Food Court Transaction

Software Requirements Specification

Submitted By

Akshay Malav(B16CS003)

Lovish Singla(B16CS013)

Revision History

Date	Version	Description	People
12 Feb 2018	1.0	First draft	Developers: Akshay Malav , Lovish Singla Maintenance: Akshay Malav, Lovish Singla

Content

OBJ

Software Requirements Specification

1. Introduction

1.1 Purpose

The purpose of this Document is to elucidate the functionalities of the Food court transaction system .It also explains step by step how to use the software, that is act as a guide to the person who is using it for the first time . It also talks about the constraints, the prerequisites and the special features the system have. Proper explanation has been given wherever required . This Document will not only help the clients but also the developers who wants to improve the software further.

1.2 Scope

In today's world speed matters and it matters the most when it comes to food. People want to place their order quickly and get their food as soon as possible. So there is a need of a software/system that is fast, efficient and error free. So the need for a efficient software is there.

This software provides the functionalities to the food court team. The registered receptionist can take order form the customer , have to update the stock corresponding to the items that are sold and give the customer a bill of the food items purchased. Manager can keep track of the employees that are working in the food court , can make changes in the stock if required and can also see the report which will help the manager to decide an optimal price for a particular product to increase the sale.

Also the salary is given to the receptionist according to the sale he/she makes . All the taxes are also incorporated in the final bill.

1.3 Constraints

- A receptionist can't make changes in the stock except when he/she is taking the order.
- Manager can't take the order.
- A receptionist cannot view the report.
- A receptionist can't change his/her username.

1.4 Assumptions and Dependencies

- Whenever a input is required from the receptionist or manager , they should enter input in the correct format.
- The making cost of a particular product is constant over a period of time.
- There are only two type of products, one on which GST is applied and one on which GST is not applied.
- There is only one manager for the food court.

1.5 Definitions, Acronyms and Abbreviations

Term	Definition
Receptionist	A person who sits at the counter and take orders from the customers.
Manager	A person who manages the food court.
Customer	A person who place the order.

1.6 References

[1] The World Wide Web

[2]IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

[3] Cppreference.com, stackoverflow.com, tutorialpoint.com etc.

[4]UML @ Classroom: An Introduction to Object-Oriented Modeling , E Balaguruswamy Object_Oriented Programming With C++ etc.

2. Overall Description

2.1 Product Functions

2.1.1 *Functional Requirements*

(1) Take order

Input	The input will be given by the receptionist as the customer chooses the food item either in terms of the food id or if the id is not known then the food item name.
Output	The order will be placed.
Process	After the input has been taken from the customer ,the customer will be asked to confirm the order ,if the customer agrees then the stock will be updated and the bill will be printed and if the customer does not agrees then he/she will be asked to remove the food items that is no longer required.

(2) Show bill

Input	The input will be given when the take order use case is being executed .The input will be the name ,price, type of the food item.
Output	The bill will be printed.
Process	After the order is confirmed the details of the order such as name , price, type will be given to the billing class and the corresponding bill will be printed.

(3) Add receptionist

Input	The input will be the name , username, password of the employee to be added.
Output	The database which contains the list of the receptionists will be updated.
Process	This is the functionality of the manager. Manager will be asked to enter the name , username , password for the new employee to be hired.

(4) Update Stock

Input	The input will be either updating the values such as name, price, type, quantity or adding a new food item in the list
Output	The menu will be updated
Process	Only manager can update the stock , manager will be asked to enter the values as described in the input section after that the stock will be updated.

(5)Change details

Input	The input will be the details to be changed by the user.
Output	Details updated.
Process	The employee will be asked to enter the new name or new password and any changes made will be updated in the database.

(6) Remove receptionist

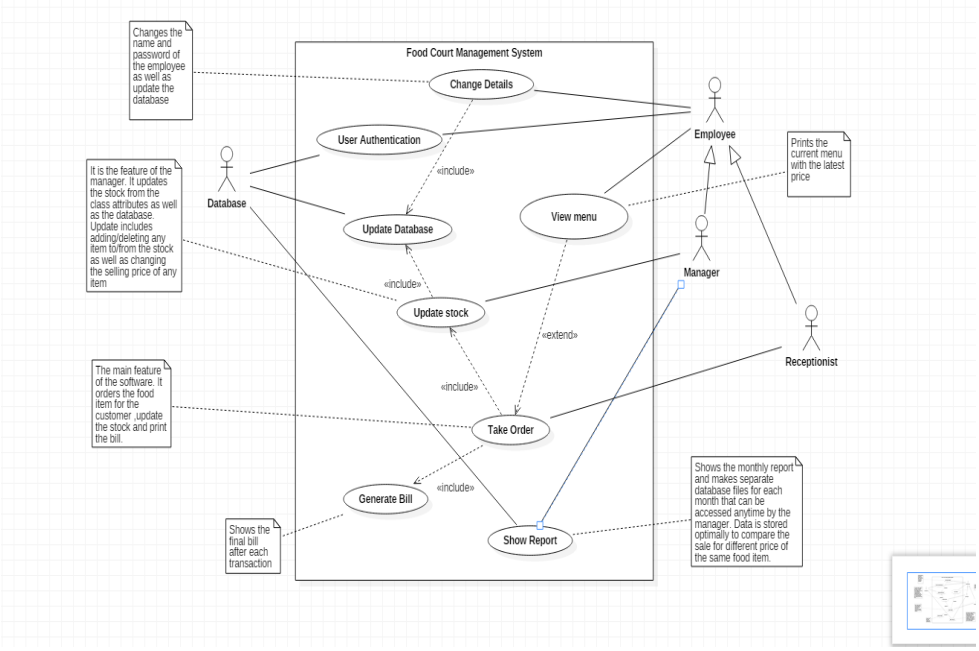
Input	The input will be the details of the receptionist to be removed.
Output	The receptionist will be removed from the database.
Process	The Manager will have to enter the values like, name ,username, password and if the match is found in the database then the respective employee will be removed and if not then will be asked again to enter the correct values.

(7) User authentication

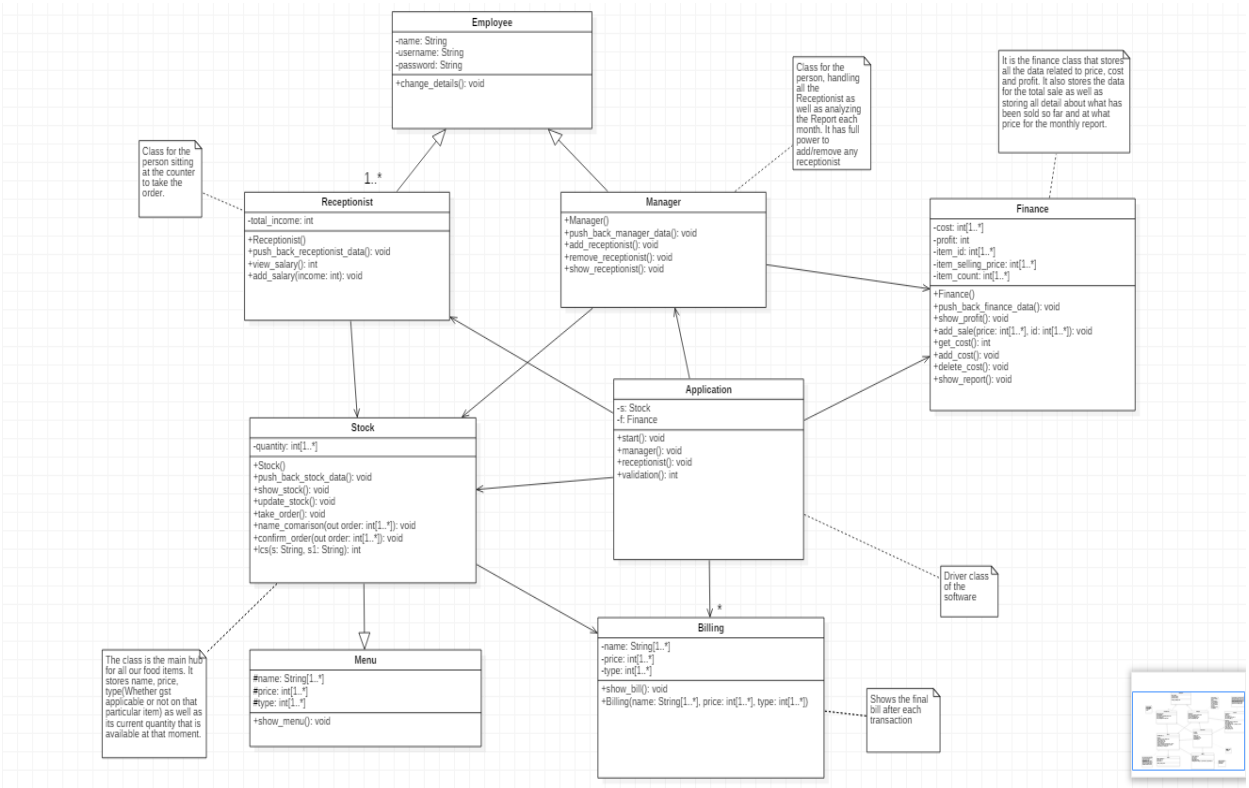
Input	The input will be the username and password of the user.
Output	User will logged in to the system.
Process	The input that is taken from the user will be checked in the database and if credentials matched then the user will be logged into the system.

2.1.2 UML Diagrams

2.1.2.1 Use Case Diagram

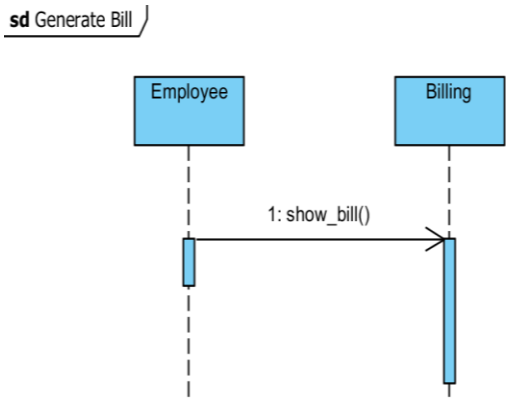


2.1.2.2 Class Diagram

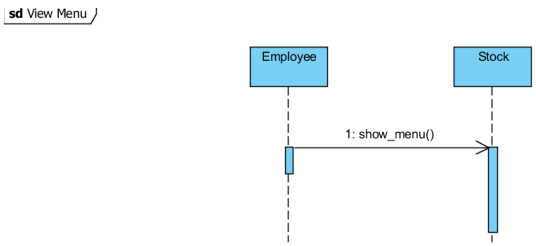


2.1.2.3 Sequence Diagram

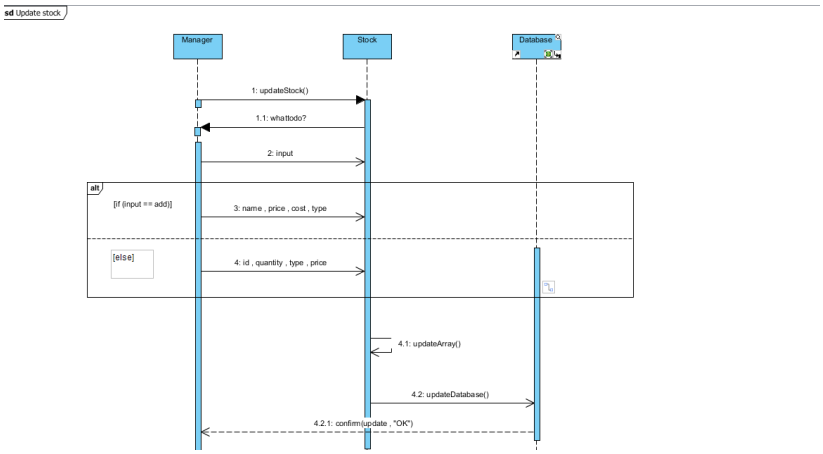
(I) Generate bill



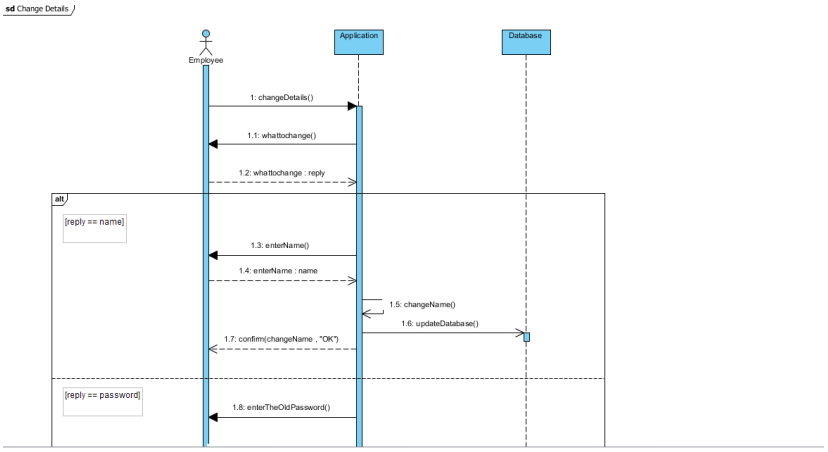
(II) View Menu



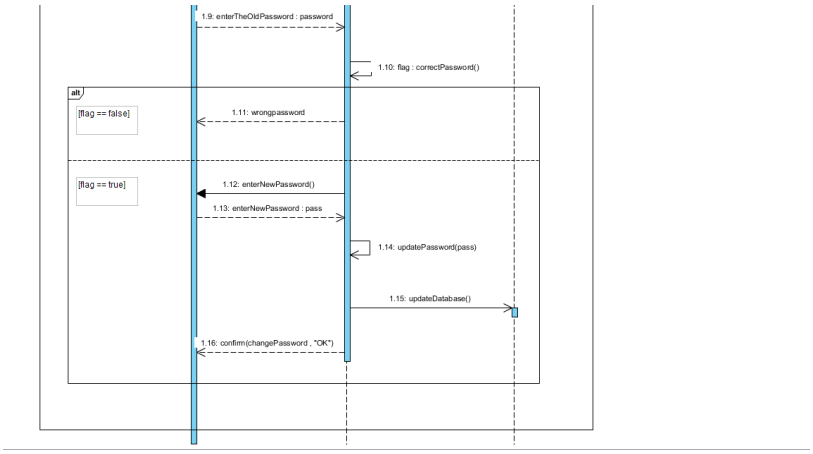
(III) Update Stock



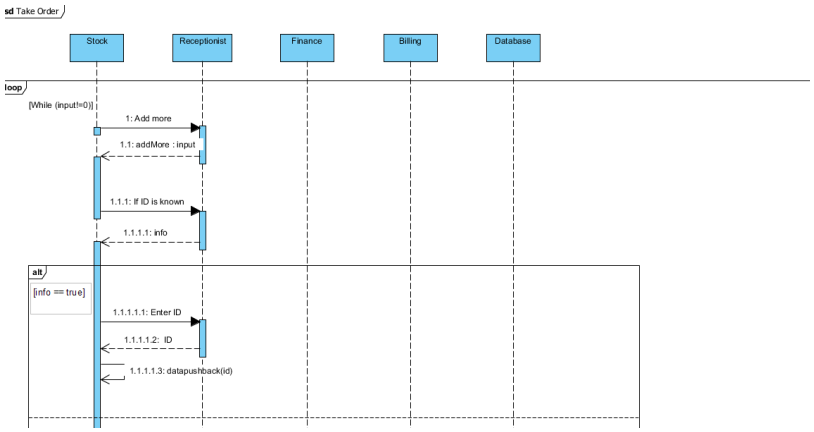
(IV) Change Details (i)



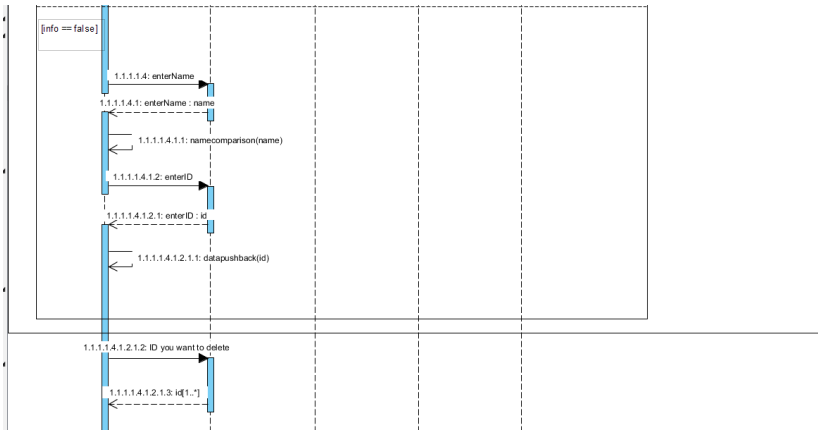
(IV) Change Details (ii)



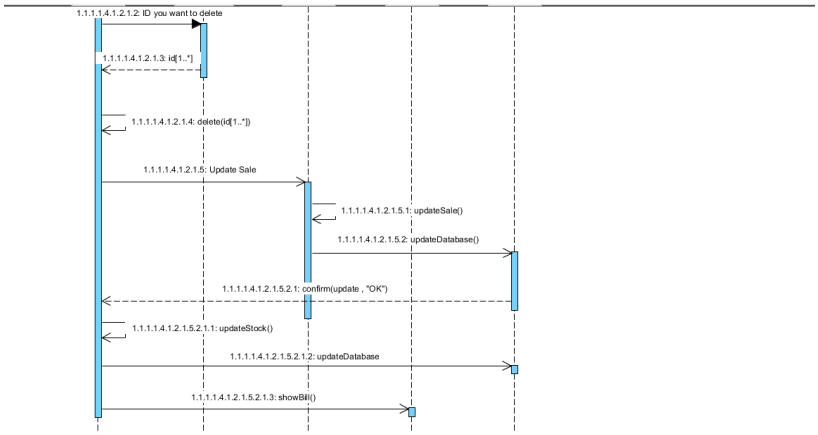
(V) Take order (i)



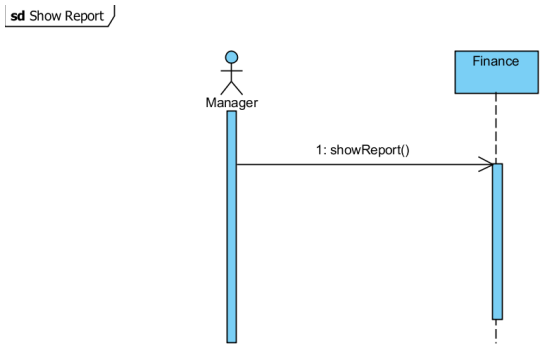
(V) Take order (ii)



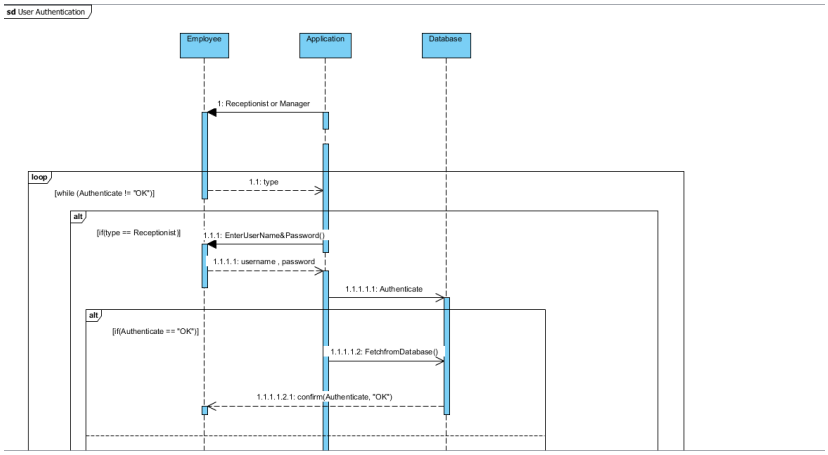
(V) Take order (iii)



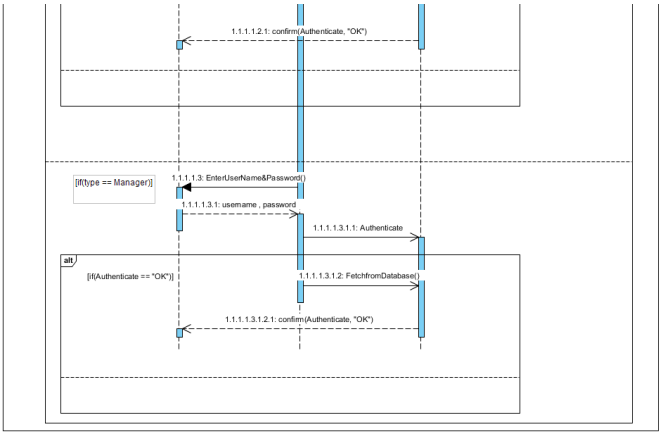
(VI) Show report



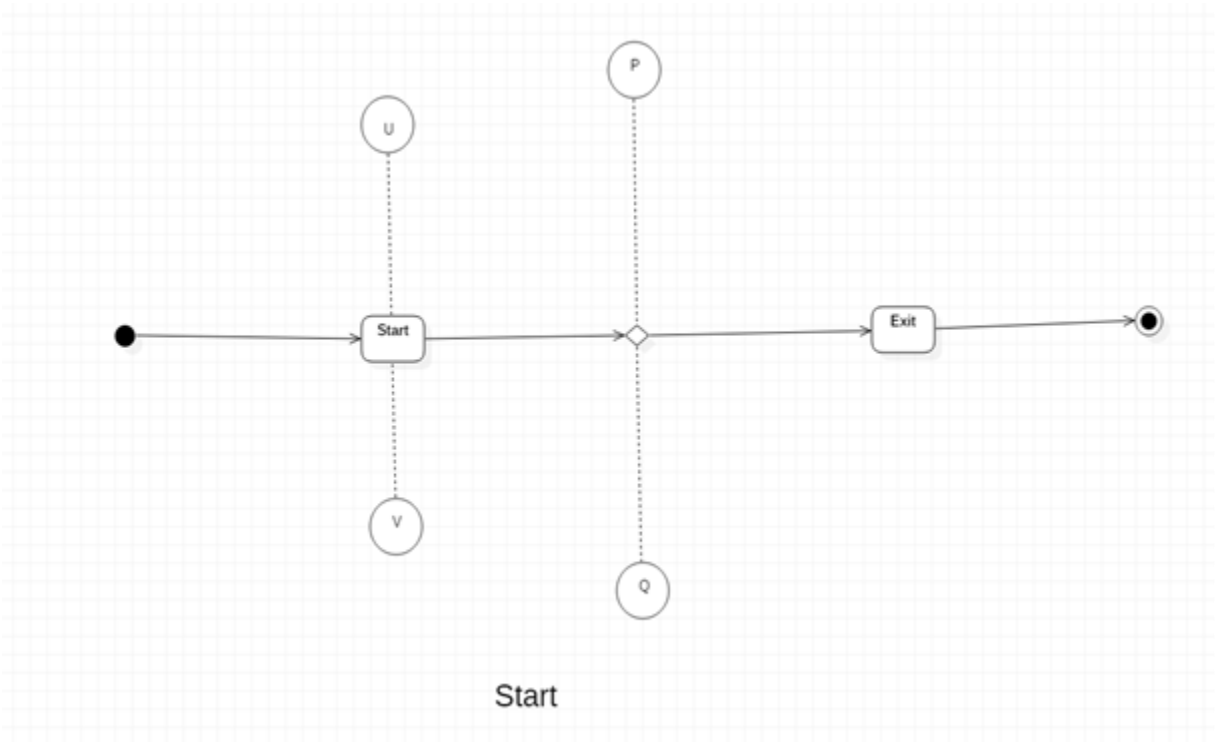
(VII) User authentication (i)



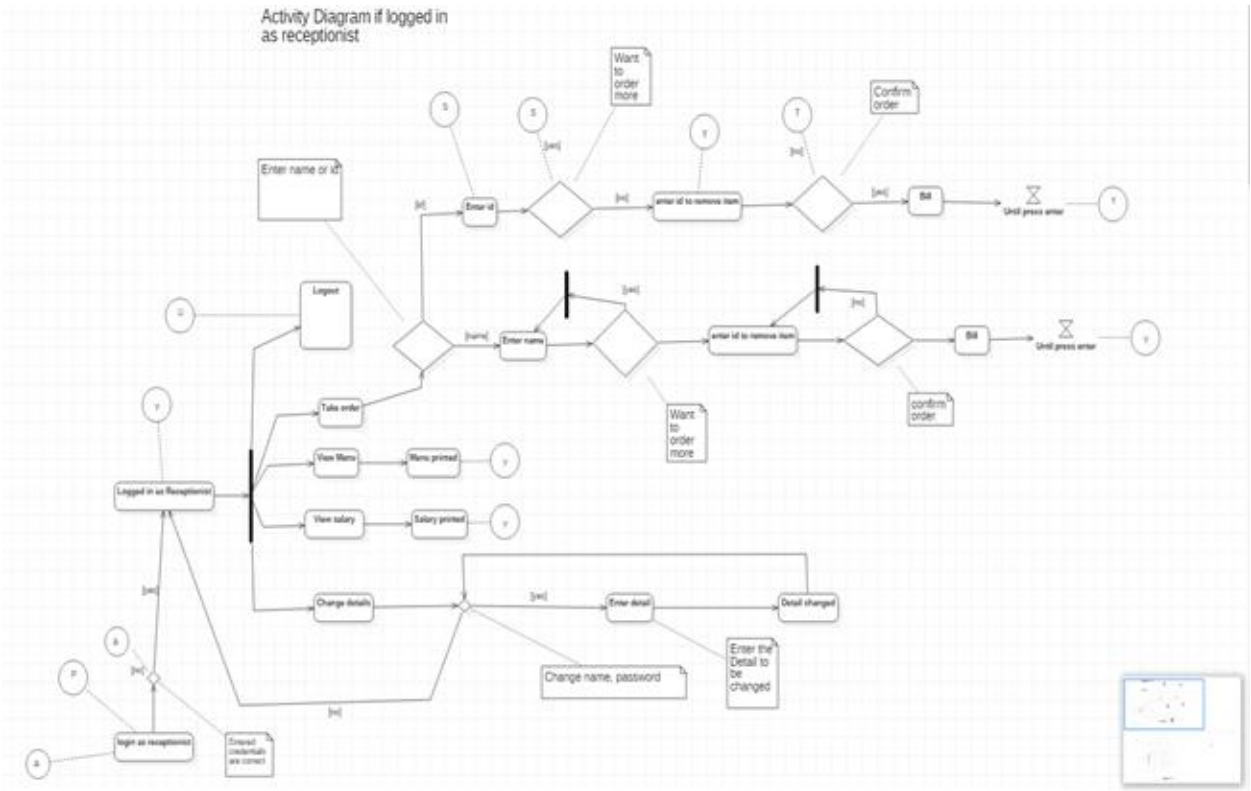
(VII) User authentication (ii)



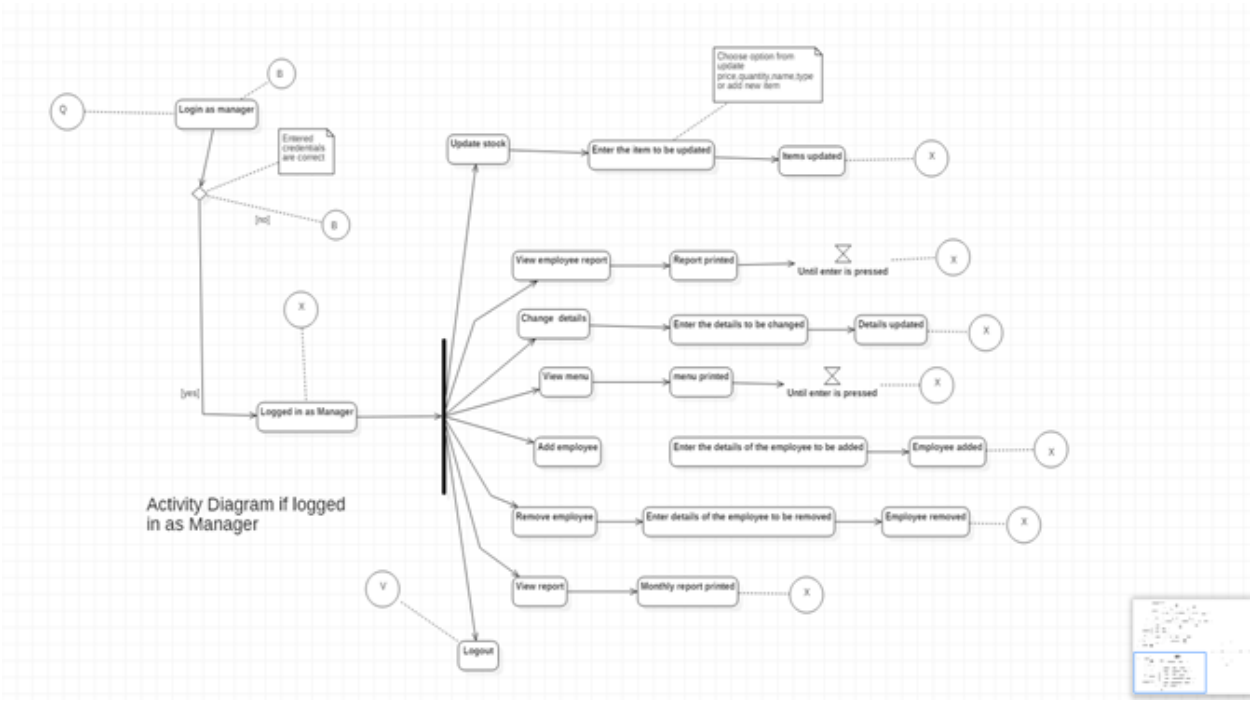
2.1.2.4 Activity Diagram



(I) Start



(II)Activity Diagram if logged in as receptionist



(III) Activity Diagram if logged in as Manager

2.1.3 Non-Functional Requirements

This software is designed and developed for computers only. The computer should have a operating system which is the basic requirement of the software to function. Also access should be given by the computer to the software for reading or writing the data form the database which will be stored on the hard drive of the computer. The computer should not have any kind of viruses because it can harm the data stored in the database as well as the software.

2.2 User Characteristics

The software will be used by two type of users , one is receptionist and another is manager . Although the functionalities of both the users are different but both also share some common features.

A receptionist can take order whenever a customer comes , update the stock corresponding to the food items that are sold. Also he/she can view the menu whenever required . A receptionist can also view what total income he/she has earned through all the transactions that have occurred when he/she was on the counter. A receptionist can also change personal details like name, password.

The manager can view the monthly report which comprises of all the transactions that have occurred during a particular month .The manager can also view menu, change personal details like name , password (It is interesting to note that both these features are common between manager and receptionist). Manager can also maintain the stock by updating it whenever required and can also keep track of the employees(receptionists) by adding and removing them. Also the manager can view a full list of the receptionists.

3. Specific Requirements

3.1 Use case description

3.1.1 *Take order*

Name:	Take order
Short Description:	The receptionist takes the order from the customer.
Pre condition:	The receptionist has been given access to take order from the customer after being logged in to the system.
Post condition:	The order is placed and a bill is printed.
Error situations:	A particular item is not available.
System state in the event of an error:	The order is not placed and an error message is shown.
Actors:	Receptionist
Trigger:	Customer wants to place an order.
Standard process:	(1) The receptionist logs in. (2) Customer places an order. (3) The receptionist checks the availability of the items. (4) The customer confirms the order and a bill is printed. (5) And the stock is updated.
Alternative process:	(4')The item is not available. (5')An error message is shown.

3.1.2 *Show bill*

Name:	Show bill
Short Description:	A bill is printed corresponding to an order.
Pre condition:	An order has to be placed.
Post condition:	A bill is printed
Error situations:	An order is not placed
System state in the event of an error:	The bill is not printed and will be at the logged in page of receptionist.
Trigger:	A bill is to be given to the customer
Standard process:	(1) An order is placed. (2) A bill is printed.
Alternative process:	(1')The order is not placed. (2') The bill is not shown.

3.1.3 *Update Stock*

Name:	Update stock
Short Description:	The manager make changes in the stock.
Pre condition:	The manager has been given access to update the stock after being logged in to the system.
Post condition:	The changes that the manager would have wanted are being done.
Error situations:	The item to which changes are to be made is not present.
System state in the event of an error:	An error message is shown and manager is asked to enter the correct details.
Actors:	Manager
Trigger:	Manager wants to update the stock.
Standard process:	(1) The manager logs in using the credentials. (2) On the page manager chooses to update stock. (3) Manager is asked to update the stock. (4) All the changes that are made, are saved.
Alternative process:	(3')The manager thinks to not update the stock (4')Manager is redirected to it's home page.

3.1.4 *Show Report*

Name:	Show report
Short Description:	Manager wants to see the monthly report.
Pre condition:	The Manger has to login in order to see the monthly report.
Post condition:	The report is shown to the manager.
Error situations:	The manager enters invalid/incorrect login credentials .
System state in the event of an error:	Manager is asked to enter the credentials again.
Actors:	Manager, Database
Trigger:	Manager wants to view report
Standard process:	(1) Manager is asked to login. (2) Manager selects the option to view report. (3) Monthly report is shown to the manager

3.1.5 *Change Details*

Name:	Change details
Short Description:	An employee changes personal details.
Pre condition:	The employee have to login in order to change the details.
Post condition:	The personal details are changed.
Error situations:	While changing details the entered data is invalid.
System state in the event of an error:	The employee will be asked to enter it again.
Actors:	Employee
Trigger:	Employee wants to change personal details.
Standard process:	(1) The employee is asked to login. (2) Now employee can change personal details.

Alternative process:	None

3.1.6 *View menu*

Name:	View menu
Short Description:	The employee view the menu of the food court.
Pre condition:	The employee have to login to view menu.
Post condition:	The menu is shown to the employee.
Error situations:	The login credentials are invalid.
System state in the event of an error:	Employee will be asked to enter the credentials again.
Actors:	Employee
Trigger:	Employee wants to view menu.
Standard process:	(1) The employee will be asked to login either as a manager or as a receptionist. (2) Then employee chooses to view menu. (3) Menu will shown to the employee.
Alternative process:	None

3.1.7 User authentication

Name:	User authentication
Short Description:	The user will be authenticated.
Pre condition:	The user has to enter login credentials.
Post condition:	The user will be logged in to the system.
Error situations:	The login credentials are invalid.
System state in the event of an error:	Employee will be asked to enter the credentials again.
Actors:	Employee, Database
Trigger:	User wants to login.
Standard process:	(1) The user will be asked to login. (2) The credentials will be matched with the one in the database. (3) If they matched the user will logged in . (4) Otherwise will be asked login again.
Alternative process:	None

3.2 Reliability

3.2.1 *Maintenance*

The software will not allow multiple logins at a time. Only one login is permitted at a time. Database is separate from the software . Also the software is developed using concepts of object oriented programming which helped to keep the structure of the software in a well defined manner and easy to understand .All these factors made the maintenance of the software easy and fast.

3.2.2 *Maximum bug rate*

There will be a maximum of 1 bug/KLOC.

3.2.3 *Security Considerations*

The software is designed using object oriented concepts which makes sure that important data (attributes) is kept private.
Only authorized employees will be able to login and use the software. Since database is separated from software , in case of crash of software the data will remain intact.

3.3 Performance Requirements

3.3.1 *Response time*

Since the software is developed using c++ programming language the software runs very fast, that is in fraction of seconds. But the time increases linearly if the items in the menu or number of receptionists increases. Also the maximum time to print/show any information will not exceed 30 seconds.

3.3.2 *Capacity*

The database can store as much data as the hard drive permits. Also since the menu is stored in some stl the size should not exceed the maximum size of the stl .

3.3.3 *Scalability*

The software is designed for a single food court which has a local database and no connections with external networks. But there can be food courts which are organized by a single firm which have multiple outlets. So apart from the local database they should also have a one combined database so this software can be scaled by doing appropriate changes in the code.

3.4 **Supportability**

3.4.1 *Naming Convention*

All code is written as specified by the Hungarian Naming Convention. The variables are defined in a such way that are easy to understand and one can easily predict the functions that they form just by looking at the name.

3.5 **Design Constraints**

3.5.1 *Software Language*

This software is developed using c++ programming language. The software is not connected to any server it is hosted on a local system.

3.6 **Interfaces**

3.6.1 *User Interfaces*

The software will first ask for the client to login according to the role of the user , that is either as a manager or as a receptionist . Then if the logged in person is a receptionist then he/she can take a order from the customer or can view their personal details .While taking an order if the receptionist does not enters the correct name of a food item then he/she is shown a list of names that are closest to the name that was entered by the receptionist.

If the logged in person is manager then he/she can change personal details, in addition to that manager can also hire an employee or can remove an employee from the job
Also manager will have an option of viewing a monthly report if wishes to do so.
All the interaction of the client with the software is through keyboard and computer screen ,that is client have to select the desired option through keyboard and then the output will be shown on computer screen.

3.6.2 *Hardware Interfaces*

The software will be executed on the computer and the input by the client will be given through keyboard. Also one would require minimum of 1 Gb of Ram and 1Gb of storage for the smooth functioning of the software.

3.6.3 *Software Interfaces*

The software interacts with the operating system, also there is a c++ compiler for the execution of the software . The software uses database which is stored in the local computer . Also it uses certain math libraries.

4. Supporting Information

Appendix (Definition)

(1) Actors – an actor in the uml specifies a role played by a user or any other system that interacts with the different type of use cases

(2) Attribute – an attribute is a specification that defines a property of an object, property or file

(3) Compiler – a program that converts computer instructions into a form that computer understands ,that is machine code so that it can be executed by the computer.

(4) Hardware – these are the physical parts of a computer.

(5) Hungarian naming convention – in this convention the name of the variables/processes/functions are named according to the work they do.

(6) Interface – an interface is a common/shared boundary across which two or more than two computer system exchange any kind of information.

(7) KLOC – it is the measure of the size of the computer program.

(8) Manager – a person who manages the work and growth of an organization.

(9) Receptionist – a person who sits at the counter or at the entrance of an organization to greet people.

(10) Software – it is the part of the computer system that consist of computer instructions ,data ,programs etc.