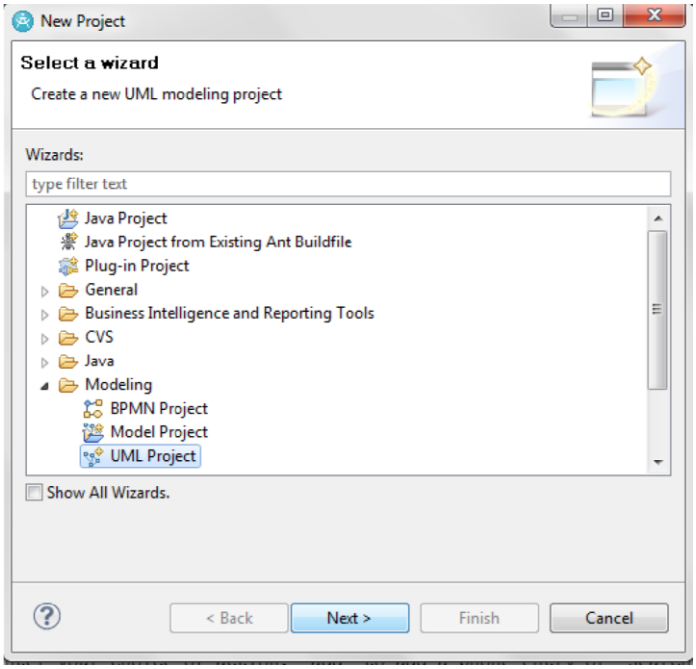
Lab 07 –System Sequence Diagram

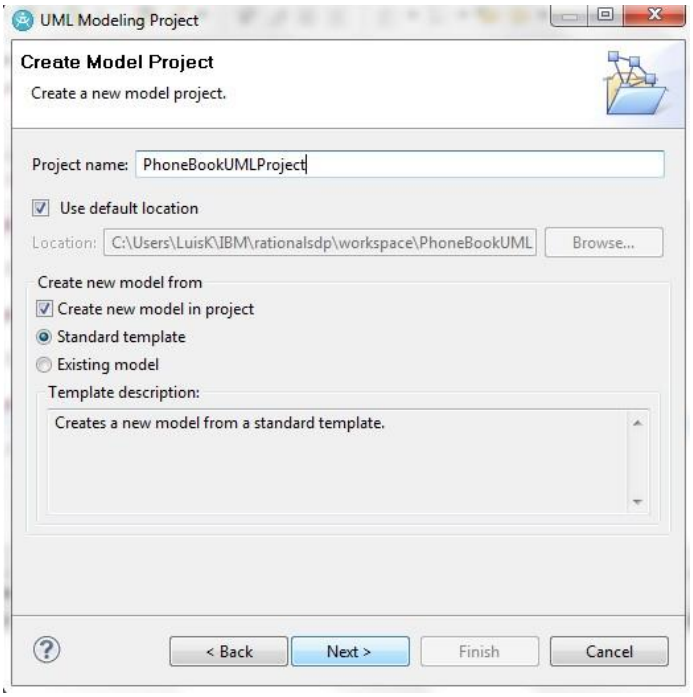
Creating System Sequence Diagram in RSA

1. Go to **File** > **New** > **Project**.

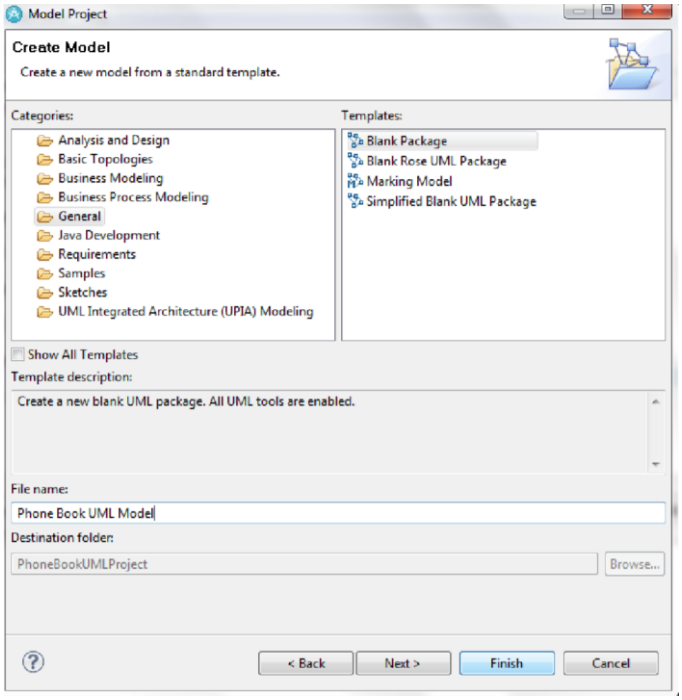
2. Select the **UML Project** wizard. Click **Next**



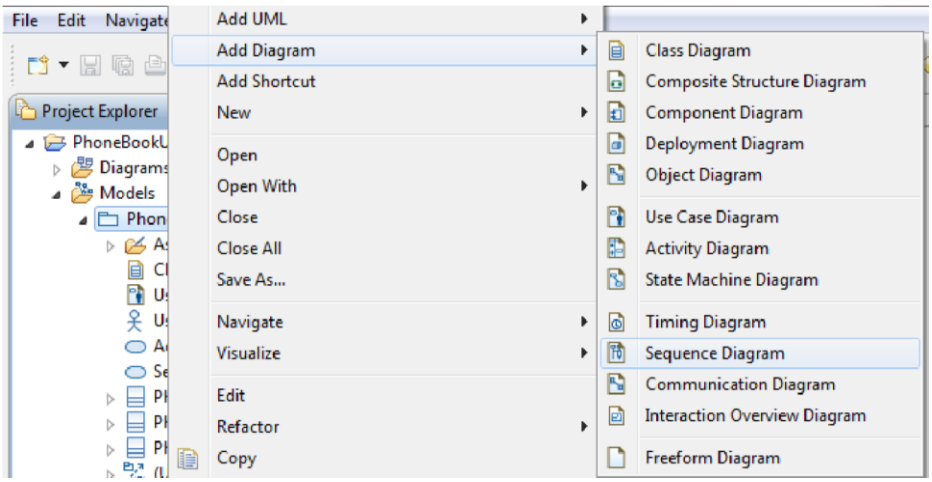
3. Enter a Project Name. Click **Next.**



4. On the Create Model Step, choose category **General** and template **Blank Package** and enter a model name. Click **Finish.**

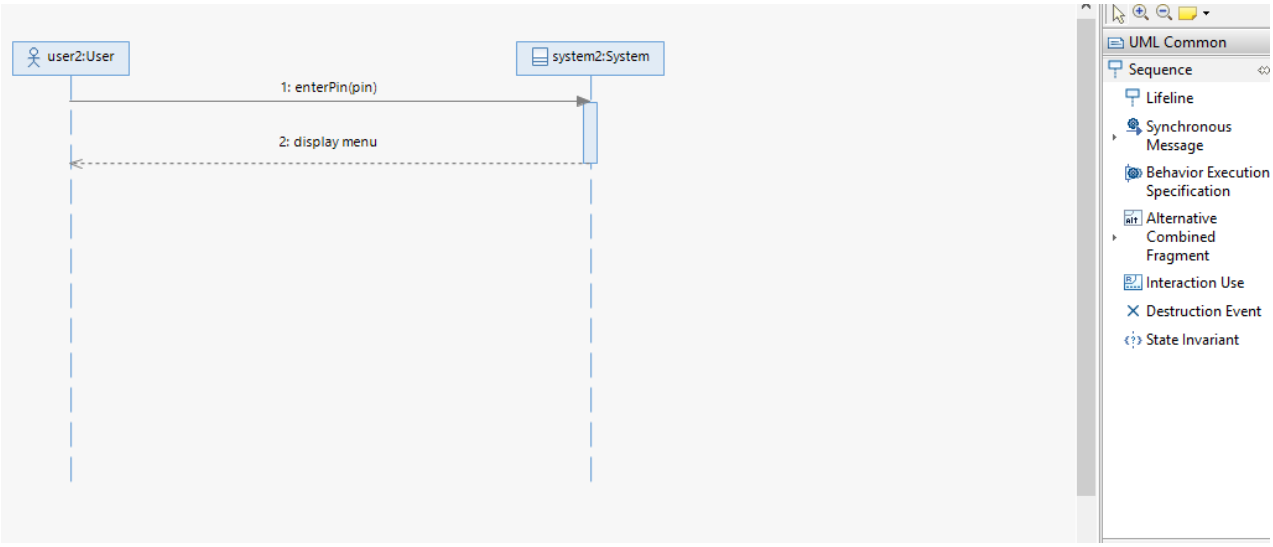


5. Now you can see your UML Project with two subdirectories. The first subdirectory is Diagrams, which will only show the UML diagrams you create organized by the type of diagram. The second subdirectory, Models, will show the diagrams and all the UML objects that you create within the model.
6. Right click the package and select Add Diagram > Sequence Diagram.



7. Enter a name for your diagram. Now you will see a pane where you will be able to add items from the palette to the diagram.

8. Drag the "User" from the project explorer to the diagram in order to add its lifeline



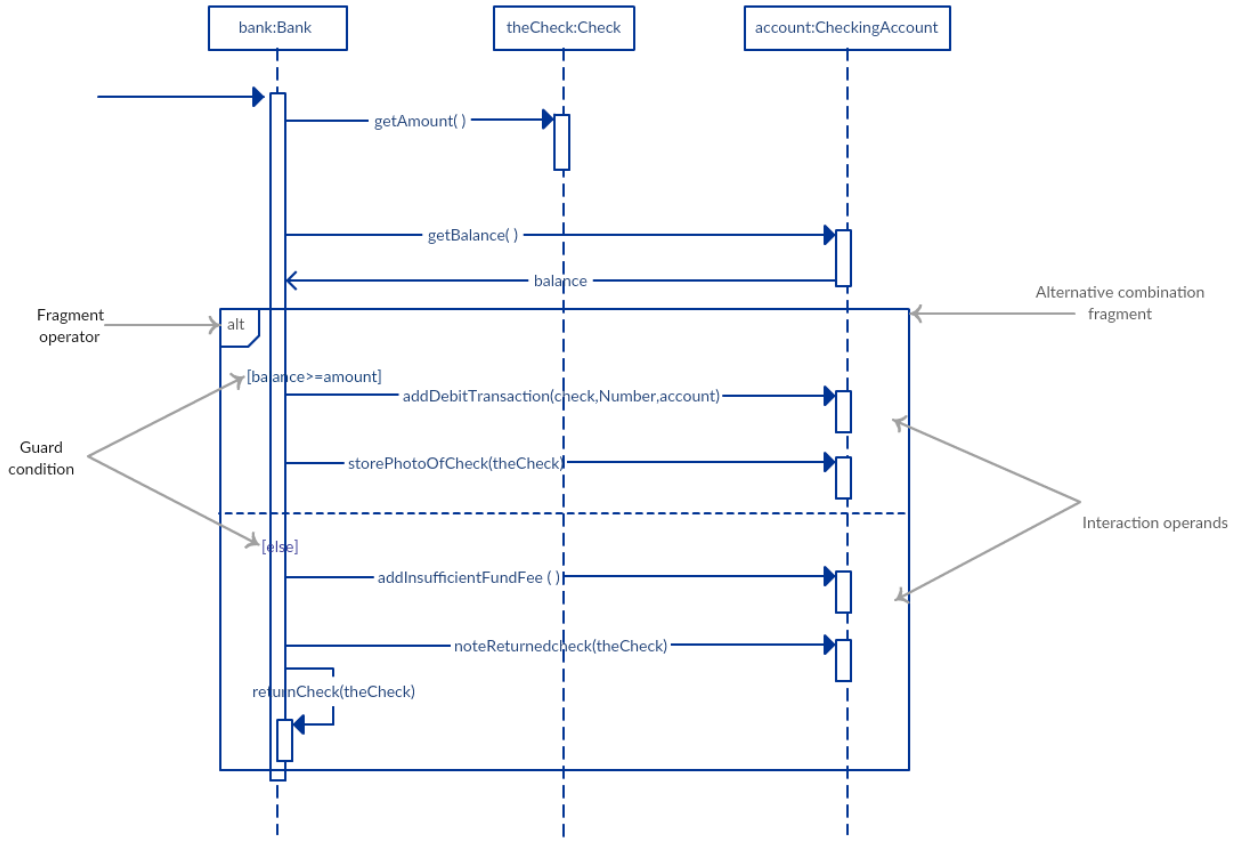
9. Now go to the palette and click select **synchronous Message** in the Palette. Click the line under **user: User** and then the line under **system: System**. Select from either existing operations in the drop down list or create a new operation.

10. Repeat the process for other operations

11. Save the final diagram.

Alternatives

The alternative combination fragment is used when a choice needs to be made between two or more message sequences. It models the “if then else” logic.



Options

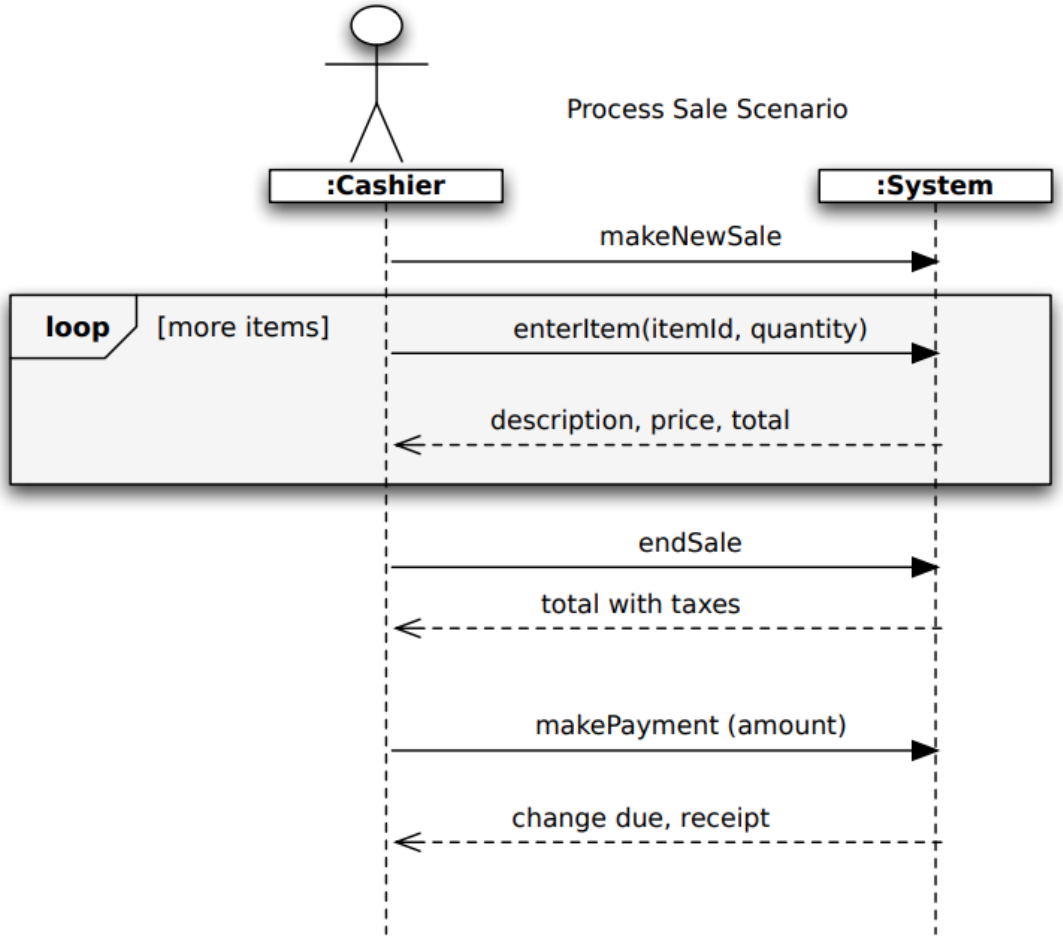
The option combination fragment is used to indicate a sequence that will only occur under a certain condition, otherwise, the sequence won’t occur. It models the “if then” statement.

Similar to the alternative fragment, the option fragment is also represented with a rectangular frame where ‘opt’ is placed inside the name box.

Unlike the alternative fragment, an option fragment is not divided into two or more operands. Option’s guard is placed at the top left corner.

Loops

Loop fragment is used to represent a repetitive sequence. Place the words ‘loop’ in the name box and the guard condition near the top left corner of the frame.



Draw system sequence diagrams for below given expanded use cases.

TASK # 01

Use Case Name	**Verify Customer**
Actor Actions	System Response
1. The customer enters ATM card into card reader slot of the ATM	2. The ATM pulls the card into machine and reads it
3. The customer enters his/her PIN	4. The system VALIDATES THAT the entered PIN is valid

	5. The system displays menu of possible transactions
	2a. IF the card is damaged or improperly inserted a. The system displays an error message b. The system ejects the card
	4a. IF the entered PIN is invalid a. The system displays an error message b. The system asks customer to re-enter the PIN
IF the customer presses cancel key	The system displays a message for session cancellation The system ejects the card

TASK # 02

Use Case Name	**Withdraw Cash**
Actor Actions	System Response
1. The customer choose withdraw option from menu of possible transactions	2. The system displays menu of possible account types to withdraw from
3. The customer choose an account type	4. The system displays menu of possible amounts to withdraw
5. The customer choose amount	

The customer repeats steps 1 to 9 to perform more transactions	6. The system VALIDATES THAT the customer's account has sufficient balance to withdraw 7. The machine dispense appropriate amount of cash 8. The system records cash dispensing in ATM's log 9. The system issues a receipt
5a. IF the customer chose to enter another amount	a. The system displays an amount input b. The customer enters amount
	6a. IF the customer's account has no sufficient balance a. The system displays error message b. The system asks customer to enter another amount
IF the customer presses cancel key	The system displays a message for session cancellation The system ejects the card

TASK # 03

Use Case Name	Deliver Items
Actor Actions	System Response
1. The shopping system issues delivery request to courier company	2. The courier company collects items from warehouse 3. The courier company packs and ships the selected items 4. The courier company marks delivery complete
5. The shopping system confirms order close	

	4a. IF none has accepted the package a. The courier company marks delivery fail b. The system notifies sales staff to contact customer for rescheduling delivery

Submission Guideline

Submit three image files for system sequence diagrams. Please name the file after task number and your roll number.