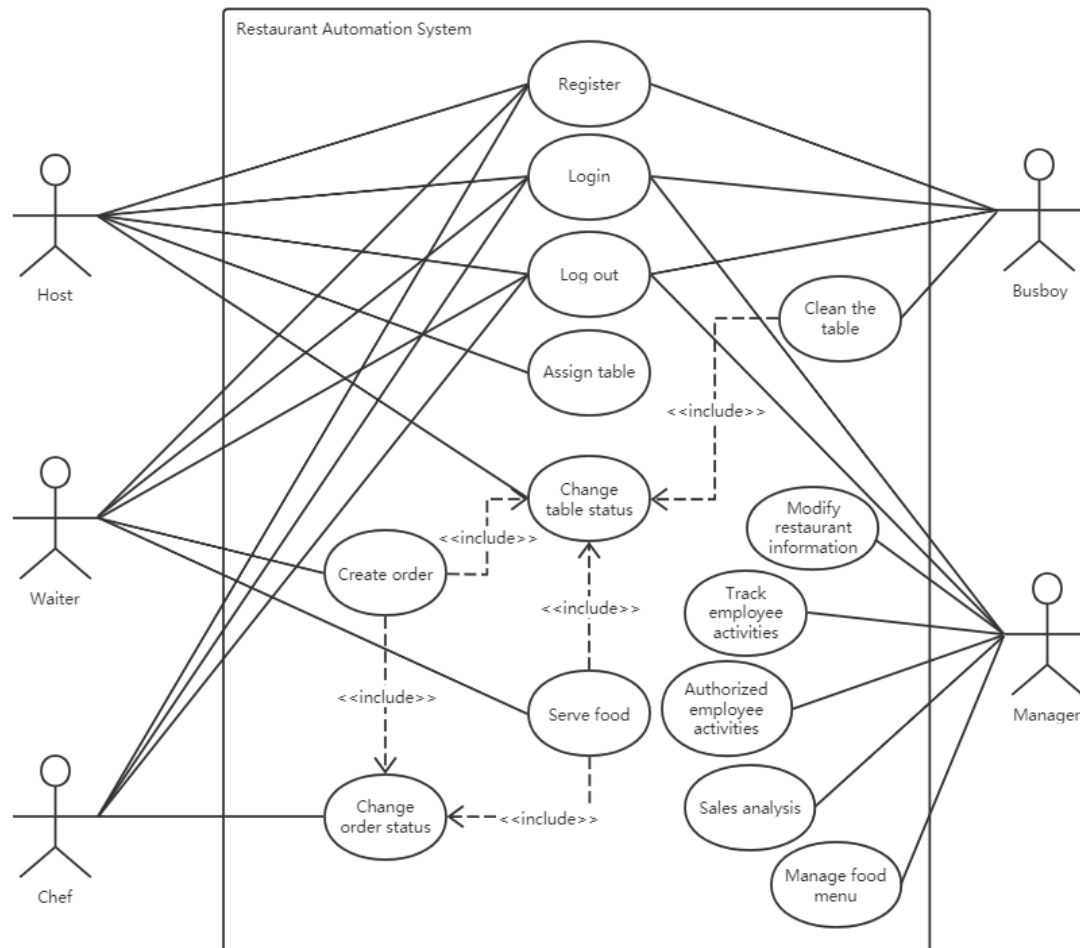


CPTS 583 Software Quality Deliverable 1-2

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1.1 Use case diagram



1.2 Use case elaboration

Use Case	Register
Actors	Host, Busboy, Waiter, Chef, Manager
Goal	Add new users to database.
Precondition	User does not exist.
Scenarios	<ol style="list-style-type: none"> 1. User inputs username, password, first name, last name and role. 2. Click register button.
Exception	<ol style="list-style-type: none"> 1. Same username exists in the database. 2. Irregular input length.
Postcondition	User is created.

Use Case	Login
Actors	Host, Busboy, Waiter, Chef, Manager
Goal	To login into the system
Precondition	User does not login before
Scenarios	1. Input username and password, then click login button. 2. User logs in the system.
Exceptions	Incorrect username or password.
Postcondition	User logged in.

Use Case	Logout
Actors	Host, Busboy, Waiter, Chef, Manager
Goal	To logout the system
Precondition	User is in the system
Scenarios	Click on the logout button
Exceptions	None
Postcondition	User logged out.

Use Case	Assign table
Actors	Host
Goal	Assign table to waiter to serve customers or busboy to clean the table.
Precondition	The table is available to assign.
Scenarios	1. Select a table. 2. Assign the table to a waiter or busboy.
Exceptions	The table is unavailable or breakdown
Postcondition	The table is assigned.

Use Case	Create order
Actors	Waiter
Goal	To create an order for the customer.
Precondition	Waiter logged in to the system.
Scenarios	1. The waiter selects several foods from the menu. 2. Click checkout button to create an order.
Exceptions	None
Postcondition	The order is created.

Use Case	Change table status (Busboy)
Actors	Busboy
Goal	To set the table status from dirty to clean.
Precondition	The table is dirty.
Scenarios	1. Select the table which is dirty and clean the table. 2. After cleaning the table, change the status from dirty to clean.
Exceptions	If busboy is too busy to change the status, the host will have the authority to do it.

Postcondition	The table clean status is changed to clean.
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Use Case	Change table status (Waiter)
Actors	Waiter
Goal	To change the status of the table, that is, whether the table is in use.
Precondition	The table is in use or not.
Scenarios	1. Change the status from free to busy or busy to free.
Exceptions	If waiter is unable to change the status, the host has the authority to do it.
Postcondition	The table clean status is changed to busy or free.

Use Case	Change table status (Host)
Actors	Host
Goal	To change the status of the table, that is, whether the table is dirty.
Precondition	The table is clean.
Scenarios	1. Change the status from clean to dirty.
Exceptions	None.
Postcondition	The table clean status is changed to dirty.

Use Case	Change order status (Chef)
Actors	Chef
Goal	To manage the order status for a table.
Precondition	The order is created, and the food is not ready.
Scenarios	1. Chef receives the order. 2. Click the food ready button. 3. The food of the order is ready
Exceptions	None.
Postcondition	The order status denotes that the food is ready.

Use Case	Change order status (Waiter)
Actors	Waiter
Goal	To manage the order status for a table.
Precondition	Food is finished.
Scenarios	1. The waiter brings the food to customers. 2. After the waiter serves the food for customers, click on the order finish button.
Exceptions	None.
Postcondition	The order is finished

Use Case	Track employee activities.
Actors	Manager
Goal	To track each employee based on login and logout time.
Precondition	Manager logged in to the system.
Scenarios	1. Select employee from the list.

	2. View employee's detail and activity.
Exceptions	None.
Postcondition	Details of the selected employee has been viewed.

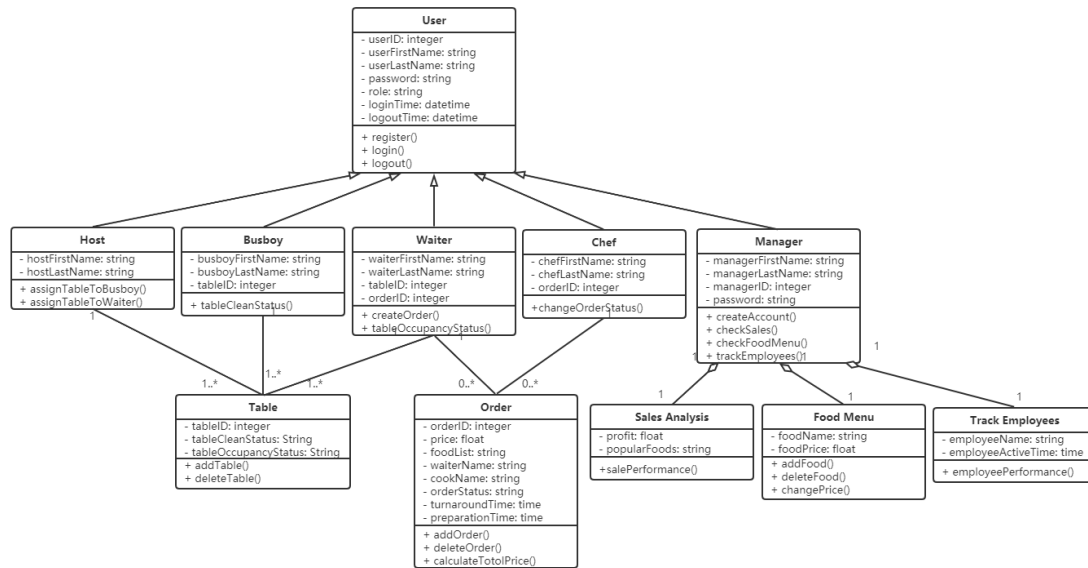
Use Case	Sales Analysis
Actors	Manager
Goal	To manage the popularity of food items, view sales and revenue.
Precondition	Manager logged in to the system.
Scenarios	1. Select the popularity from the list and view or manage food items popularity. 2. Select sales from the menu and view sales of each food item or the total sales.
Exceptions	None.
Postcondition	Sales has been analyzed.

Use Case	Manage food items.
Actors	Manager
Goal	To manage food items in the menu according to popularity.
Precondition	Food items list has not been modified.
Scenarios	1. View sales of each food item. 2. Add or delete food items in the list.
Exceptions	None.
Postcondition	The food list menu is modified.

Use Case	Authorized employee activities.
Actors	Manager
Goal	To assign additional work to a selected employee.
Precondition	Duty has not been assigned
Scenarios	1. Select an employee from the list. 2. Assign work by providing a note in the text box provided.
Exceptions	None.
Postcondition	New duty has been assigned to an employee.

Use Case	Modify restaurant information.
Actors	Manager
Goal	To modify the restaurant information.
Precondition	Manager logged in to the system.
Scenarios	1. Open the restaurant information. 2. Modify the restaurant information.
Exceptions	None.
Postcondition	The restaurant information has been changed.

1.3 Class Diagram



1.4 Quality Plan

Product Quality	Quality Goals	Quality Metrics	Strategy
Reliability	The system should produce correct output sequences at all times.	The system must be working correctly 98% of the time.	Do stress testing.
Usability	The system should be easy for every user to use it	The system should have an understandable user-interface.	Remote usability testing.
Efficiency	The system should be response smoothly	The system should respond to the commands in less than 1 second.	Unit and integration testing.
Learnability	A new user should be able to conveniently learn the system.	A new user should be able to operate the system efficiently.	Provide the software to new users.
Robustness	All the functionalities should work well.	All the conditions and functions are running smoothly with zero errors.	Testing functions on different kinds of inputs.
Compatibility	The system should work both on computers and mobile phones.	All the functionality of the system should work properly on both computers and mobile devices.	Use different devices to test compatibility.

Process Quality	
Purpose	To predict the cost and function of the process and product in order to plan of it, and to evaluate the process and product in order to understand and improve it.
Perspective	Examine the effectiveness from the viewpoint of the restaurant employees and manager so that any new employee will be able to learn to operate the software conveniently and efficiently.
Environment	The restaurant employees may have no or less experience of using the software product. The restaurant employee will have miscommunication with each other regard to the process of running the task.

1.5 Costs of quality

Task Name	Estimated Effort (hours)	Implementation	Evaluation	Prevention	Rework
Project planning	10	9	0	0	1
Infrastructure setup	3	3	0	0	0
UI Design	20	15	2	0	3
Initial Project development and Unit Testing	55	35	5	5	10
Quality Assurance - Integration testing	25	10	5	5	5
Software Bug Correction	30	15	0	0	15
Total	143	87	12	10	34