Practical no: 3

Name: Saloni Vishwakarma
Batch-Roll no: C1-13
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Aim: 1. Prepare an activity diagram for computing a restaurant bill. There should be a charge for each delivered item. The total amount should be subject to tax and a service charge of 18% for groups of six or more. For smaller groups, there should be a blank entry for a gratuity according to the customer's discretion. Any coupons or gift certificates submitted by the customer should be subtracted.

2. Prepare an activity diagram that elaborates the details of logging into an email system. Note that entry of the user name and the password can occur in any order.

1) Restaurant Bill:
Certainly, here's the theoretical description of computing a restaurant bill:

1. Input the number of customers.
2. Check if there are six or more customers:
   - If yes, apply an 18% service charge.
   - If no, skip the service charge.
3. Input the items ordered and their prices.
4. Calculate the subtotal by summing up item prices.
5. If the group has fewer than six customers, input a gratuity amount (optional).
6. Input any coupon or gift certificate amount (optional).
7. Calculate the total before tax by adding the subtotal, subtracting the service charge (if applicable), subtracting the gratuity (if entered), and subtracting the coupon or gift certificate amount (if entered).
8. Calculate the tax based on the tax rate.
9. Calculate the final total by adding the total before tax and the tax.
10. Display the final total to the customer.

This summarizes the key steps involved in computing a restaurant bill, including considerations for service charges, gratuity, coupons, and tax.

File   Edit   Format   Model   Tools   View   Window   Debug   Help

WORKING DIAGRAMS

Main — Model

ActivityDiagram1 —

Select order

Add bills to order

group greater than 6 → Add 18% to bills

group less than 6

Add 10% to bills

Total Bills after Tax and Service Charge

If coupons or gifts are not available

If coupons and gifts are available

Subtract Coupon charge

Total BIll

TOOLBOX

Activities (Basic)   ▲

○ Action

● Initial

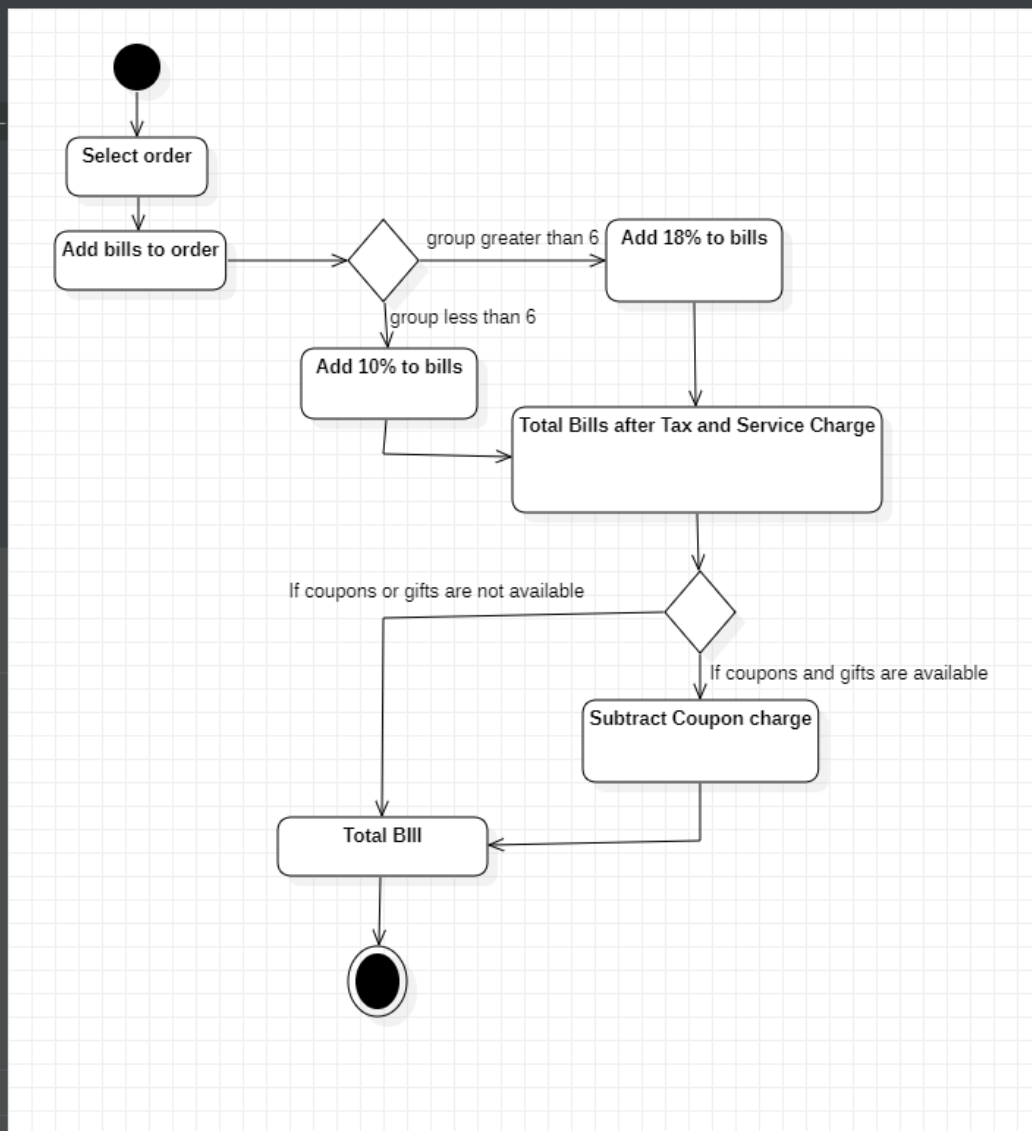◉ Final

Fork

Join

Merge

Decision

Control Flow

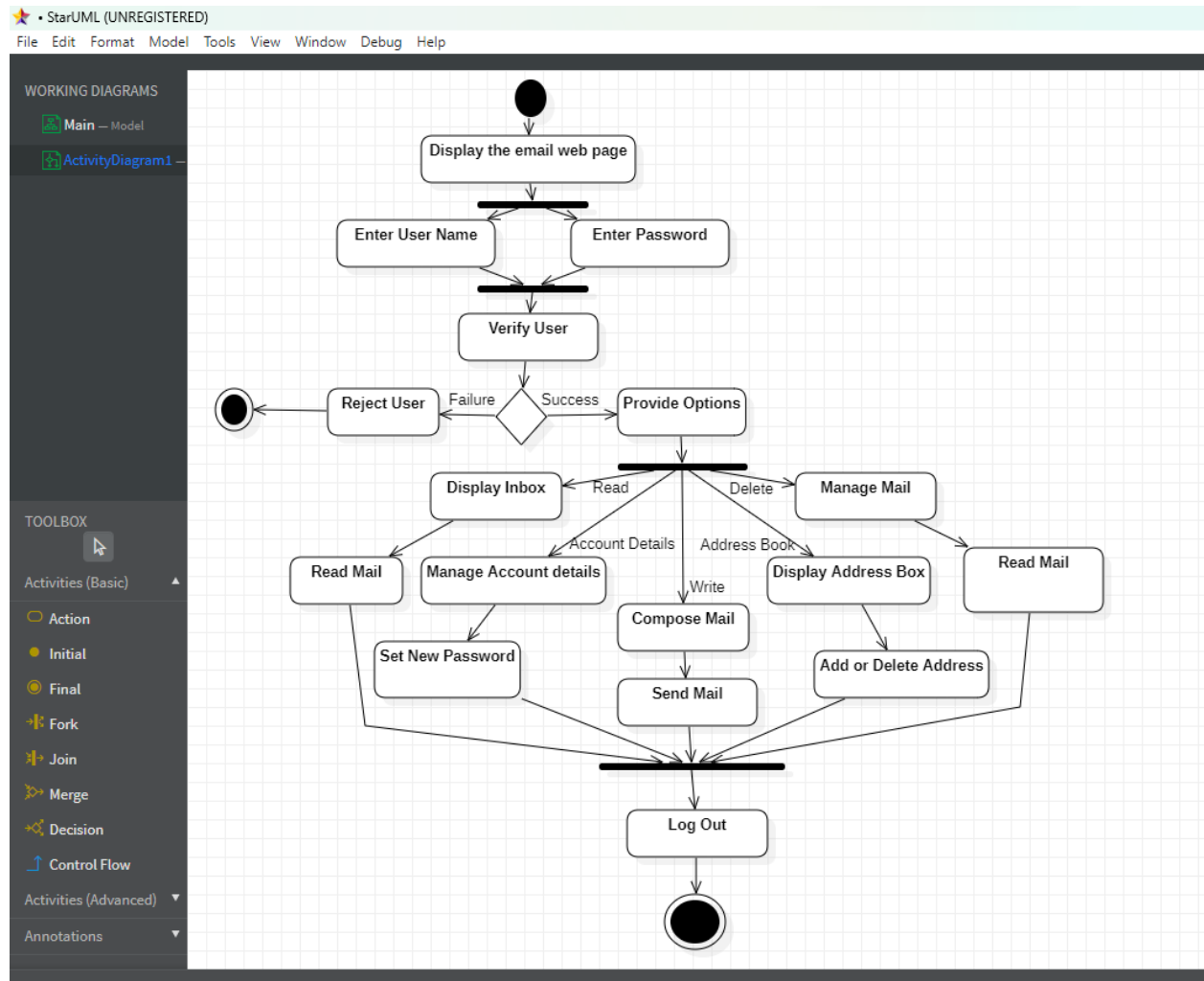Activities (Advanced)   ▼

Annotations   ▼

2) Email-system:

Based on your provided flowchart, I'll describe the steps in the process of logging into an email system:

1. Display the email web page: The process starts by displaying the email system's web page.

2. Enter username and password: The user inputs their username and password on the web page.

3. Verify the user: The system validates the entered username and password to determine if the user is legitimate.

4. If the user is verified (authentication successful), the system provides various options:

  a) Display Inbox: The user can choose to view their inbox, allowing them to read their emails.

  b) Manage Account Details: This option lets the user update their account details, such as setting a new password.

  c) Compose Mail: The user can compose and send emails.

  d) Display Address Book: This option allows the user to view their address book and add or delete addresses.

  e) Manage Mail: The user can manage their emails, which might include organizing, deleting, or marking them as read.

  In all these cases, the user can perform the selected action and eventually log out.

5. If the user is not verified (authentication fails), the system rejects their login attempt.

This describes the login process for the email system based on the provided flowchart. It involves verifying the user's credentials and providing various options for authorized users while rejecting unauthorized access.

Conclusion: We have successfully studied and implemented Activity diagram through the given examples.