-tolerant. In a fault-tolerant system, failures may occur without causing a shutdown of the entire application. In a fault-tolerant client/server application, one or more servers may fail without stopping the whole system as long as the services offered on the failed servers are available on servers that are still active. Another advantage of modularity is that a client/server application can respond automatically to increasing or decreasing system loads by adding or shutting down one or more services or servers.
6. Platform independence—the ideal client/server software is independent of hardware or operating system platforms, allowing you to mix client and server platforms. Clients and servers can be deployed on different hardware using different operating systems, optimizing the type of work each performs.
7. Reusable code—service programs can be used on multiple servers.
8. Scalability—client/server systems can be scaled horizontally or vertically. Horizontal scaling means adding or removing client workstations with only a slight performance impact. Vertical scaling means migrating to a larger and faster server machine or adding server machines.

9. Separation of Client/Server Functionality—client/server is a relationship between processes running on the same or separate machines. A server process is a provider of services. A client is a consumer of services. Client/server provides a clean separation of functions.
10. Shared resources—one server can provide services for many clients at the same time, and regulate their access to shared resources.

Functional Specifications

a. During login, the customer has to enter the time of delivery, and the menu items will appear accordingly. As availability of items differ from time to time.
b. Customers can search the menu according to price range and the category as well, this functionality will be working as a search under search, i.e. the first search criteria will be time of order delivery (which is default for all cases) and the later will be search within those menus according to price and category.
c. Allowing customers to place an order or allowing him to cancel the placed booking.
d. Allow here a customer can create his new account or he can edit his personal information from the existing account.
e. Allow Customers are given a facility to change his existing password.

Management Specifications:

a. A manager can edit/create some or whole part of the menu record on a daily basis. That is by changing the menu items, prices, description, etc.
b. A manager can reassign the cook for a specific order or an item, originally the system assigns the cook automatically when an item is booked using some distribution fashion i.e. round robin fashion. So a member can reassign the cook if such a situation arrives.
c. A manager can cancel the order, this situation comes when something goes wrong with working or in some unusual situations.
d. A manager can create a new entry of a cook or edit the existing cook's information from the cook's list.
e. A manager can block a particular customer before signing up. This happens when the customer's previous history is bad, i.e. if he does not come up to take his orders which were ordered previously.
f. Allotting someone as previously stated a manager can create a cook, along with creation of a new cook he is given some privileges. The privileges include editing the status of the order, i.e. he can enter the status as ready if he has completed that item or can state the order is in process before preparing that item.

System Design

For giving the order, the user should become a member initially. User would have to install his information like the address and other key information so that he doesn't have to give his information each time. For signing up every customer has to give some this details such as address, name, contact no etc. and the most important is email ID which is the primary key to identify each customer uniquely, thus email becomes the User ID for the customer, immediately after submitting the form, a password is sent to respective Email ID so he can access the site and service.
The only thing needed here is to sign in to the system through browser and from any place where the internet is available. Now he would have the option to edit his current information and big things to reserve the meal diminishing the human interaction. He would have today's menu (according to the time of delivery which he has entered) in front of him and he had clear choices for order. He has a variety of things to do here and has the option to cancel the order before the specific time of completion. For the first time to access the system, the customer has to give his key information like identification and so on.
For the management side, it is quite possible to book many orders concurrently. System will be able to book nearly infinite number of orders at a time. Management side has more updated information and they can get the currently booked orders through the browser and all automatically. System will be able to deal with the customers who don't come to take their orders by blocking them and not letting them sign up again. This is done by maintaining some information regarding the status of order and the relative customer.
By the Management perspective, we will be imposing some privileges so that only an authorized management staff/User can alter the contents of the site. The system also traces which user had altered the contents of the site, as each user at the management side is provided with a unique User ID.

At the management side we have usually two types of the users, one the manager and the other is cook, the later can only alter or deal with the status of the ordered items, which he was given to complete. And the former can do

all the updates required at the management side such as reassigning a cook, editing menu items, it's prices, descriptions, edit order status or can block some users if the situation demands.

Description

Customer information:

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

Menu:

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

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

Ordered Item:

This table provides information to the management staff regarding the uniquely generated ordered, which may contain one or more menu items uniquely identified by Item ID:

Apart from this, the management can check/alter the status of the order along with, they can alter the cook/s which was previously assigned to fulfill the order (as each cook is uniquely identified by cook ID), this can be done by the management staff by logging in with User ID. A cook can place status over this entity regarding the status of the specified item is ready for delivery or not!!This is done by using a uniquely provided cook ID.

From the customer's perspective, the customer can check the status of his order in detail i.e. the status of each item in his order from this table as well as the quantity he ordered, the latter can also be helpful at the management side. This entity shares 1: N relationship with the Menu table.

Order:

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

This table shares N:1 relationship with the Customer info entity.

Cook:

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

Cook Spec:

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

Management:

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

Scope

This section consists of three components which is target user, target area and

Project deliverables.

Target User

The groups of user that had been identified to use the system are customer and

Administrator.

Customer

This user will register to be a member to use the online system of this Restaurant management system. This online ordering divided into two type of custom, it is customer dine-in ordering and takeaway ordering. For dine in ordering, the customer will view the menu, make online ordering and make a reservation table. But take-away ordering, customer can view menu and online ordering without reservation table. After customer make online ordering, customer can take ordering the date that customer was chosen during online ordering. Event though, customer must confirm online ordering with restaurant three days

before customer take the ordering for dine-in customer and for take-away customer will be confirm one hour before it whether by email or phone. Administrator is the person who will manage the entire system. This type of user will also do maintenance and control the application of this system. Administrator takes a responsibility to register new customer, register new waiter, register new menu into database, and etc.

Target Area

This system will be placed at restaurants.

Project Deliverables

Regarding to the module that had been identified, the flow of an activity will be
Described in term of customer registration module, customer online ordering and
Reservation module, waiter module, feedback module, menu module and generate report
Module.

Customer Registration Module

Customer registration module contains customer's information such as customer
Personal information and other information related to that customer. Then, all of this
Information recorded into the database.

Customer Online Ordering and Reservation Module. Customer online ordering and reservation module provides a form that needs to be fulfilling in terms of ordering food and reservation tables via online.

Waiter Module

Waiter module contains waiter information such as waiter personal information, task schedule and other information related to that waiter. Then, all of this information recorded into the database.

Feedback Module

Based on food or everything about the restaurant, customer can send any suggestion or comment to the restaurant with feedback form. From this form, side of restaurants will know their weaknesses and strengths.

Menu Module

Menu module is food that the restaurant prepares for customers. This module, the customer can view the menu and make decisions for order.

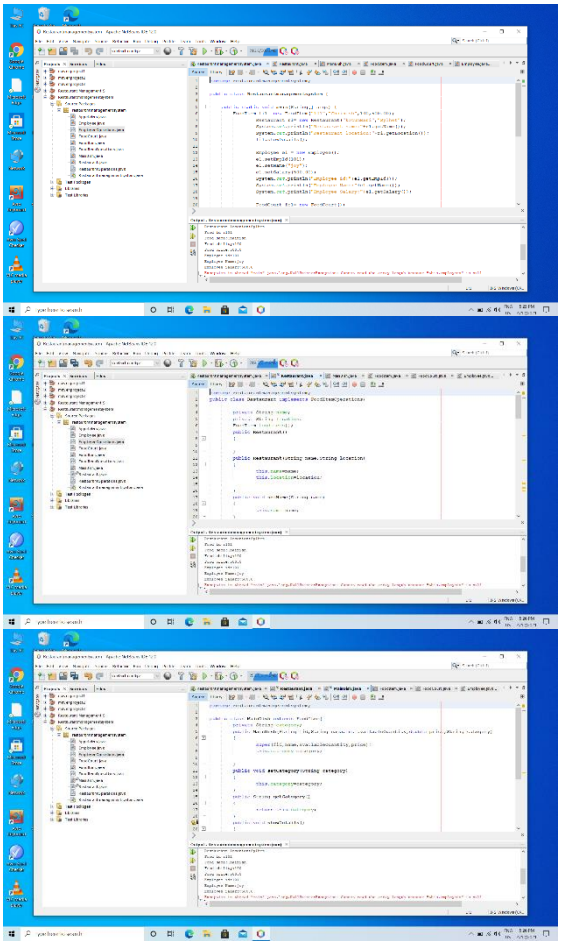
Generate Report Module

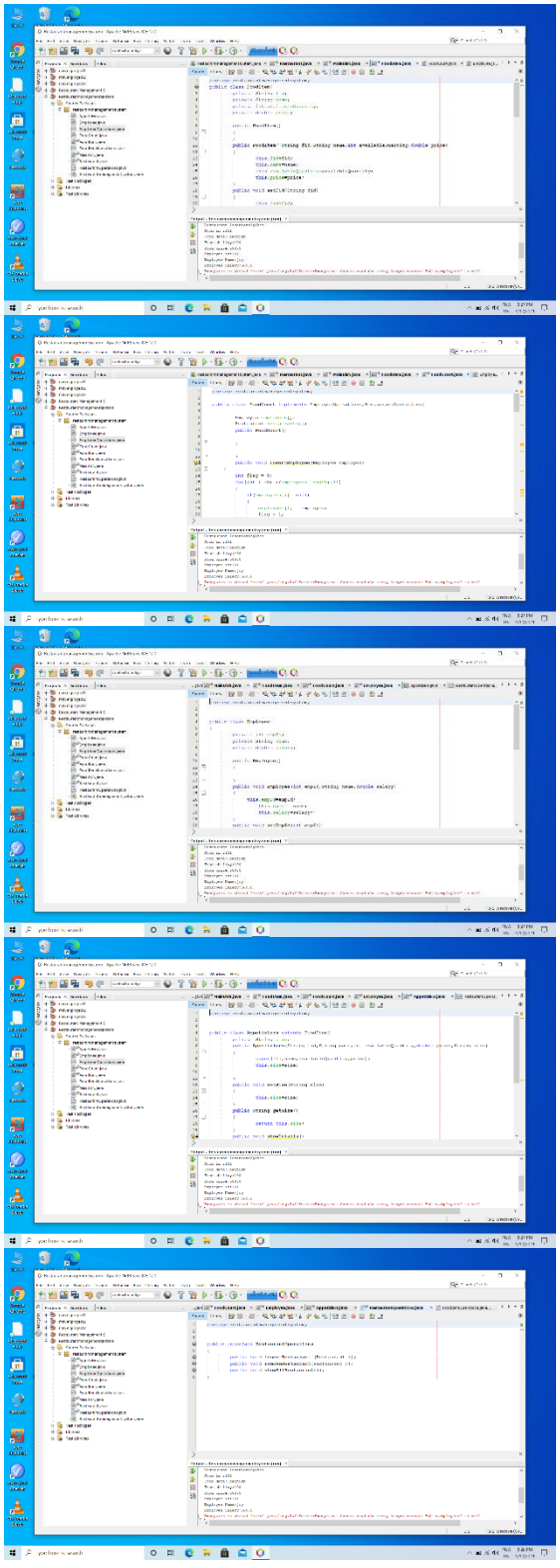
System provides an option for generating a report. The contents of the report as the following:

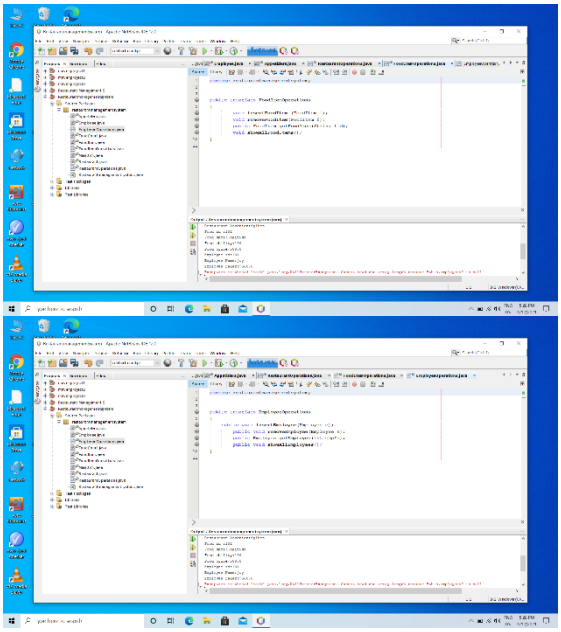
1. The report of customer ordering and reservation table.
2. Customer's information and waiter information. 3. Suggestion or comment that customer insert at feedback form
4. Hit business for restaurant

This system will be going to help customer and administrator in restaurant especially part of online ordering and reservation tables. Most of restaurant has a problem of the ordering and reservation table. The result of online ordering and reservation table will give customer easy to make ordering and reservation table online and hopefully can smoothen up the job of administrator and waiter. This system also produces a computerized system in defining the best solution in each ordering and reservation
Problem faced by customer and administrator.

Some Screen shots of our Project





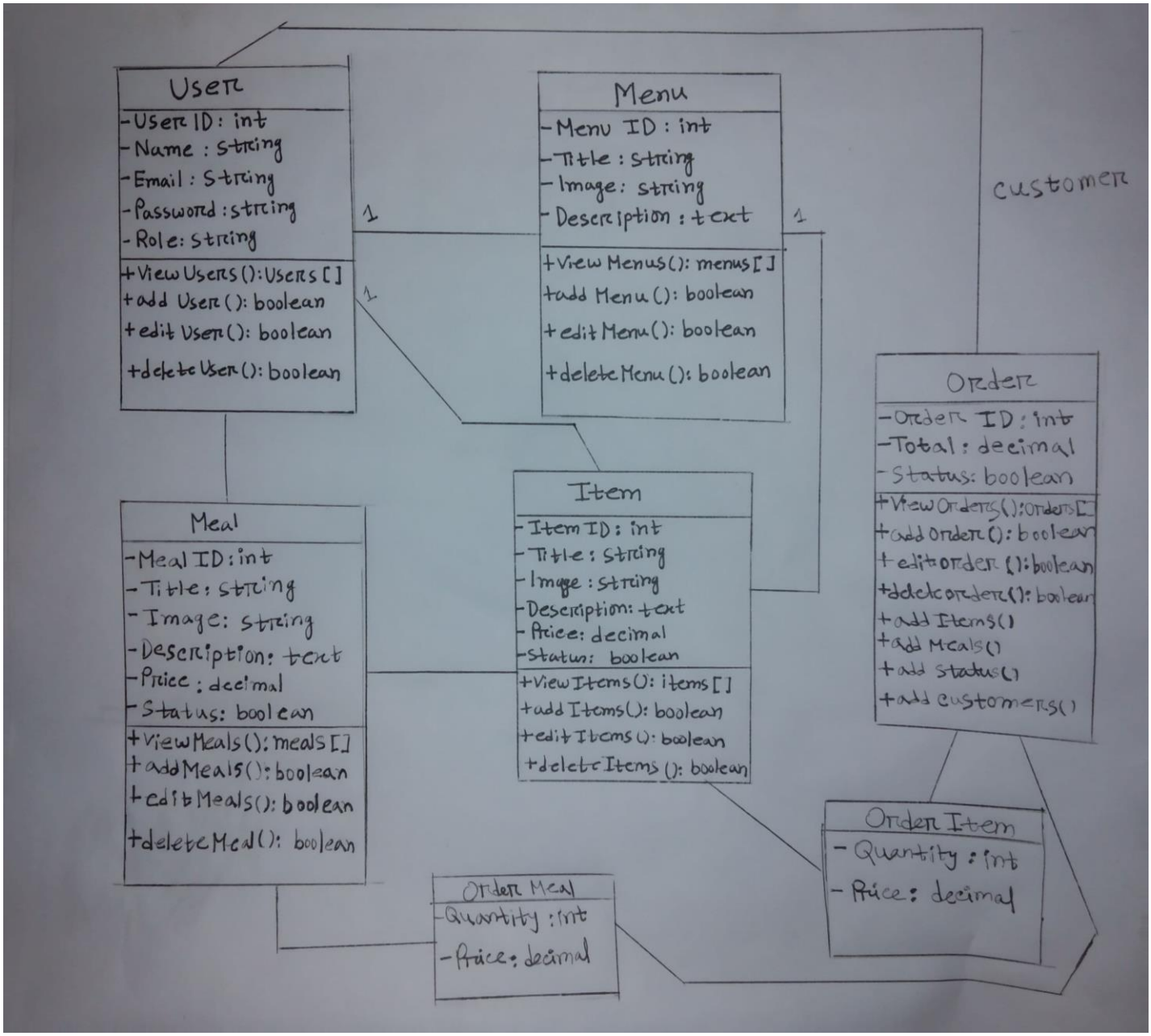


UML Diagram

Restaurant Management System

Class:

- **Appetizers**
- **Employee**
- **Employee Operations**
- **Food Court**
- **Food Item**
- **Food Item Operations**
- **Main Dish**
- **Restaurant**
- **Restaurant Operations**



Expected Output

The expected output from this project is a system-- that will be able to store customer's information, waiter's information, menu's information, store customer information of online ordering and reservation information and customer's suggestion and generate profit business reports. Otherwise this system will change form manual system to computerized system.

Conclusion

Restaurant Management Systems are developed as a system-based. Chapter I described each problem occurred by using the manual system. Project objective and project scope identified the solution for each of the problems. Project Significance also being explains to convince benefits that can be gathered from this system. This system hopefully can overcome the problem in the current system.