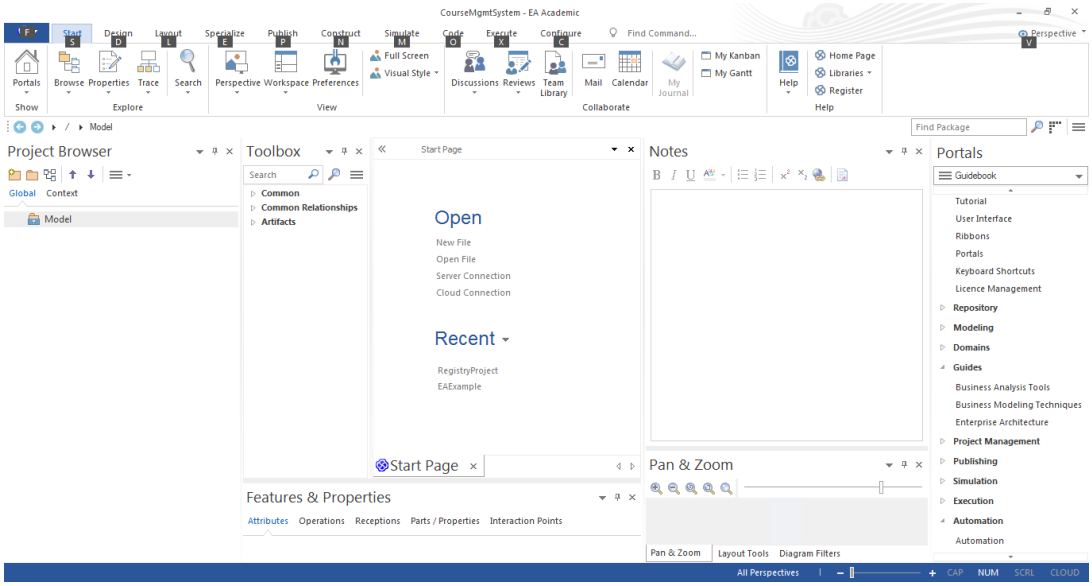
UECS2344 Software Design: Practical 8

You are to create an Enterprise Architect Project for the Course Management System in Practical 6.

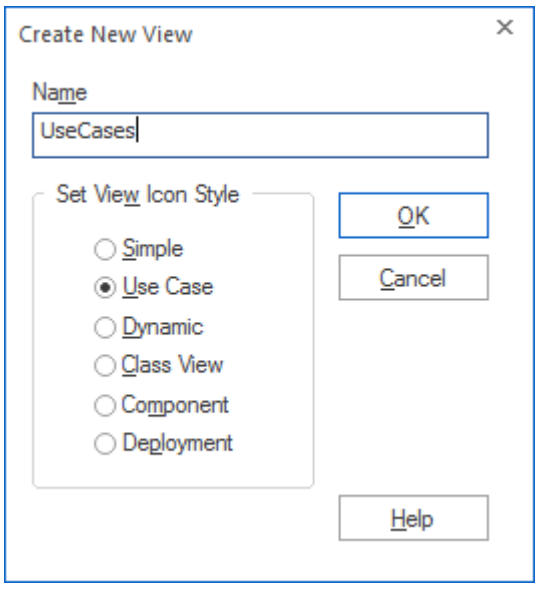
STEP 1: CREATE NEW PROJECT

From the menu, choose New Project. In the dialog window, select Desktop and type file name 'CourseMgmtSystem'.

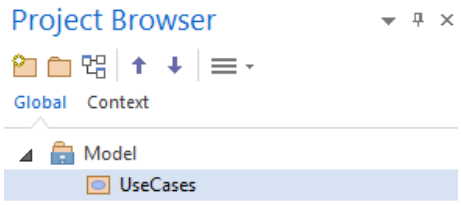


STEP 2: CREATE A USE CASE VIEW

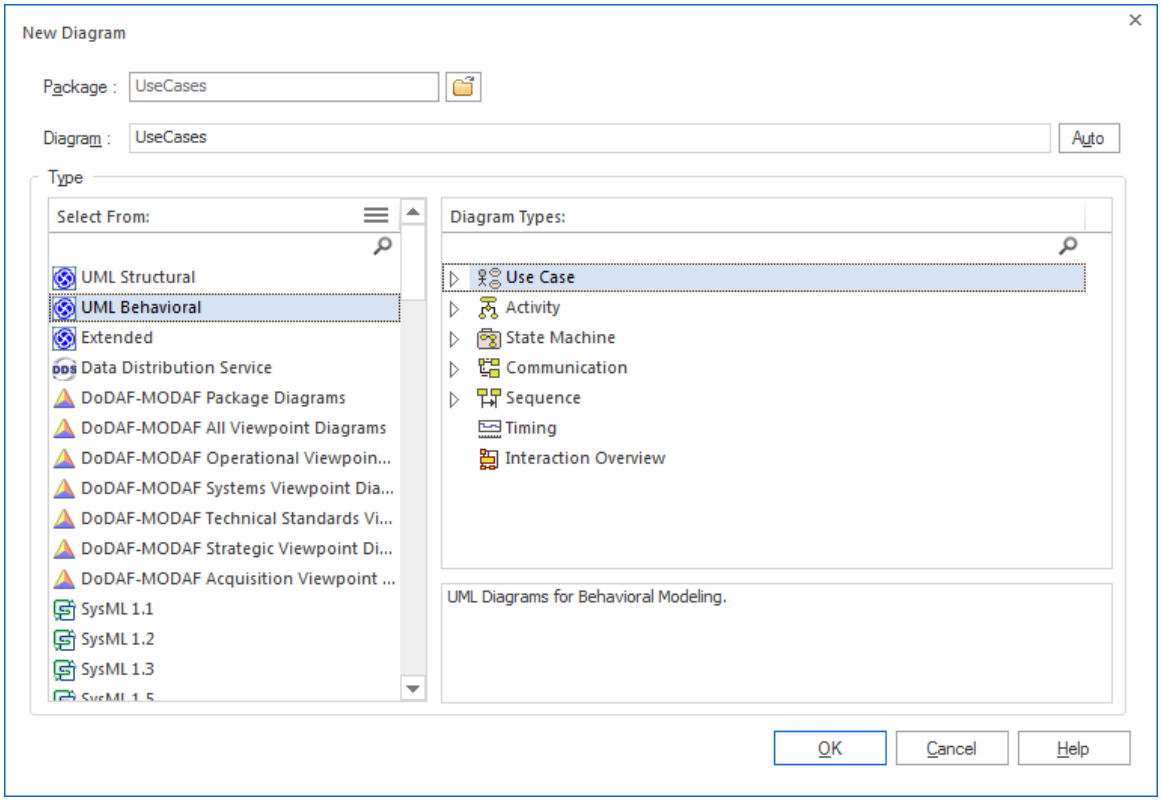
In the Project Browser, right-click Model and select Add View (Name: 'UseCases'; Style: 'Use Case).



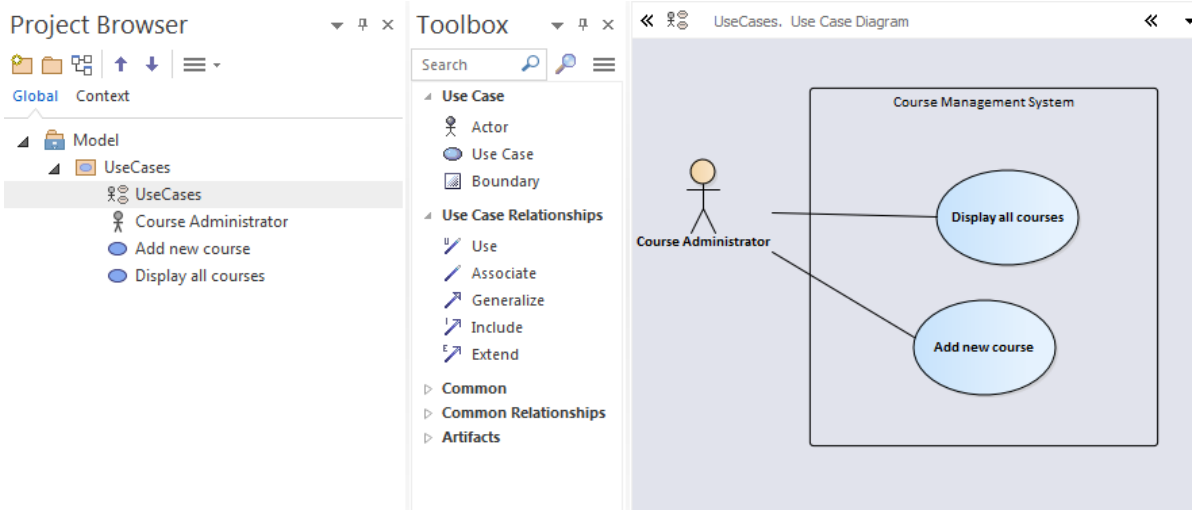
A new icon is added below Model.



Right-click on UseCases and select Add Diagram (Type: 'UML Behavioral; Daigram Type: 'Use Case').

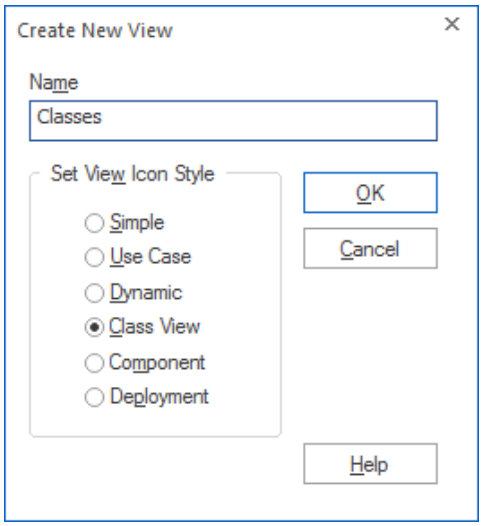


A new Use Case Diagram panel opens. Draw the Use Case Diagram as follows:

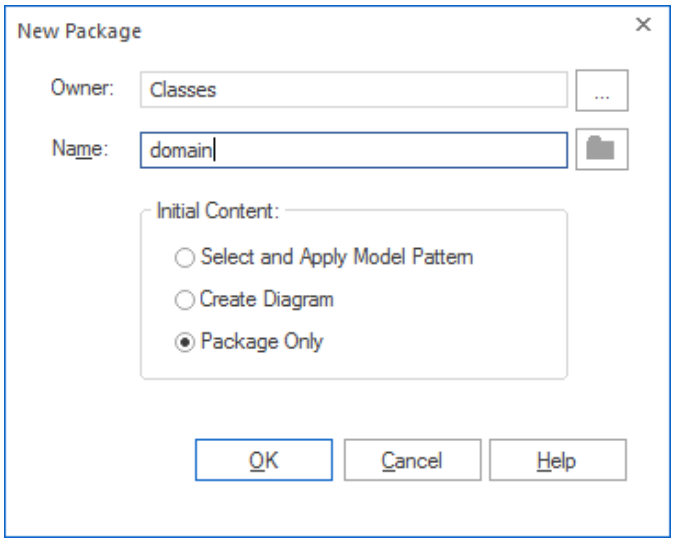


STEP 3: CREATE A CLASS VIEW

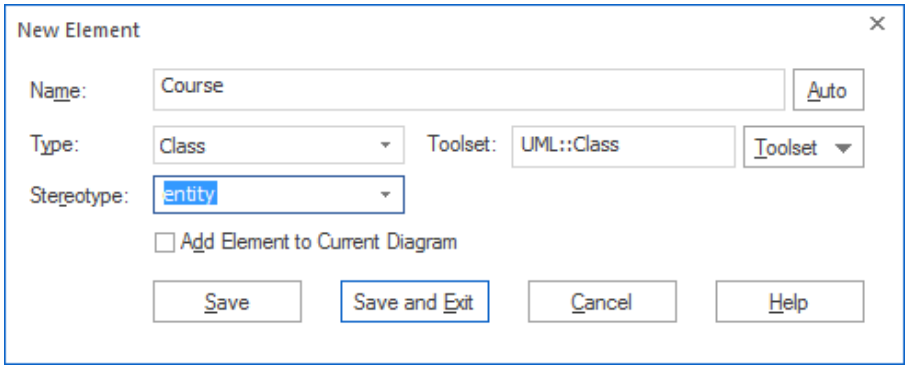
Right-click on Model and select Add View (Name: ‘Classes’; Style: ‘Class View).



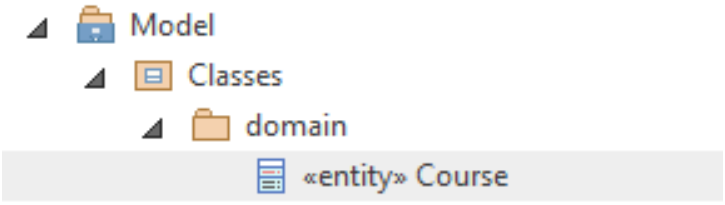
Right-click on ‘Classes’ and select Add Package (Name: “domain’; Initial Content: ‘Package Only’):



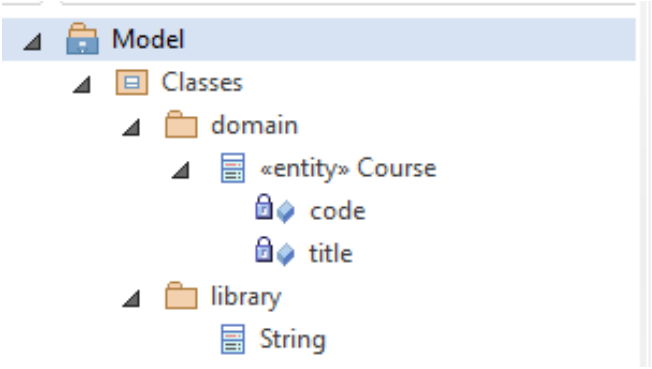
Right-click on domain package and select Add Element (Name: ‘Course’; Type: ‘Class’, Stereotype: ‘entity’).



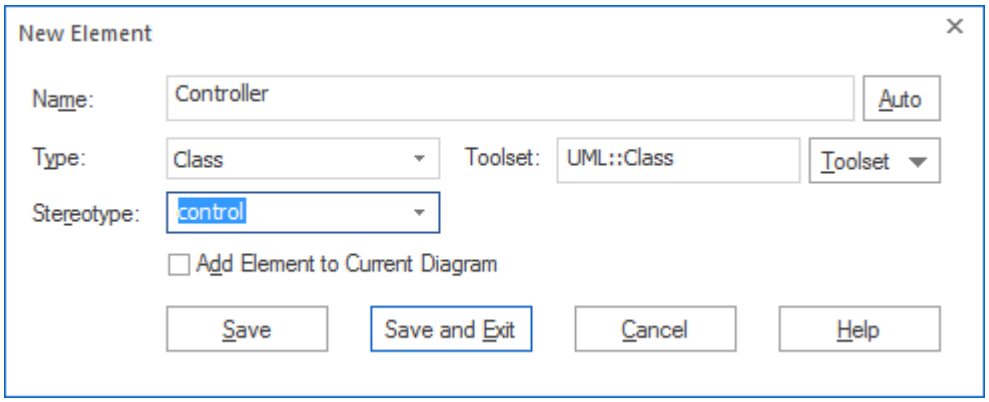
A new class Course is added under package domain.



Add the attributes for the class. For String data type, add package ‘library’ and class ‘String’.



Right-click on domain package and select Add Element to add Controller class (Name: ‘Controller; Type: ‘Class’; Stereotype: ‘control).



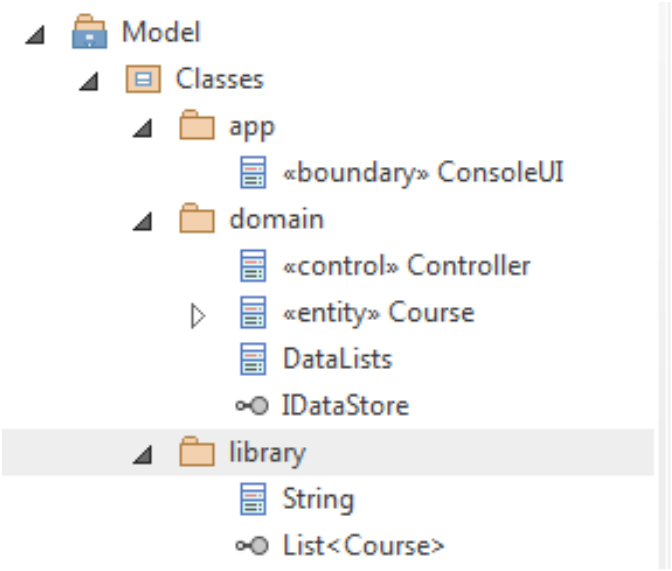
Repeat to add the following classes and interface:

- ConsoleUI class (Name: ‘ConsoleUI; Type: ‘Class’; Stereotype: ‘boundary)
- IDataStore interface (Name: ‘IDataStore’; Type: ‘ Interface’)
- DataLists class (Name: ‘DataLists; Type: ‘ Class’)

Add another package (Name: ‘app’; Initial Content: ‘Package Only’).

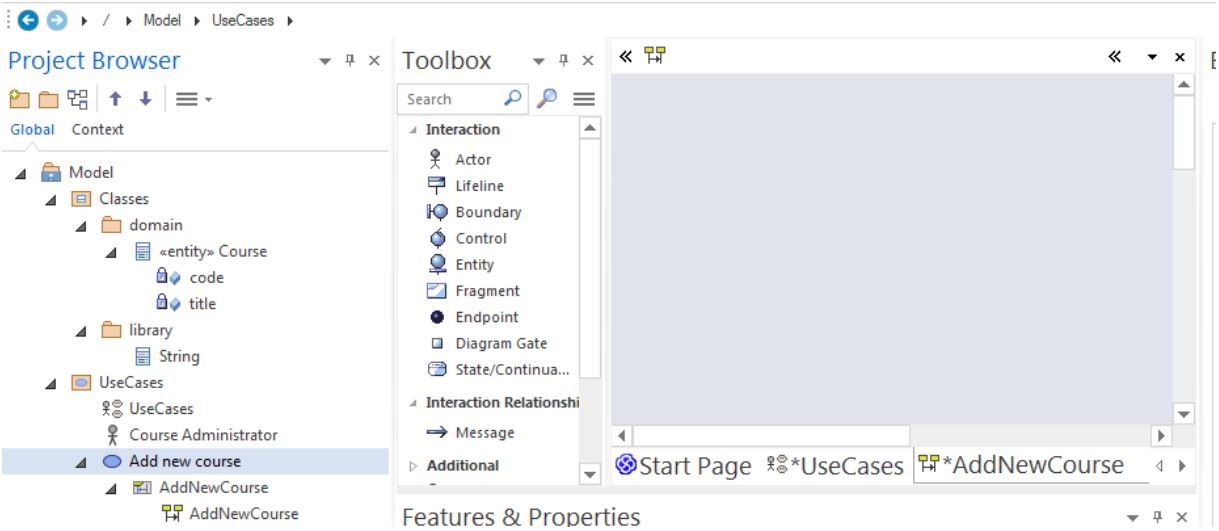
Add ConsoleUI class (Name: ‘ConsoleUI; Type: ‘Class’; Stereotype: ‘boundary) in the app package.

Add List<Course> interface (Name: ‘List<Course>; Type: ‘ Interface’) in library package.

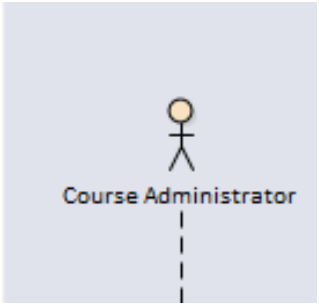


STEP 4: CREATE SEQUENCE DIAGRAMS FOR USE CASES

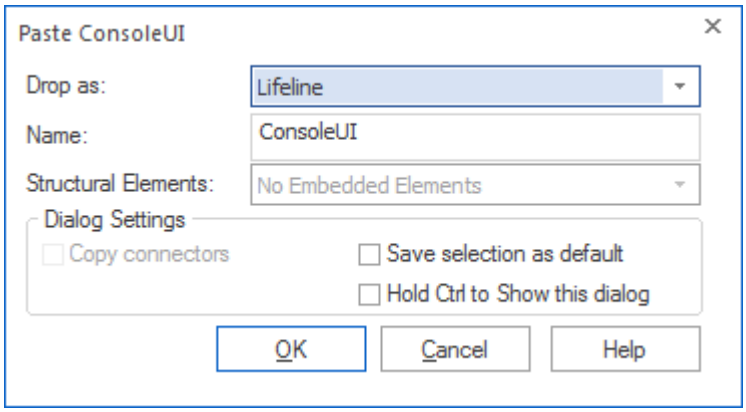
Right-click on use case Add new course and select Add -> Interaction -> with Sequence Diagram (Name: 'AddNewCourse'). A Sequence Diagram drawing panel opens.

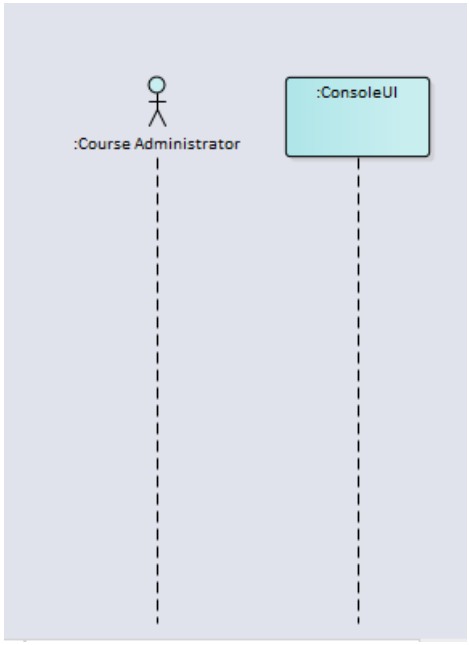


Drag and drop the Actor (Course Administrator) from the Model to the drawing panel (Drop as: 'Lifeline).

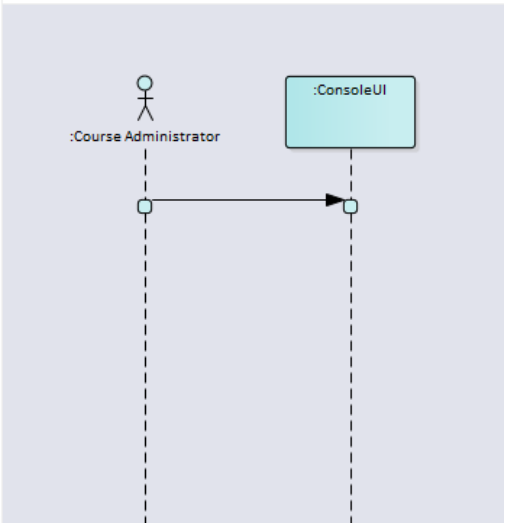


Drag and drop the ConsoleUI class from the Model to the Sequence Diagram drawing panel (Drop as: 'Lifeline').

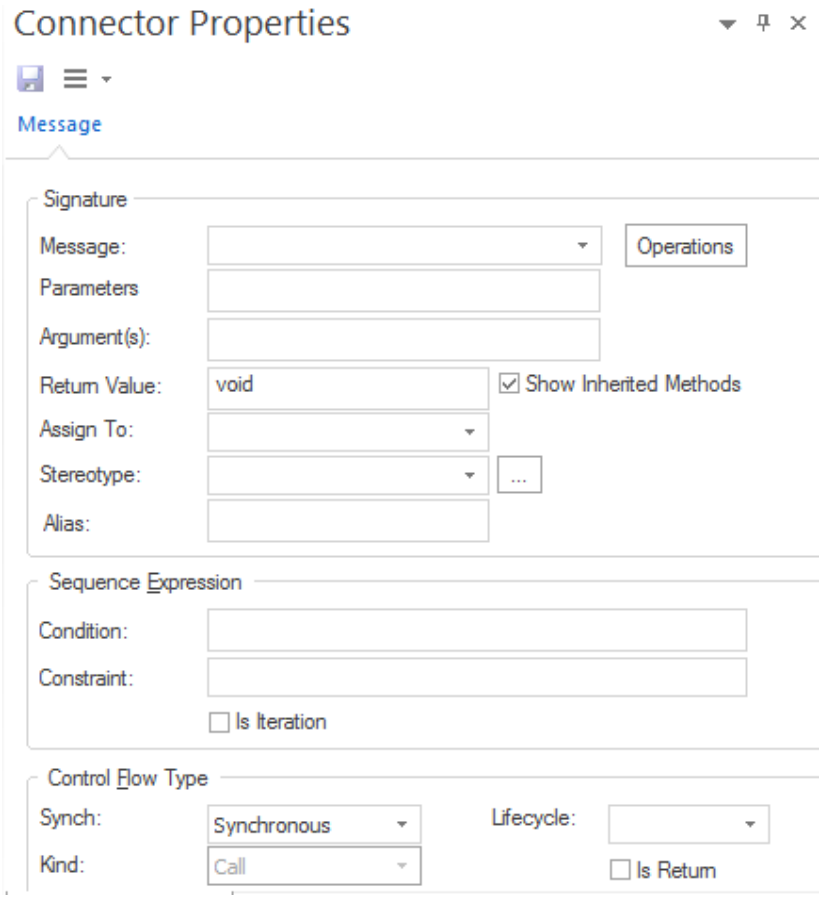




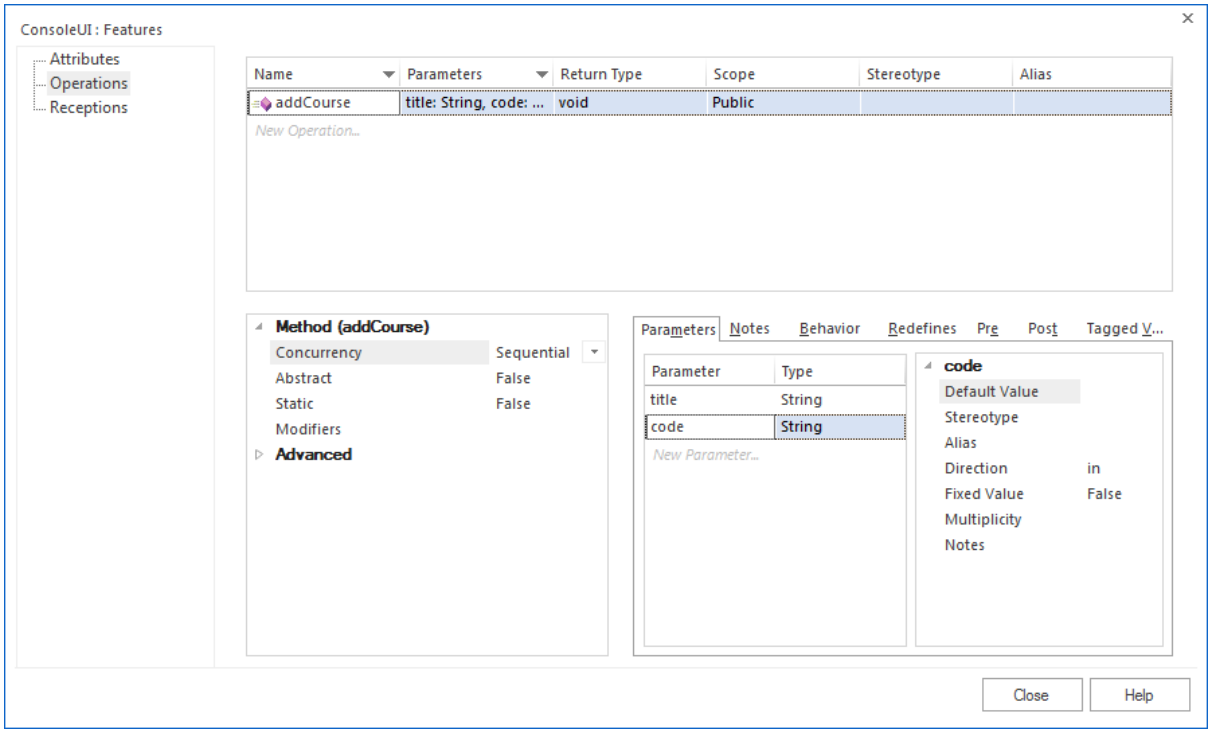
Drag from the Actor (Course Administrator) lifeline to the ConsoleUI lifeline to add a message.



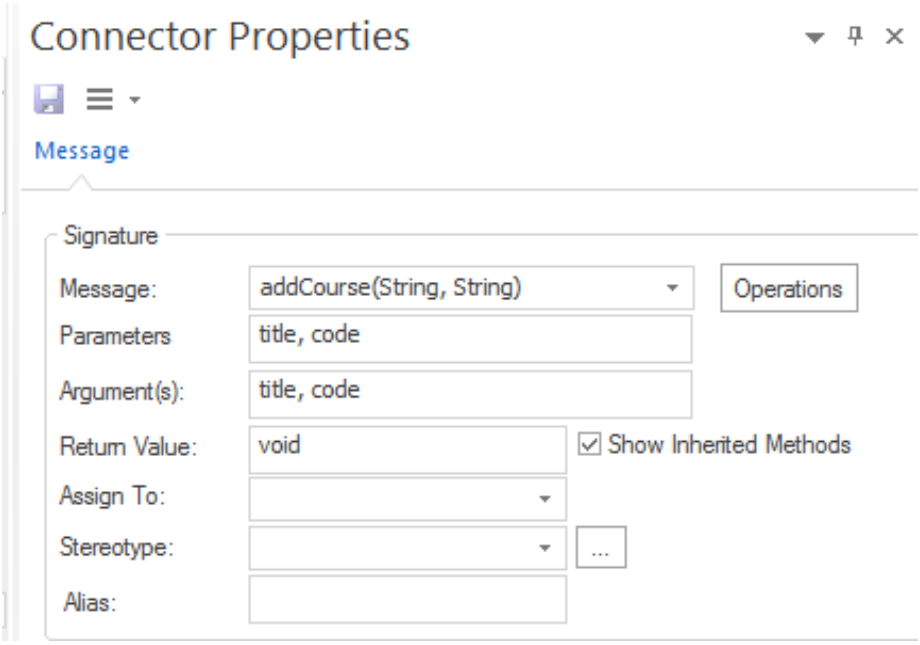
Double-click on the message line to open the Connector Properties window.



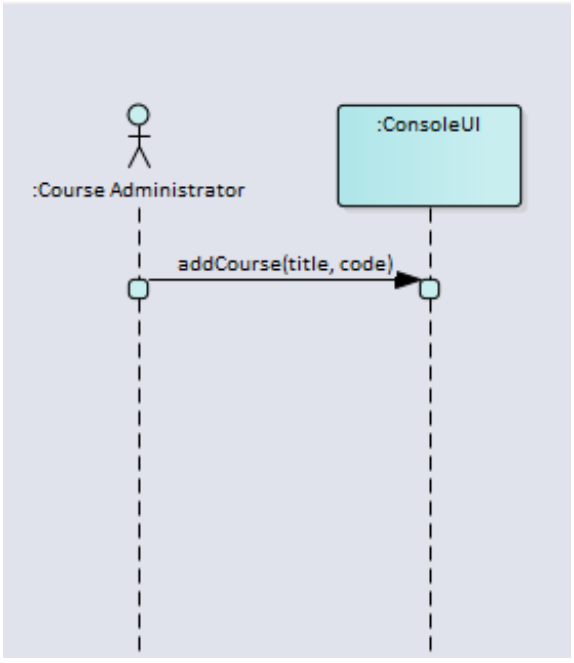
Click on the Operations button. This opens up the ConsoleUI class Features window with Operations tab displayed. Fill in the details for the addCourse() operation for ConsoleUI class.



After you finished, close the ConsoleUI: Features window. In Connector Properties window, type in ‘title, code’ for Arguments.

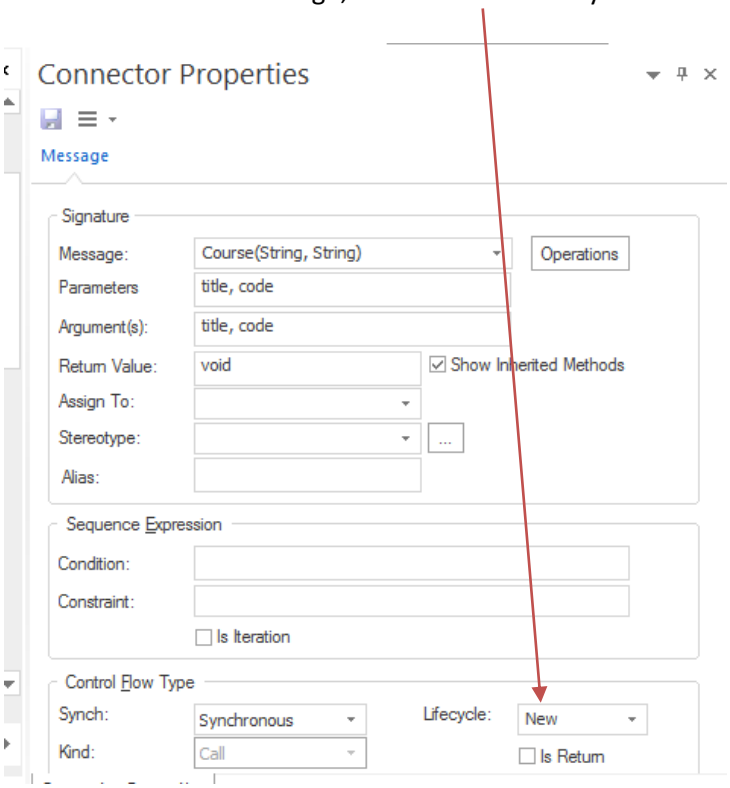


The message in the Sequence Diagram is updated.

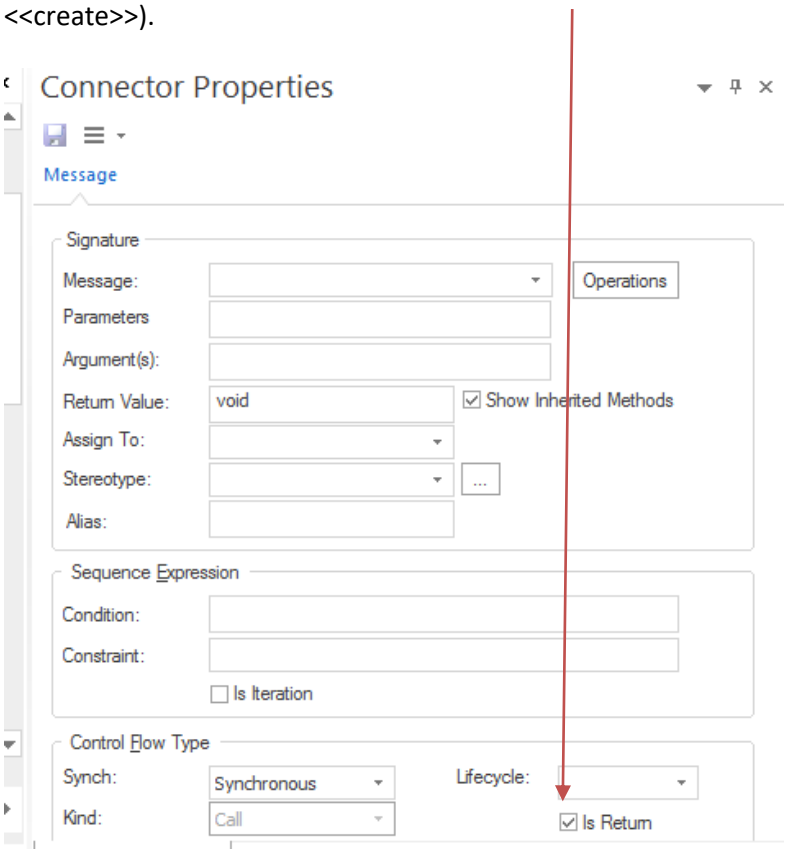


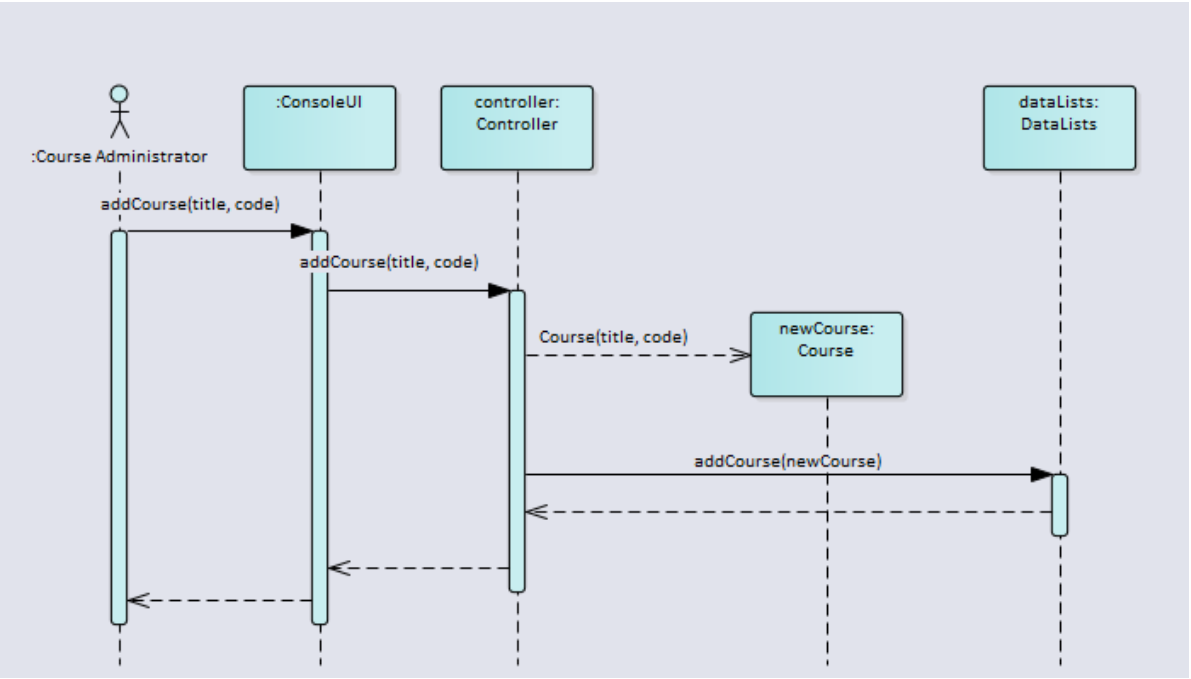
Repeat the process for each of the remaining objects and messages in the Sequence Diagram for Add new course Use Case.

For the <<create>> message, select New for Lifecycle.



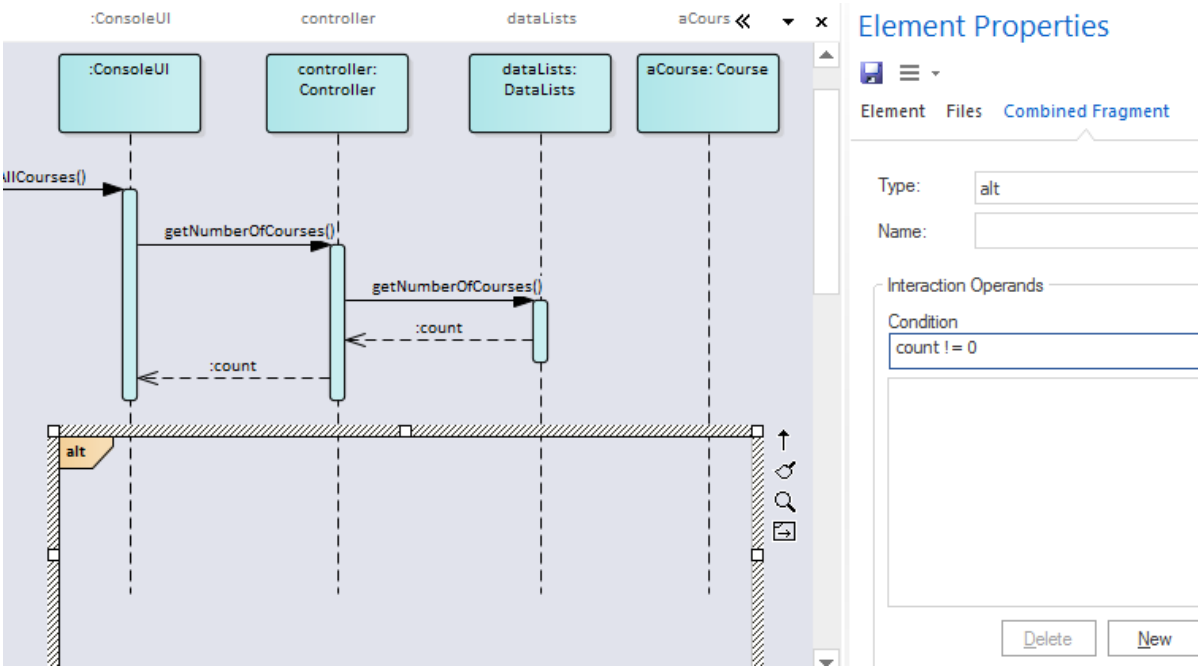
For the return messages, tick the Is Return checkbox. (Note: Don't put in a return message for <<create>>).



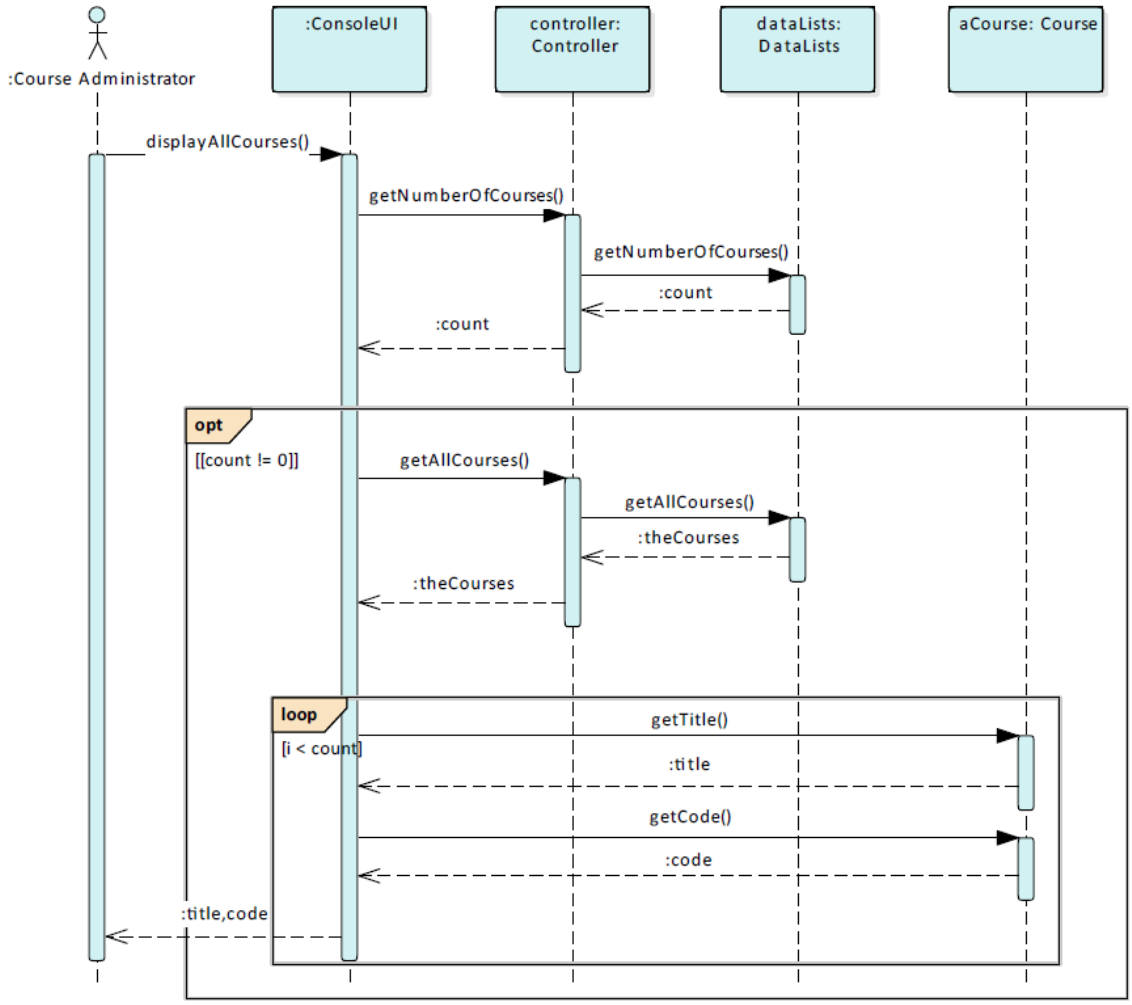


Repeat the process for the Display all courses use case.

For the Combined Fragment (alt/opt/loop), select the Type of Combined Fragment and add the condition(s) accordingly.



To print the Sequence Diagram, select Publish -> Print -> Print to PDF.



STEP 5: SIMULATE SEQUENCE DIAGRAM

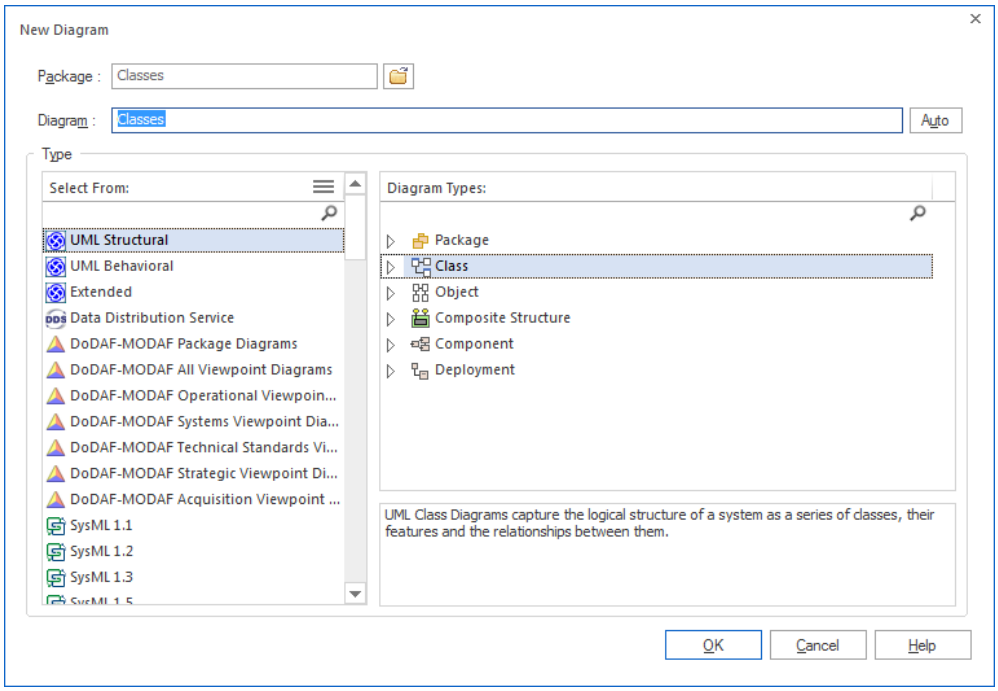
You can simulate execution of the Sequence Diagram.

- Open the Sequence Diagram drawing panel for the diagram you want.
- Select Simulate from the menu.
- Click the Start button.

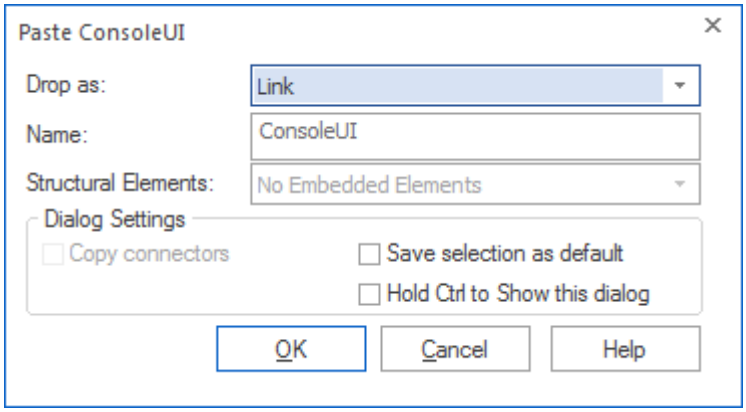
For the opt and loop conditions, you will be prompted to choose the alternatives.

STEP 6: CREATE DESIGN CLASS DIAGRAM

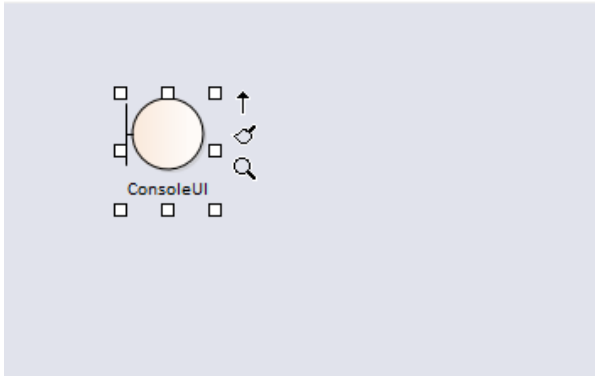
Right-click on the Classes package and select Add Diagram (Type: 'UML Structural'; Diagram Types: 'Class')



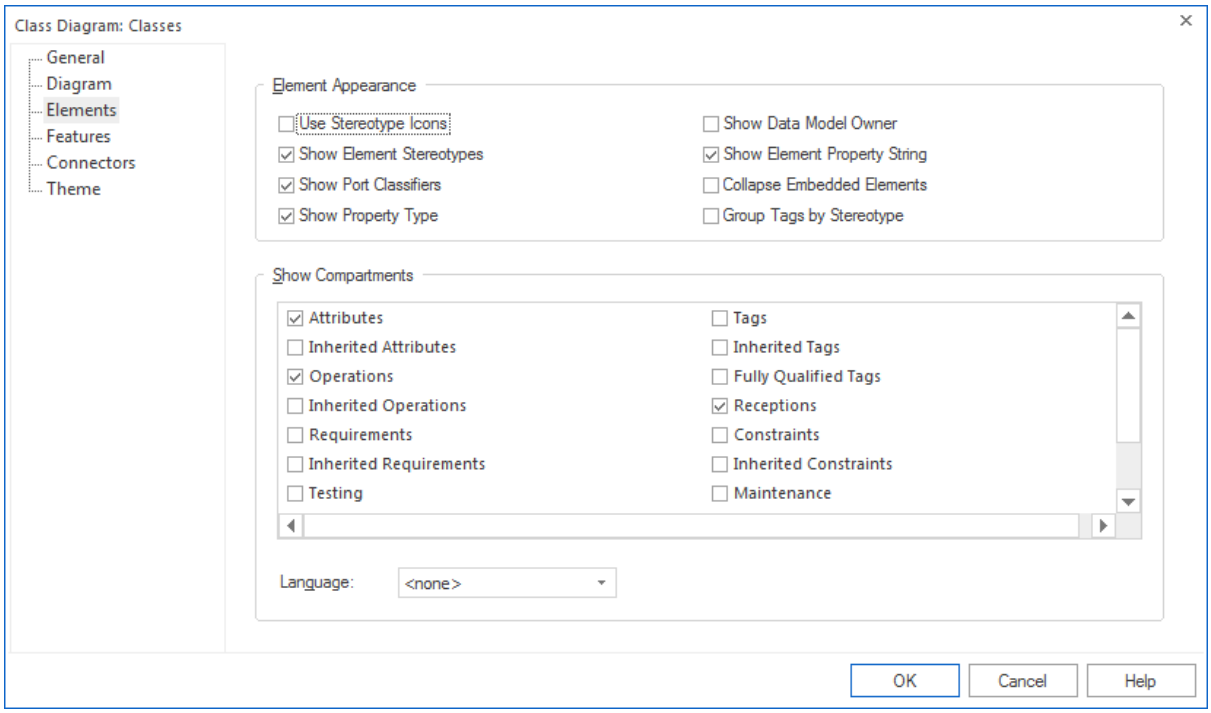
Drag and drop the ConsoleUI class from the domain package. (Drop as: 'Link').



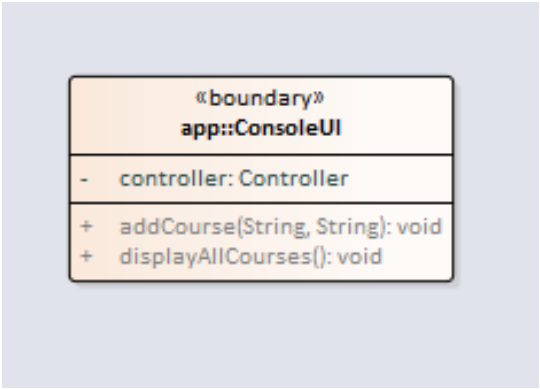
A boundary icon is added to the Class Diagram drawing panel.



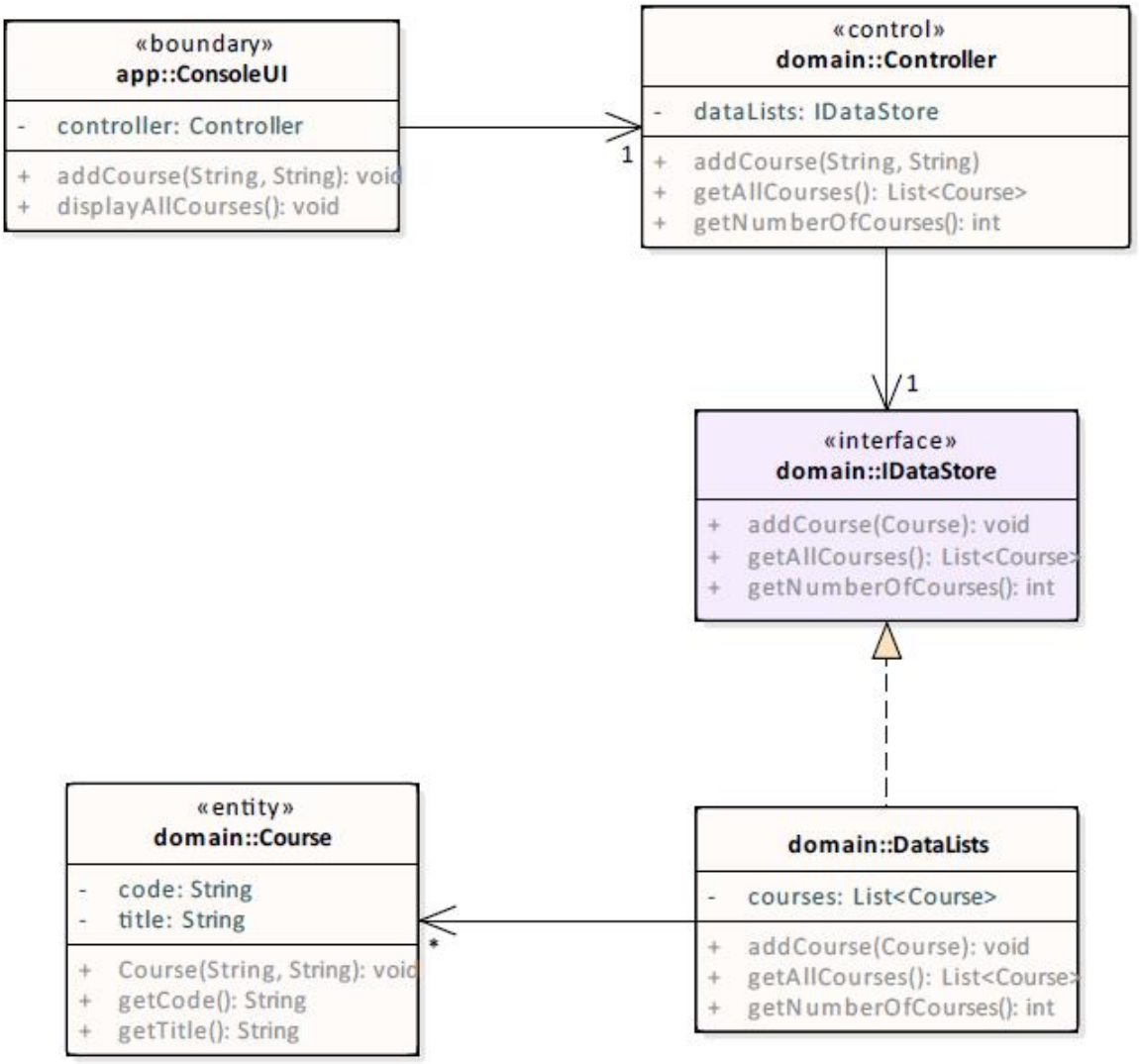
You can change this to a normal class icon so that the details of the class are shown. Right-click on the drawing panel and select Properties. Select the Elements tab and uncheck the Use Stereotype Icons checkbox.



The boundary icon changes to normal class icon with details shown.



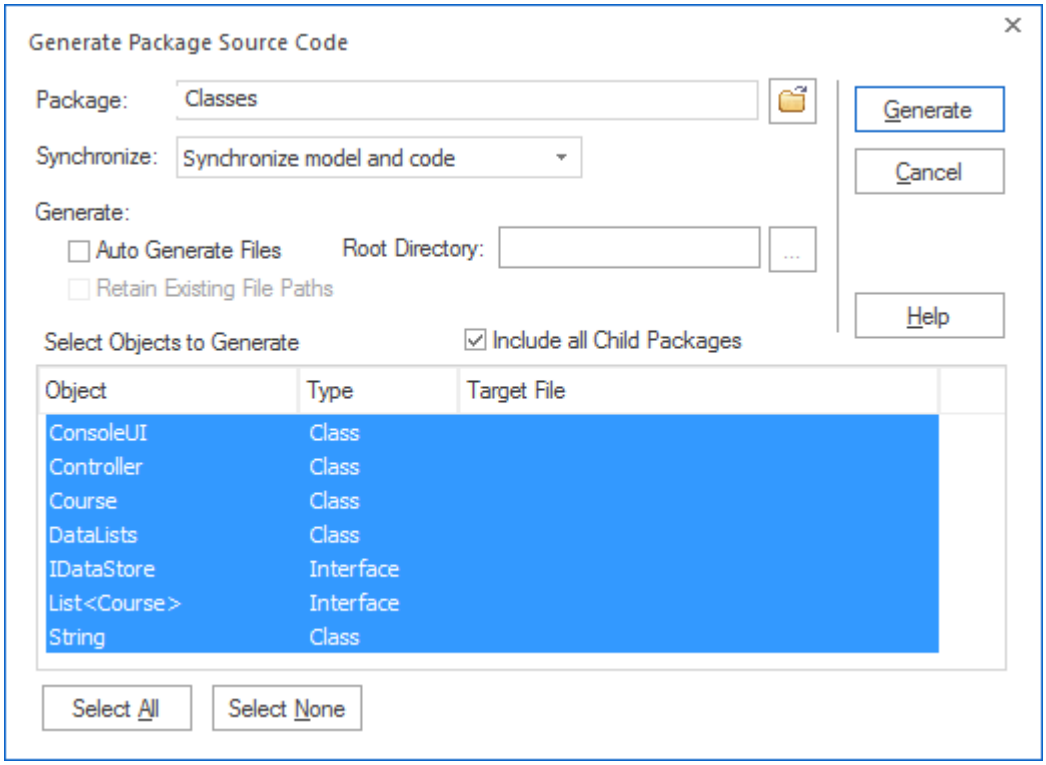
This is the complete Class Diagram for Iteration 1.



Note: The CoursesApp class is not shown. It should be included in the final Design Class Diagram after the coding is completed.

STEP 7: GENERATE CLASS CODE (PARTIAL)

You can generate the partial class code. Click on Model. Then from the menu, select Code -> Generate. Make sure the Include all Child Packages checkbox is checked. Then click Generate and specify the folder for the generated code.



Note: Some additional code are added which you may delete if you copy and paste into Eclipse.

STEP 8: CONTINUE FOR ITERATION 2

Add the 2 use cases for Iteration 2 and modify/add to the Model and Diagrams accordingly.