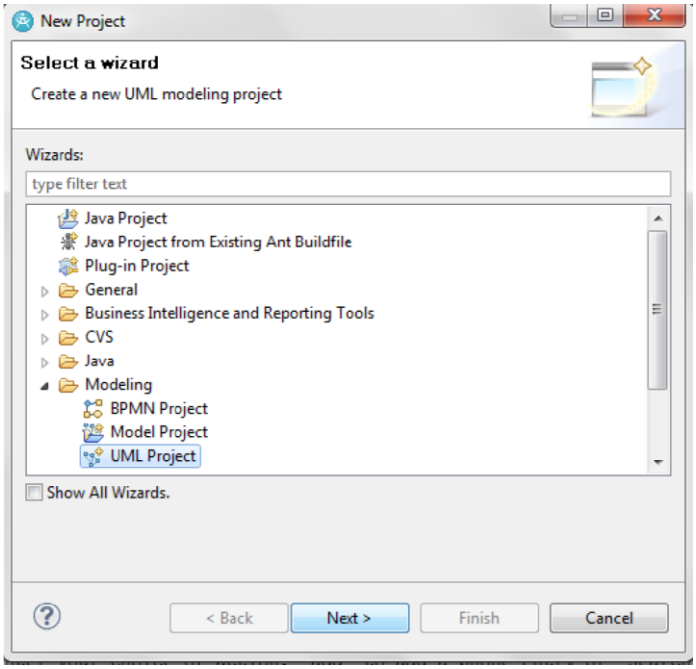
Lab 08 –Sequence and Class Model

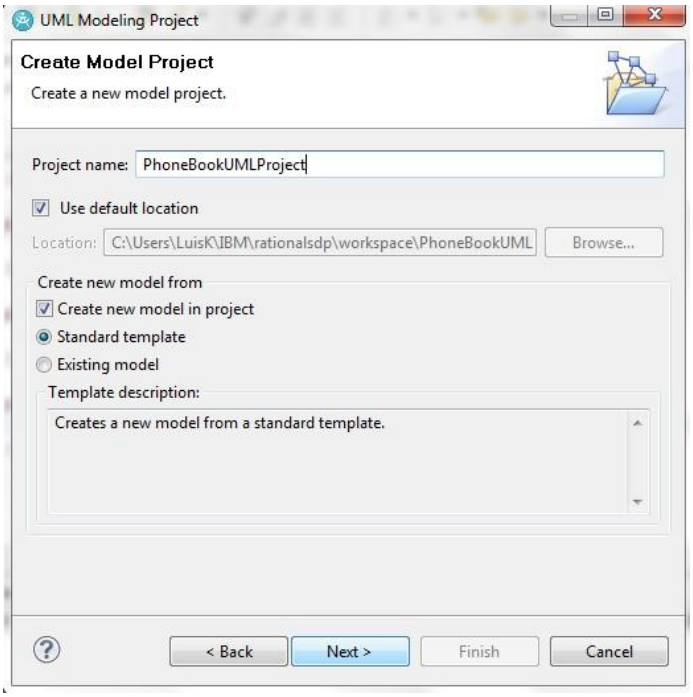
Creating Sequence Diagram in RSA

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

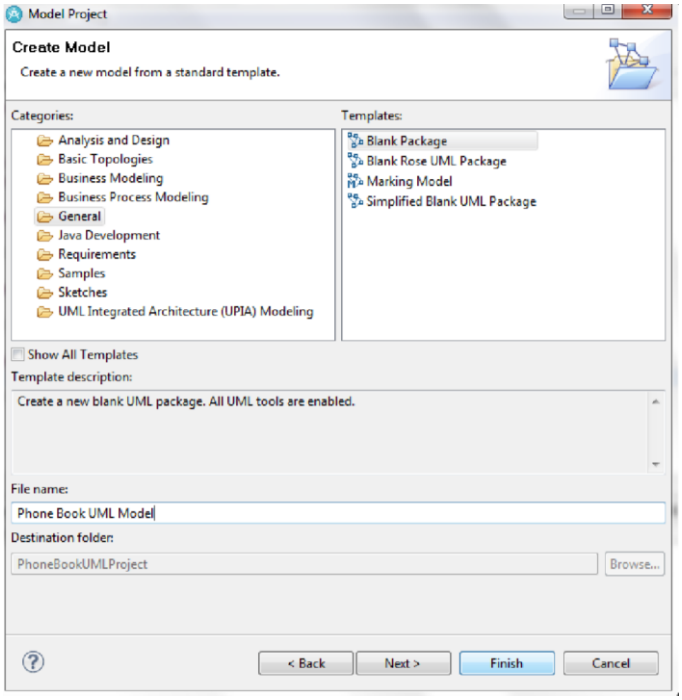
2. Select the **UML Project** wizard. Click **Next**



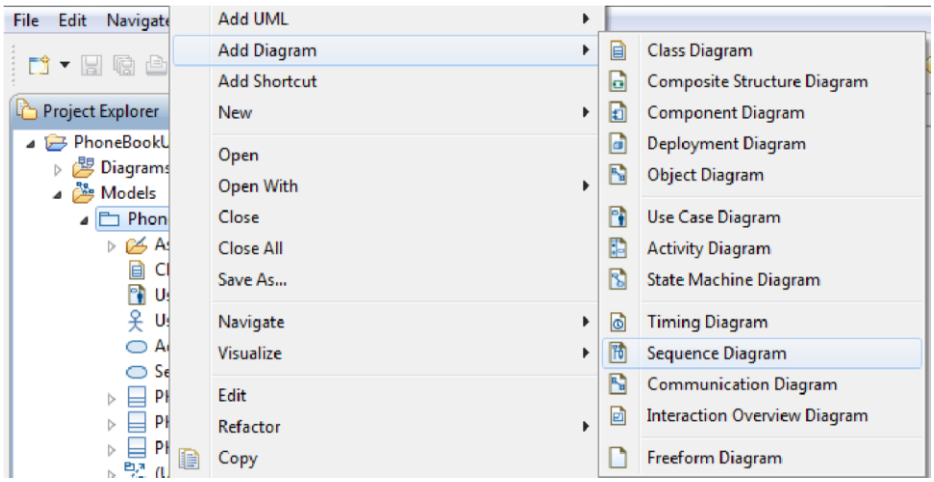
3. Enter a Project Name. Click **Next.**



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



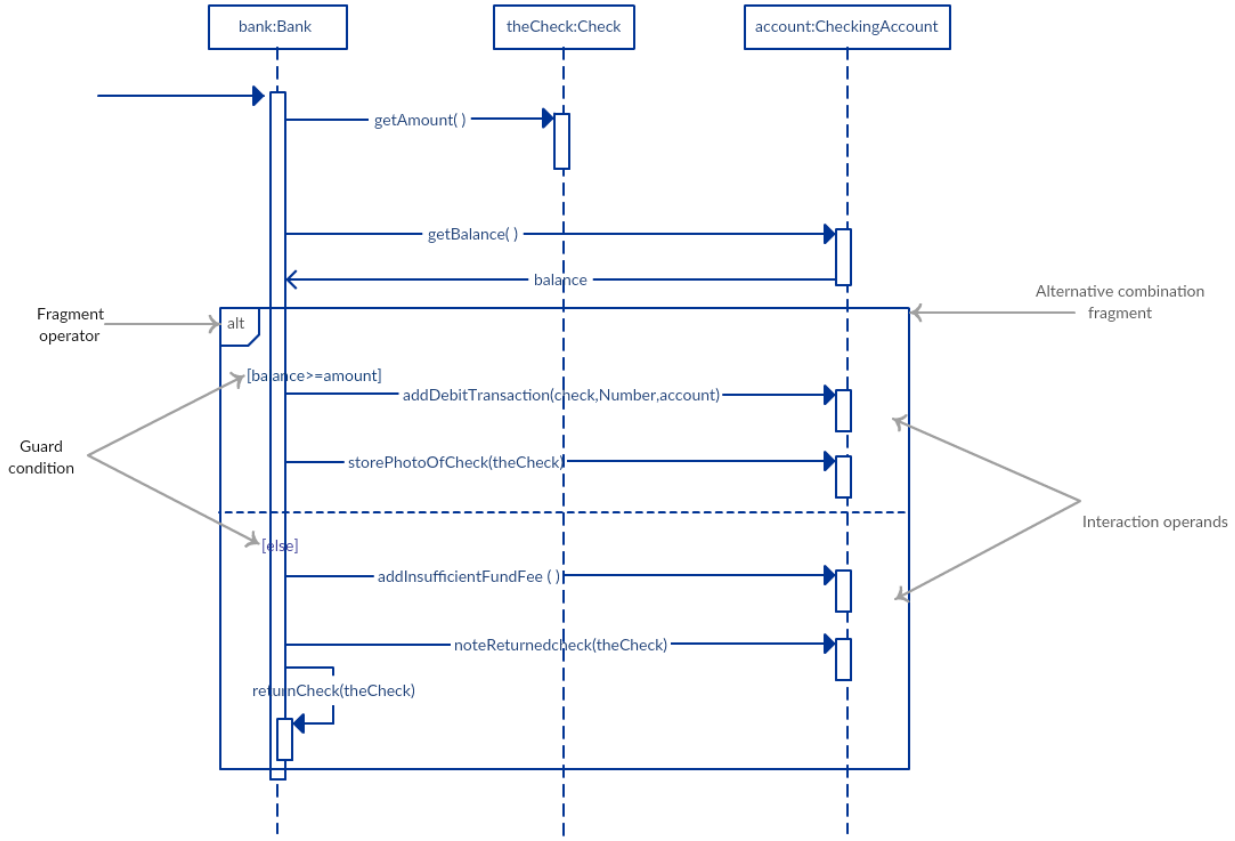
5. Now you can see your UML Project with two subdirectories. The first subdirectory is Diagrams, which will only show the UML diagrams you create organized by the type of diagram. The second subdirectory, Models, will show the diagrams and all the UML objects that you create within the model.
6. Right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

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

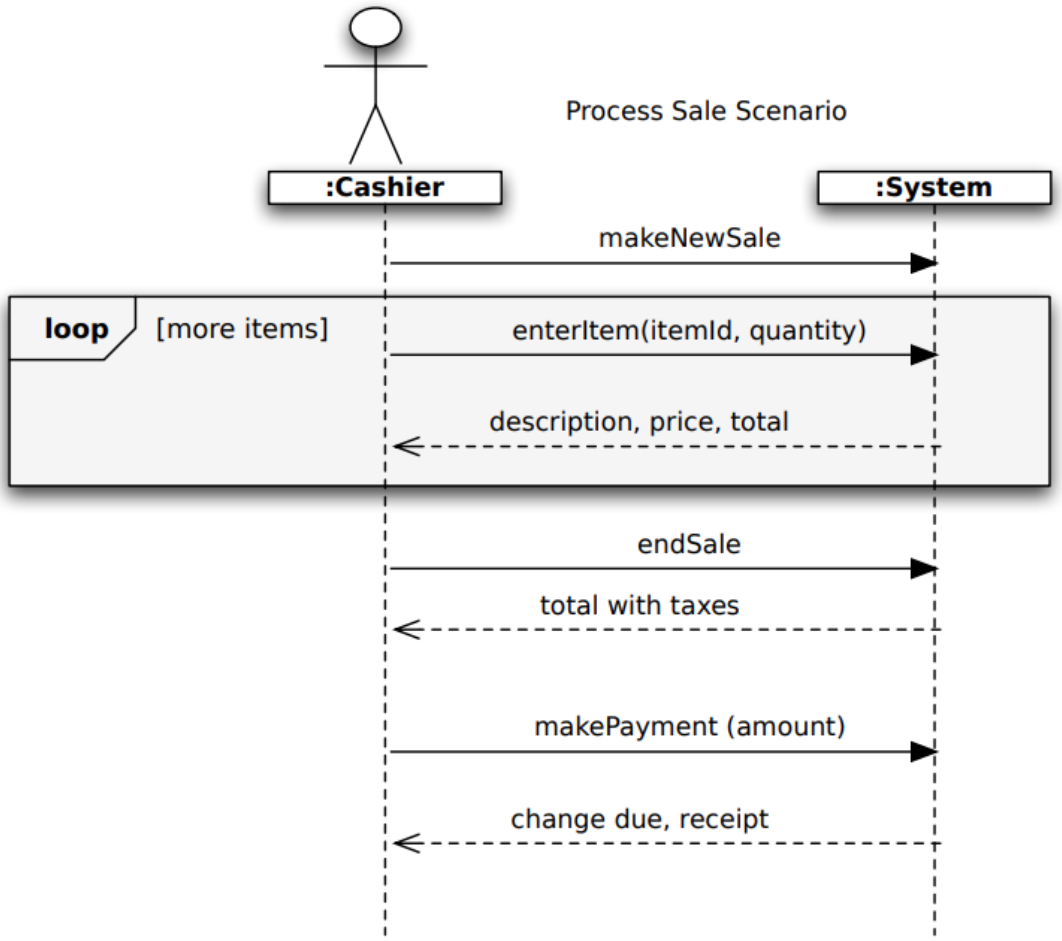
The option combination fragment is used to indicate a sequence that will only occur under a certain condition, otherwise, the sequence won't occur. It models the "if then" statement.

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.



Video-Rental System case study

Video-Rental System is a small video rental store. The store lends videos to customers for a fee, and purchases its videos from a local supplier.

A customer wishing to borrow a video provides the empty box of the video they desire, their membership card, and payment. The customer then returns the video to the store after watching it.

If a loaned video is overdue by a day the customer's credit card is charged, and a reminder letter is sent to them. Each day after that a further card is made, and each week a reminder letter is sent. This continues until either the customer returns the video, or the charges are equal to the cost of replacing the video.

New customers fill out a form with their personal details and credit card details, and the counter staff give the new customer a membership card. Each new customer's form is added to the customer file.

The local video supplier sends a list of available titles to Video-Rental System, who decide whether to send them an order and payment. If an order is sent then the supplier sends the requested videos to the store. For each new video a new stock form is completed and placed in the stock file.

Domain Model for Video Rental System

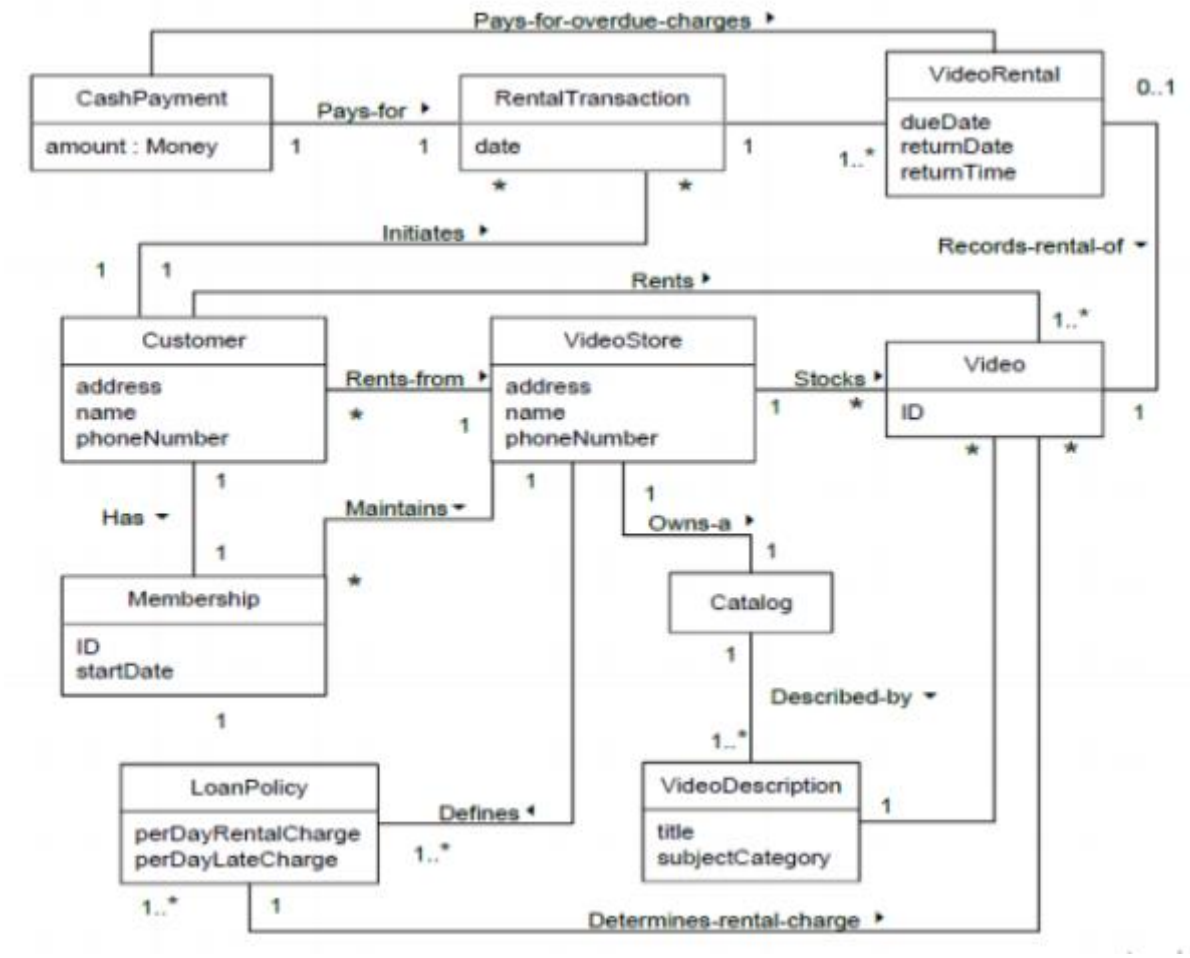
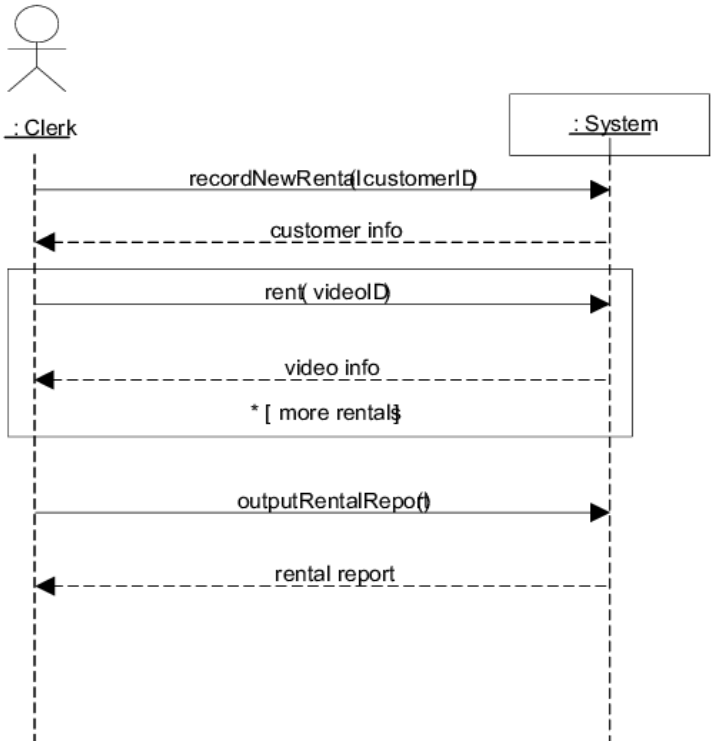


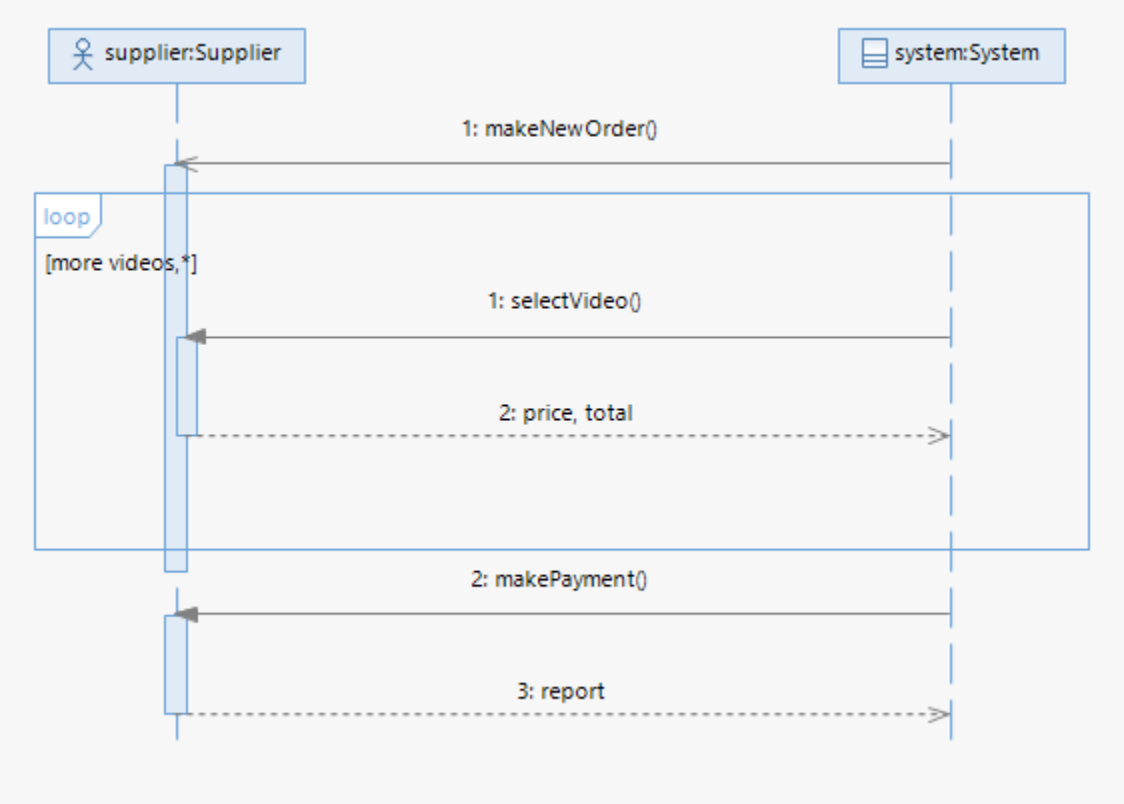
Figure 1-Domain Model

Rent a Video



Get Membership

Order Video



TASK # 01

Create sequence diagrams with the help of given case study, system sequence and domain model

Create class diagram of video rental system

Apply GRASP controller pattern on system design to delegate work and control overall system activity

TASK # 02

Generate code from sequence diagrams and show implementation of corresponding classes

Submission Guide

Submit a PDF file containing diagrams and code snippets. You can also add short points highlighting your effort to attempt each question. The image files must be readable. Please name the file after task number and your roll number.