Design Document

for

Project Management System

Version 0.1

Prepared by Deepak M:
(Based on SRS Version 1.0 prepared by Deepak M)

Project Owner: **Ms. Saritha Murali**
Course: **CS4097D Object Oriented Systems Laboratory**
Date: **18-10-2021**

Glossary

| DB	Database
SRS	Software Requirement Specification
RMS	Restaurant Management System
Item	Single serving of food
Order	Comprises one or more items
Menu	Surface computer representation of the available items and other options

Table of contents

1. Detailed Design through UML diagrams

1.1 System model using Class Diagram

Class Diagram in the Unified Modelling Language is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods) and the relationships among classes.

1.1.1 Class Diagram
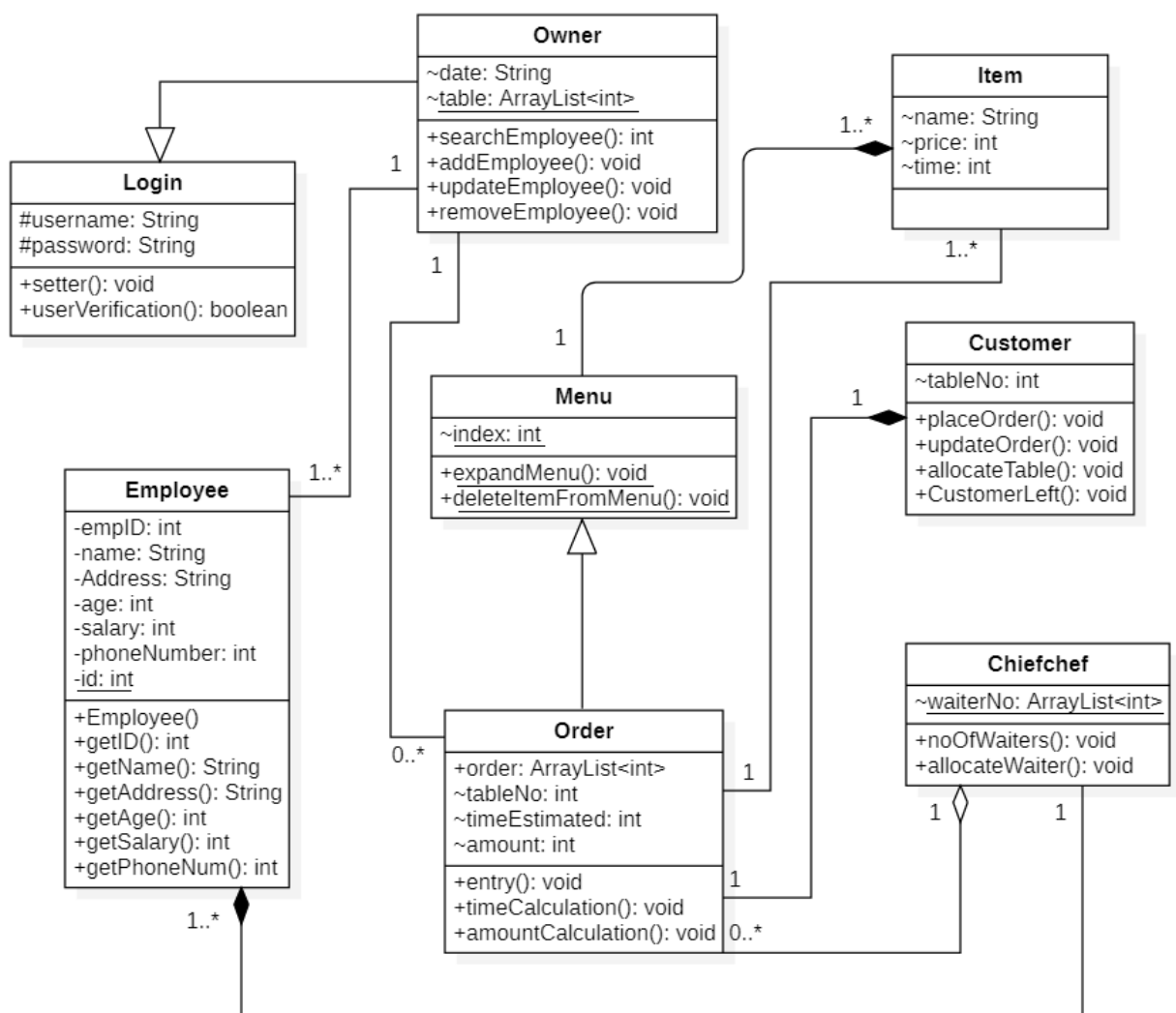
1.2 System Interactions through Sequence Diagrams

Sequence diagrams are interaction diagrams that show the sequence of messages exchanged by the set of objects performing a certain task. A sequence diagram shows, as parallel vertical lines (lifeline), different processes or objects that live simultaneously, and as horizontal arrows, the messages exchanged between them, in the order in which they occur.

1.2.1 Owner login sequence

The below sequence is designed for the owner to access the main page via logging in. The owner is expected to feed login credentials to access the information. Since the restaurant details regarding employees and transactions are meant to remain private, S/W is designed to support the login of the owner only. In the case of registering, the first owner details are filled initially on setting up and later on only the owner has the access to register a new user (after logging in) since expecting only one manager/ owner for the restaurant. The S/W will check with the DB to verify the user. If the login is successful, the user can view the contents of the main page.
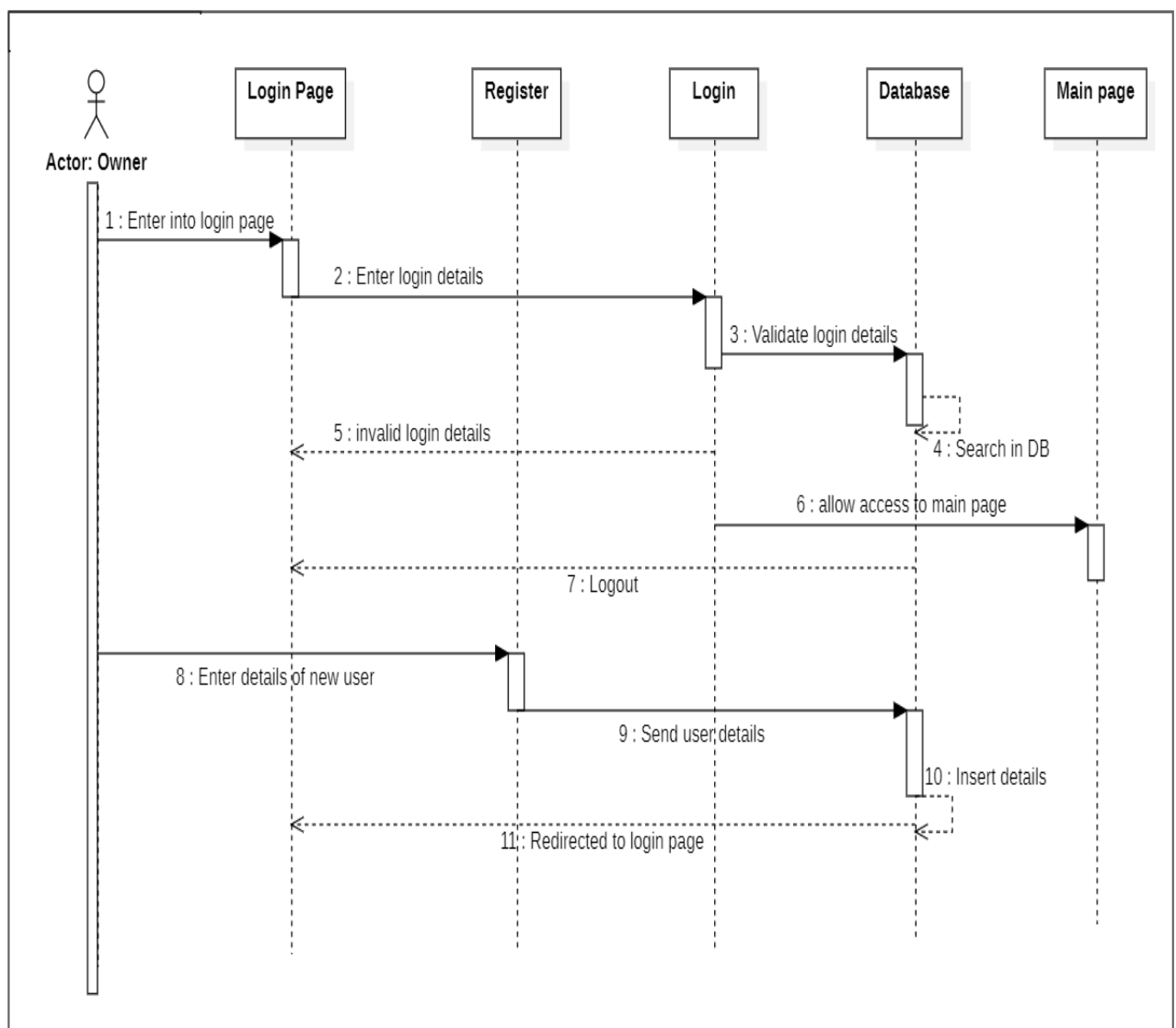
1.2.2 Owner sequence

The following owner sequence depicts the functionalities accessible for the owner/ manager. The diagram will lead through how the owner can access features provided on the Main page. After successful verification of user/ owner, he/she can view the details of all his employees in the restaurant as well as make necessary modifications regarding the same. The S/W here provide access to the menu of the restaurant where the owner can solely decide items to be placed and removed in the menu list. The orders that are placed can also be viewed along with the transaction carried out by the owner.
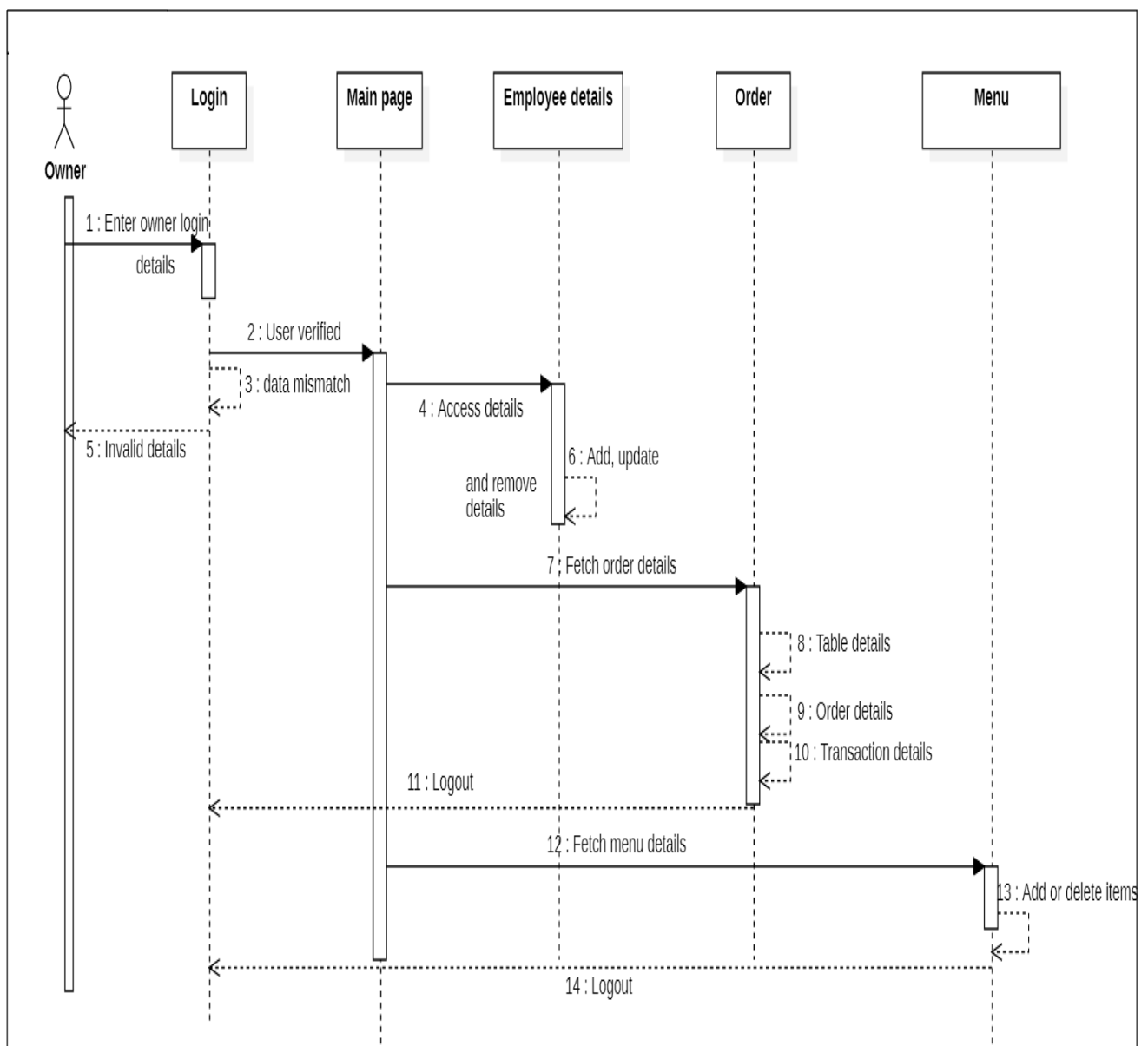
1.2.3 Chief chef sequence

The following sequence diagram is regarding the role of the chief chef in carrying out the follow-up procedure when customers place their orders. For the chief chef to view all the newly placed orders, he/she is supposed to first click on the chef option in the login page and thereby be directed to the order page. The order page will provide sufficient details of orders along with the table number. Then the chief chef will direct the order to the kitchen followed by allotting the waiter for that particular order. When the order is prepared, the waiter is supposed to deliver the items and the chef will remove the items from the order page (but not from the owner's order list).
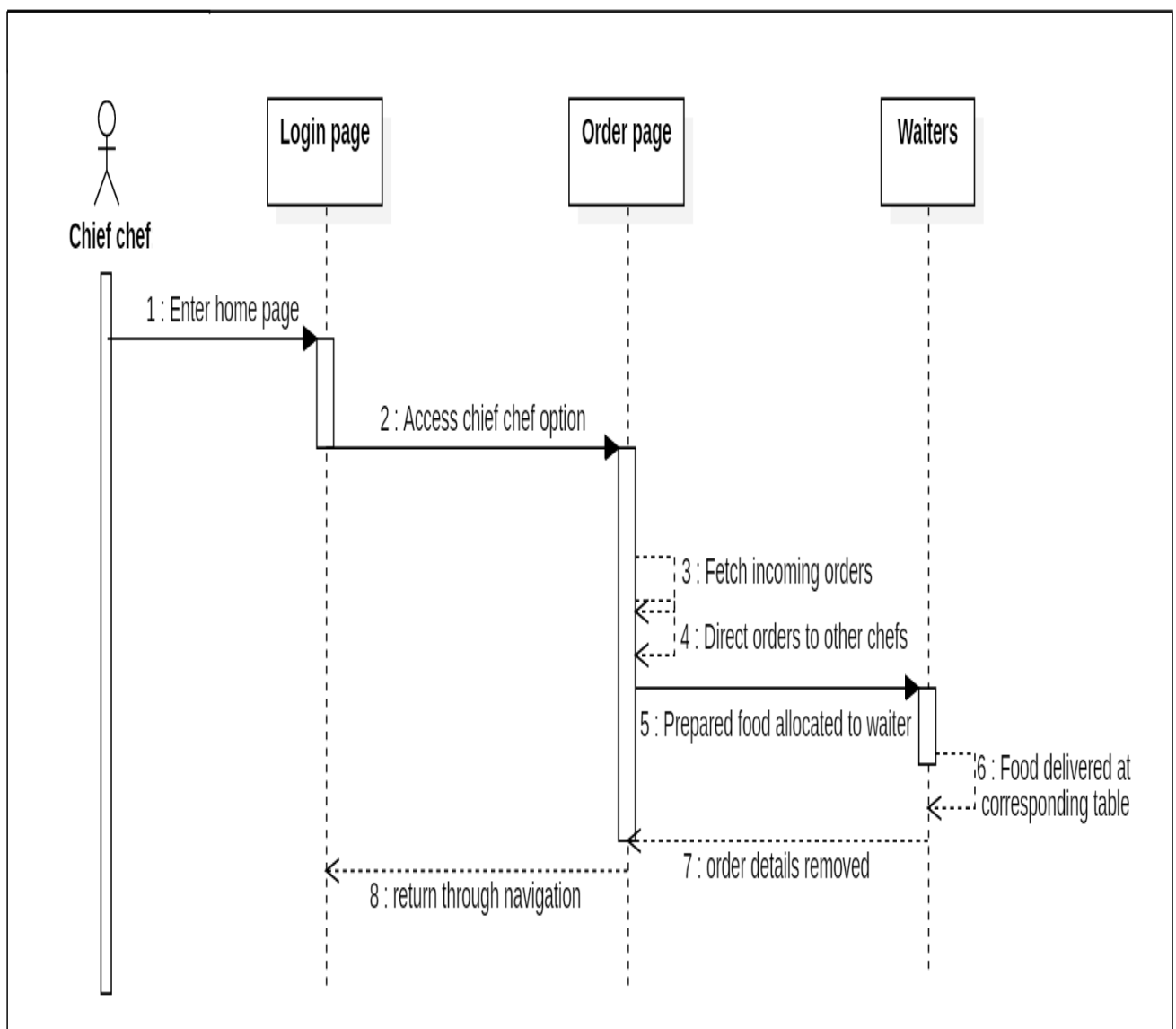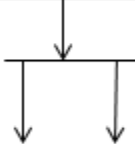
1.2.4 Customer sequence
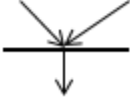
The customer sequence gives the idea of the functionalities available for a customer entering the restaurant. The login page will provide the option of 'customer', from where he/ she can navigate to the specific customer's order page from where the menu list will be provided. The customer can enter the item numbers from the order page and place the order and is immediately followed by the payment option. In case the payment is not successful the customer has to again start the above procedures from the login page. The customer is also provided with the functionality to order new items even after placing the main order but have to play instantly. The customer is supposed to click on leaving option before leaving the restaurant.
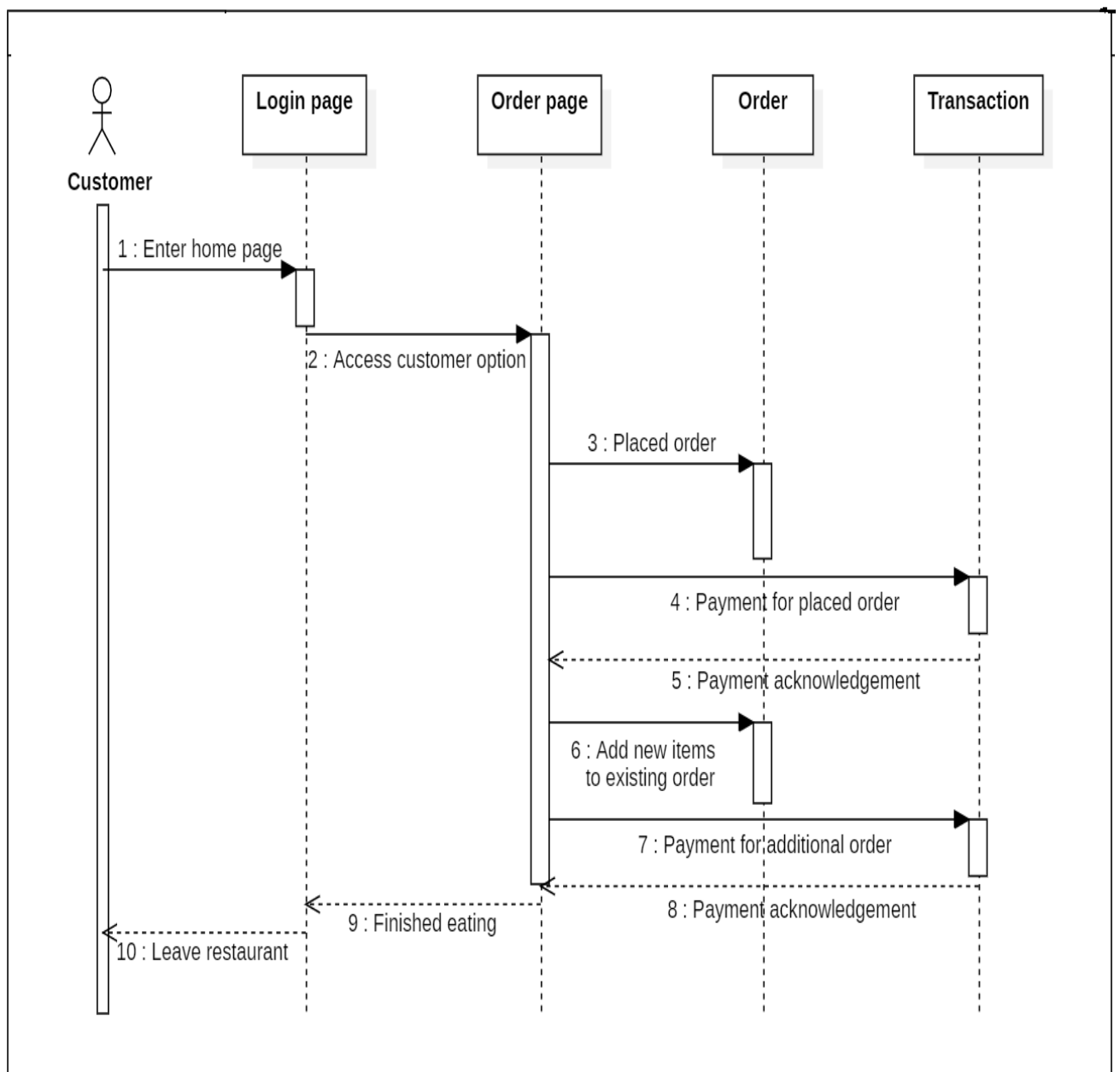
1.3 Control and Data Flows through Activity Diagrams

The Activity diagram depicts the flow chart of activities in the operation of the S/W. This will provide information regarding the dynamic behaviour of the system. Activities are a network of nodes connected by edges. Edges are used to show a path or a flow of execution. Activities start at an initial node and terminate at a final node.
The following table symbols provides the information regarding the basic symbols to be used while constructing a sequence diagram.

Sr. No	Name	Symbol
1.	Start Node	
2.	Action State	
3.	Control Flow	
4.	Decision Node	
5.	Fork	
6.	Join	
7.	End State	

Activity Diagrams are important during and before the development of any software system. It is very useful in documenting and depicting visualizing the exact process there by giving a simple view of complex system and steps involved in the developmental process. All the complex stages can be displayed very easily. Comments and labels can also be provided near to arrow for better details.

1.3.1 Owner Login Activity

The software is in the owner point of view is developed in such a way that there exists only one user as an owner at a time and the new registry can be done only by the present owner and is supposed to use that login credentials in the subsequent login process. Once the owner is registered, he/she have to provide the username and password (which will be provided by the developer to the first user/ owner).

         If the username and password are found mismatching on verifying with the database, the user is redirected to the login page where he/she has to login again with the correct login credentials to get permitted to view the information and make manipulation to the data being present in the main page/ DB.
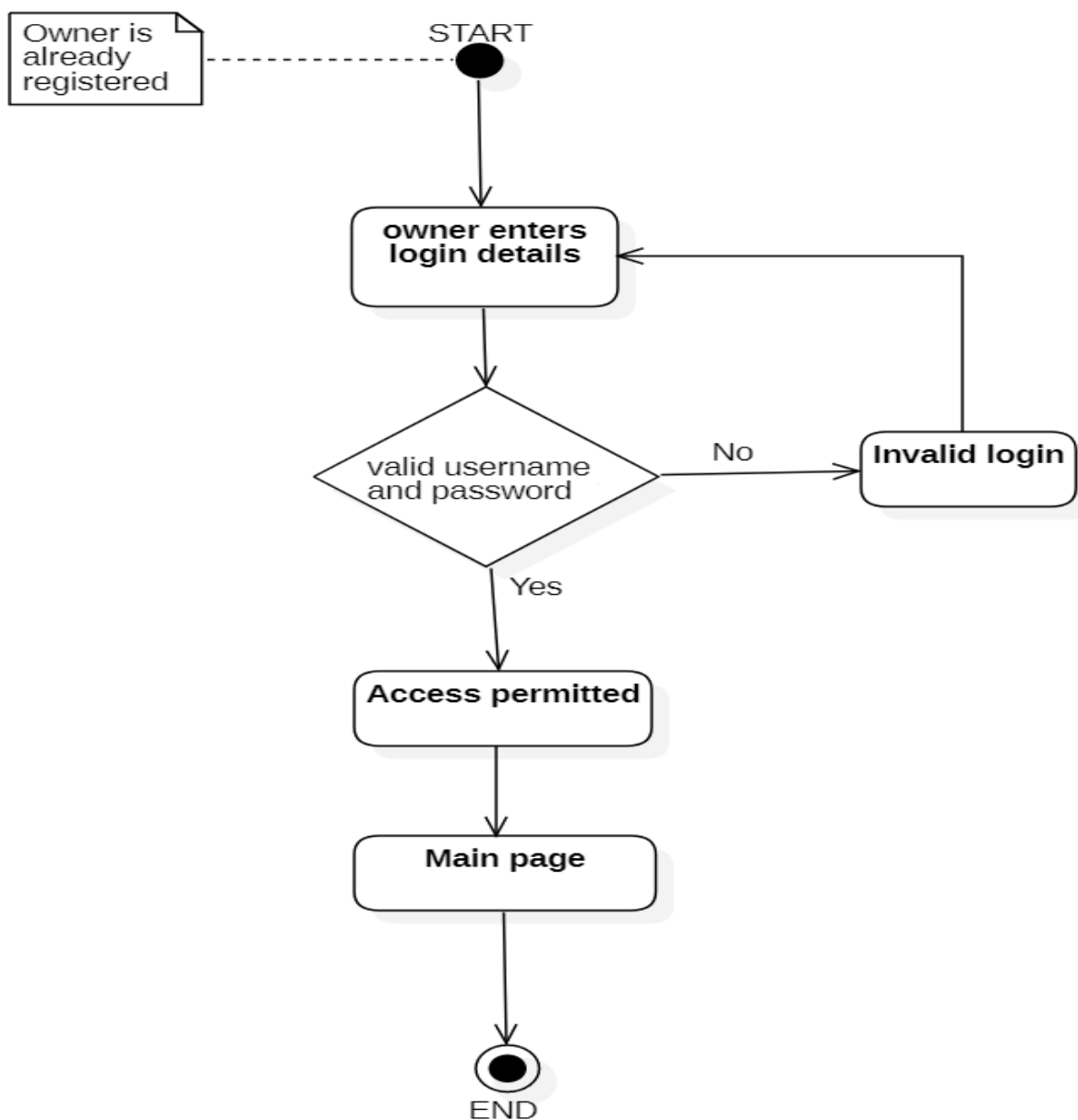
1.3.2 Owner Activity

The owner once logged in successfully will enter into the main page. The main page will provide the details regarding the restaurant as a whole by navigating through various options available. The main page will provide the details of all the employees working under him/ her and he has the only right to make changes in their data i.e., he/ she can add a new entry and can delete the existing employee details and even has the option to update details (even the salary) with the help of unique employee ID.

The owner can add new entries into the menu and even remove some items from the menu. The table status will give the idea of how many tables have been occupied by the customers and will display available if unoccupied. The financial activity details can also be viewed by the owner by going through the transaction option displaying revenue generated at each table. The owner can also get the details regarding the popular dishes in the restaurant since the S/W will save the order details on to the DB, and is viewable to the owner. The logout option will get the owner back to the login page.
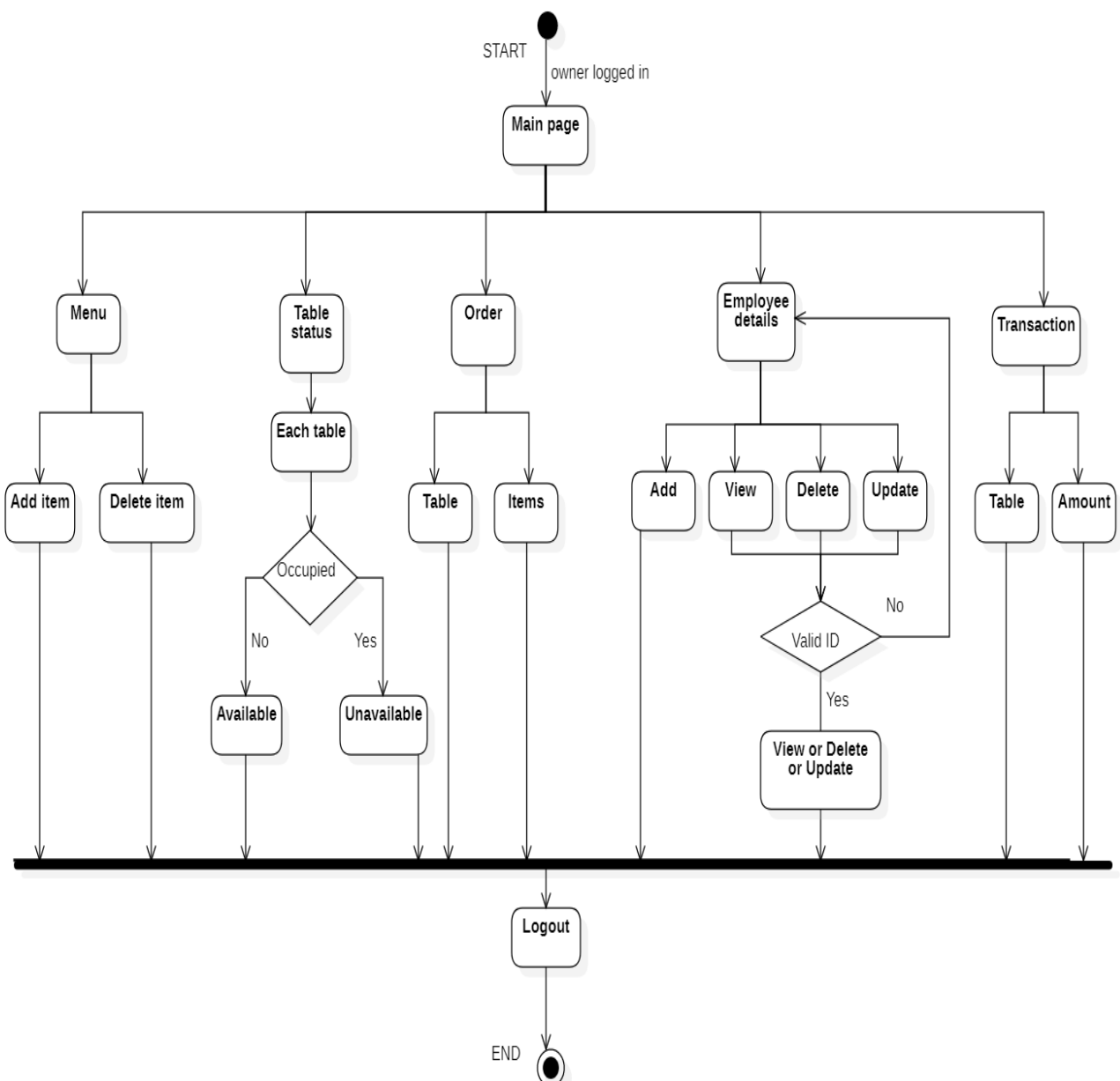
1.3.3 Chief chef Activity

The chief chef in the restaurant is supposed to take care of all orders being placed by the customers at each table. The S/W will make this job easy for the chief chef with the help of the order page. The chief chef can also decide how many people he wants as waiters. The chief chef can navigate from the login page to the order page with the help of accessing the chef option. The chief chef can view all the orders that are being placed along with the table number at which the corresponding customer actually is present.

Once the order is viewed by the chief chef, he/she can direct the items for preparation from the order list and can continue with his works of viewing new orders. Once the item is prepared, he/she can allocate waiter from the available ones. Once the customer leaves the restaurant after finishing the meal, the waiter will be classified into an available waiter. The chief chef can navigate to the login page after viewing all the orders on the order page as and when required.
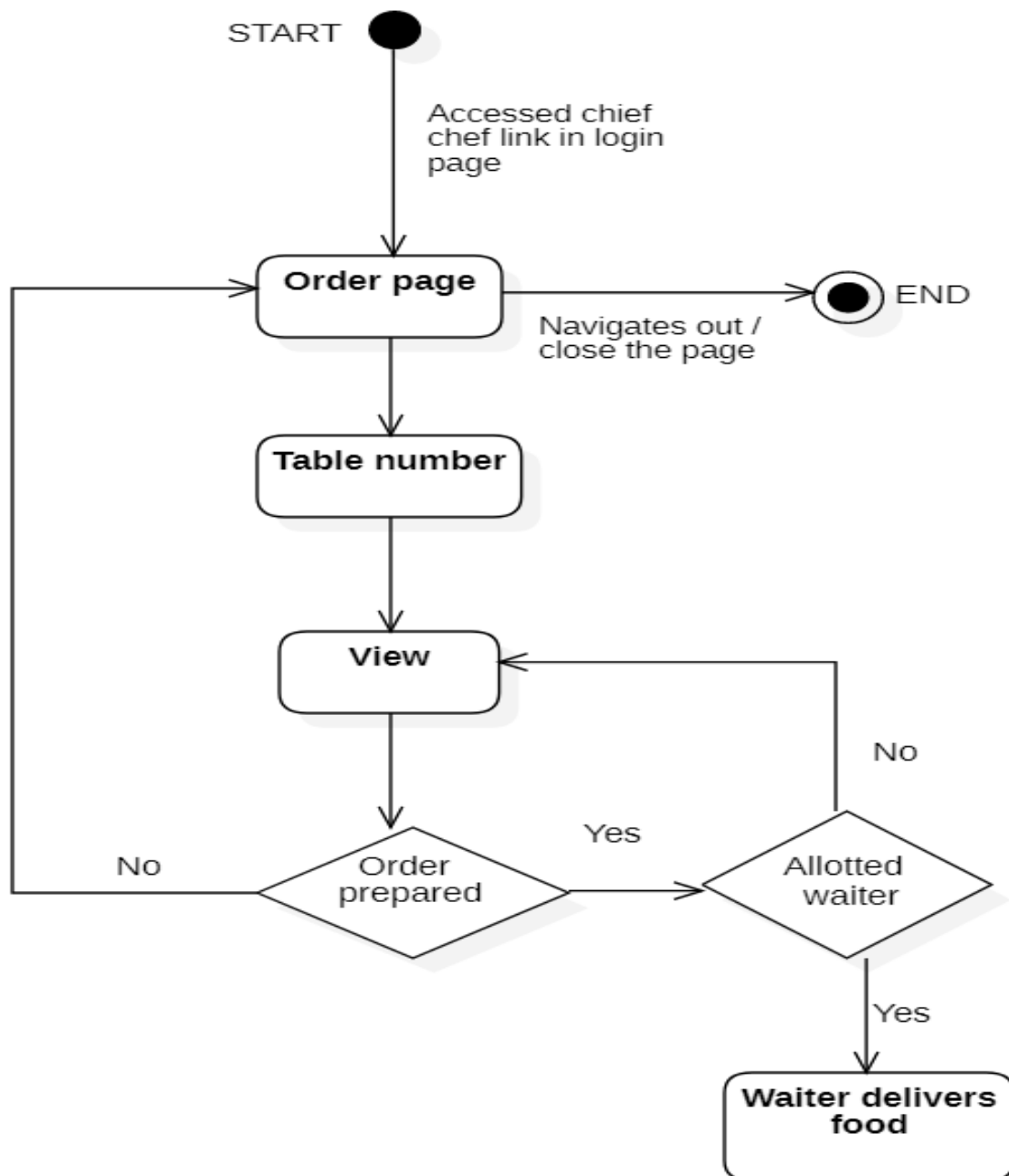
1.3.4 Customer Activity

The crucial role in the RMS is played by the customer. The customer once entered into the login page can navigate onto the order page with the help of the customer option available and once on reaching the order page will provide the details of all the items present in the menu from which the customer can decide which all items to be added on to the order. Once the main orders are decided the customer can place his order and confirm it by making payment for the placed items. The customer if failed to pay have to move through the procedures from the beginning since the order will be considered invalid/ unnecessary.

On successfully making the payment, the customer can view the orders he placed and the approximate time to wait for the delivery of the item. The customer can make additional orders even after making payment for the first order but will get lower priority and the customer can make the payment instantly and send the order to the chief chef with the help of this order page. The waiter will deliver the items ordered and upon eating the food, the customer should click on the leave option provided in the S/W.
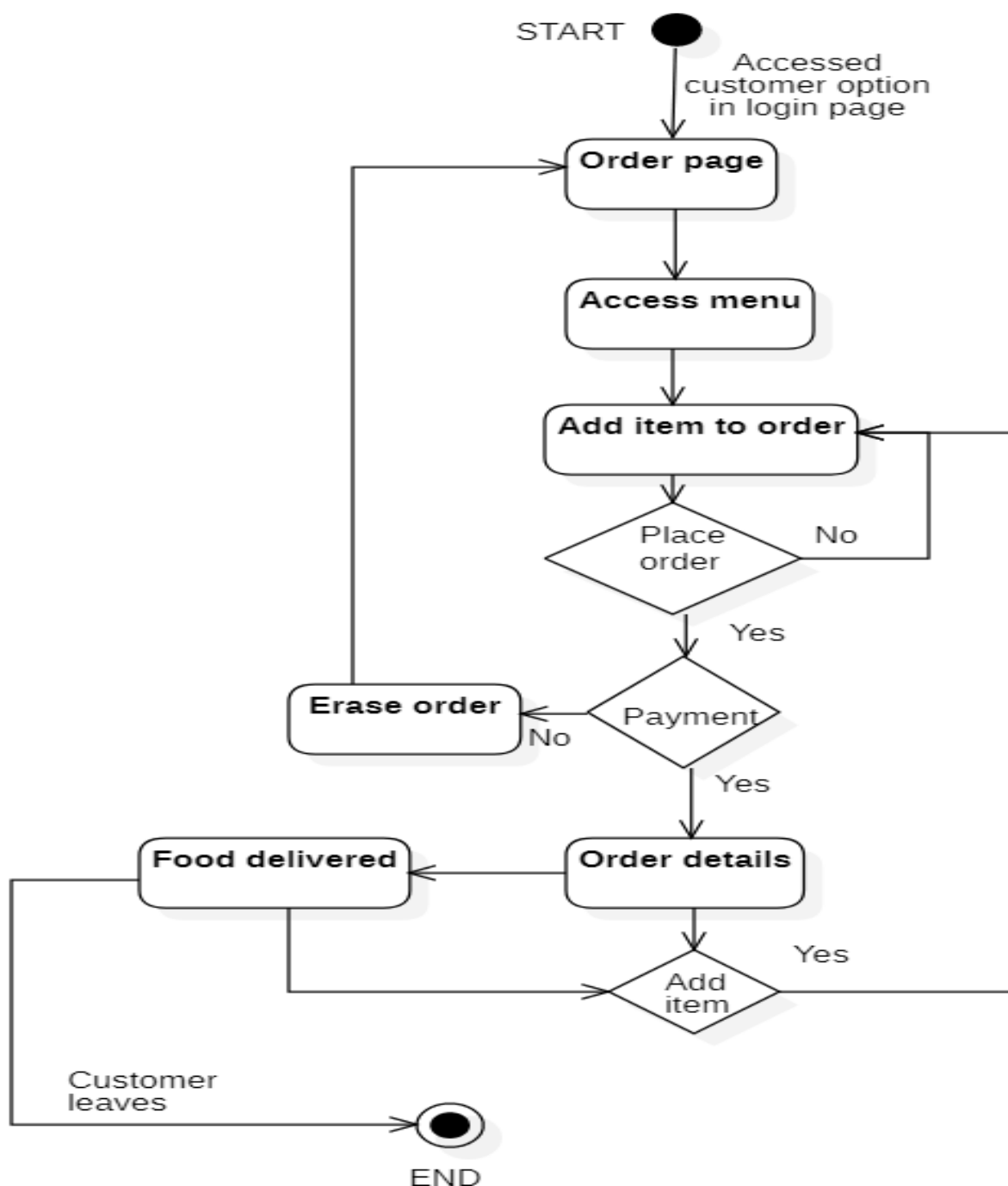
References

1. Sample design document. retrieved from https://eduserver.nitc.ac.in/

2. UML designer. (n.d.). Staruml. Retrieved October 18, 2021, from https://staruml.io/

3. Sequences Diagram using StarUML for Beginner. (2020, March 31). YouTube. Retrieved October 11, 2021, from https://www.youtube.com/watch?v=vGGfI3USBNM&ab_channel=MadihahDihah

4. Google image for basic activity diagram