WESTERN UNIVERSITY - CANADA
FACULTY OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

**SE 2203B – SOFTWARE DESIGN**

# Laboratory 3: Cameo Systems Modeler – Use Case Diagrams

**Due Date: February 3rd , 2023 – 11:55PM**

## 1 Goal

- In this lab you will learn how to use Cameo Systems Modeler to create UML use case diagrams.

## 2 Resources

- SE2203b_Appendix_A_2023.pdf

## 3 Directed Lab Work

### 3.1 Download and Install the Cameo Systems Modeler (MagicDraw software)

- Please refer to Appendix A to download, install, and get started with the Cameo Systems Modeler (MagicDraw software)

### 3.2 Setting the perspective, you will use in MagicDraw

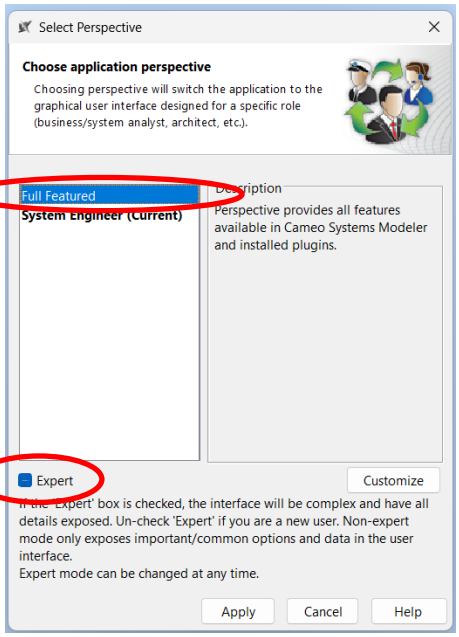


*Figure 1*

- The first time you open MagicDraw (after installing it) a dialogue box "Select Perspective" will ask you to specify what type of user you are using. Set the options as shown in Figure 1. If MagicDraw was installed already or the dialogue box did show up, open the "Select Perspective" window using the menu option **Options→ Perspective → Perspective**, and set the option as shown in Figure 1.
- If the Welcome screen appears, click the close "X" symbol in the welcome tab to close it. See Figure 2.

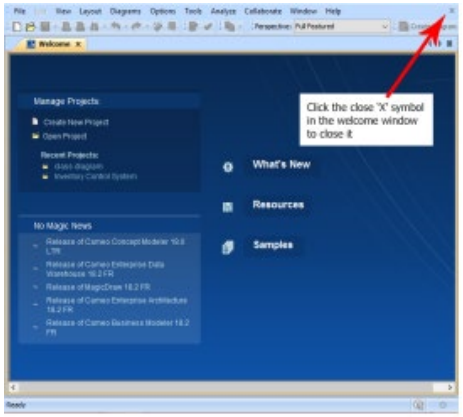


*Figure 2*

### 3.3 Creating a new project

- We are now ready to create a new project which will include our Use case diagram. To do this click on the menu option **File → new project**.
- Selecting this menu option brings up a dialogue box asking a name for the project and a place to save it. The screen shots in Figure 3 tell you which options to choose in each dialogue box.

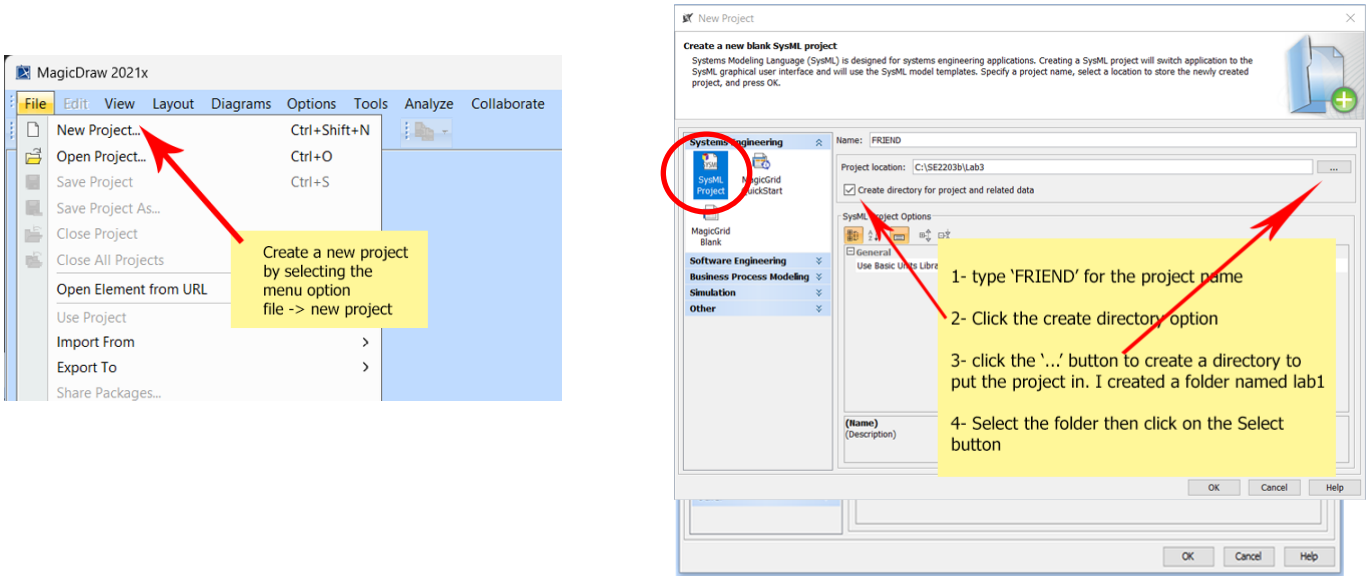


*Figure 3*

## 3.4 Creating a new diagram

- We now have a relatively empty screen; you can think of it as consisting of 4 main areas (see Figure 4):
  - Main menu, Main toolbars, Model browser, and Drawing pane
- Along the toolbar there are a series of icons which allow you to easily create new UML diagrams of various types. On the left hand side of the screen there is a Model browser with two tabs along the top of it clicking on the second one 'diagrams' provides us with a graphical display of the diagrams we might have in the project, as we would expect this is empty at the moment. Finally notice that at the top of the screen above the Main menu you are provided with the actual project filename 'FRIEND.mdzip' in addition to where it is on the hard drive.
- Besides clicking on 'Create Diagram' icon on the Main toolbars to create a new diagram is it possible to do it the old fashioned way by using the menu option Diagrams → Create Diagram.

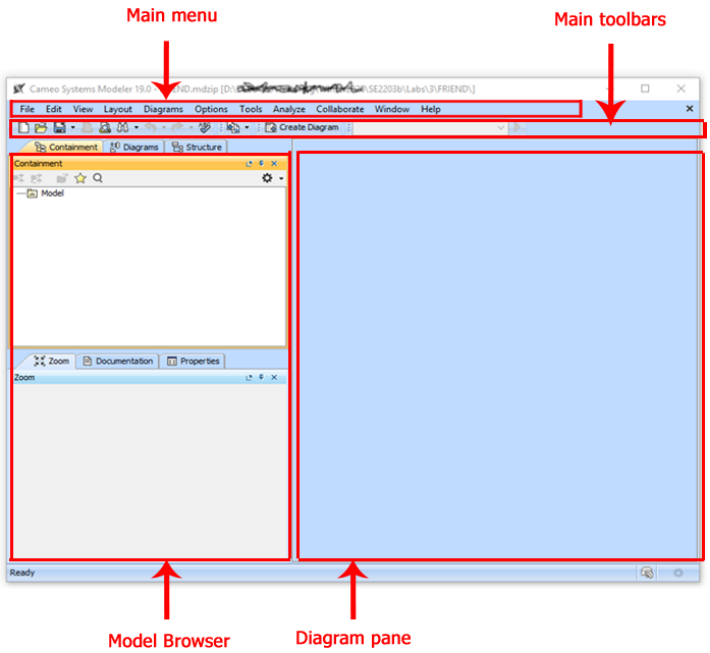


*Figure 4*

- Once you choose this, the diagrams dialogue box appears, choose Use Case diagram and then click Create, follow the instructions shown in Figure 5.

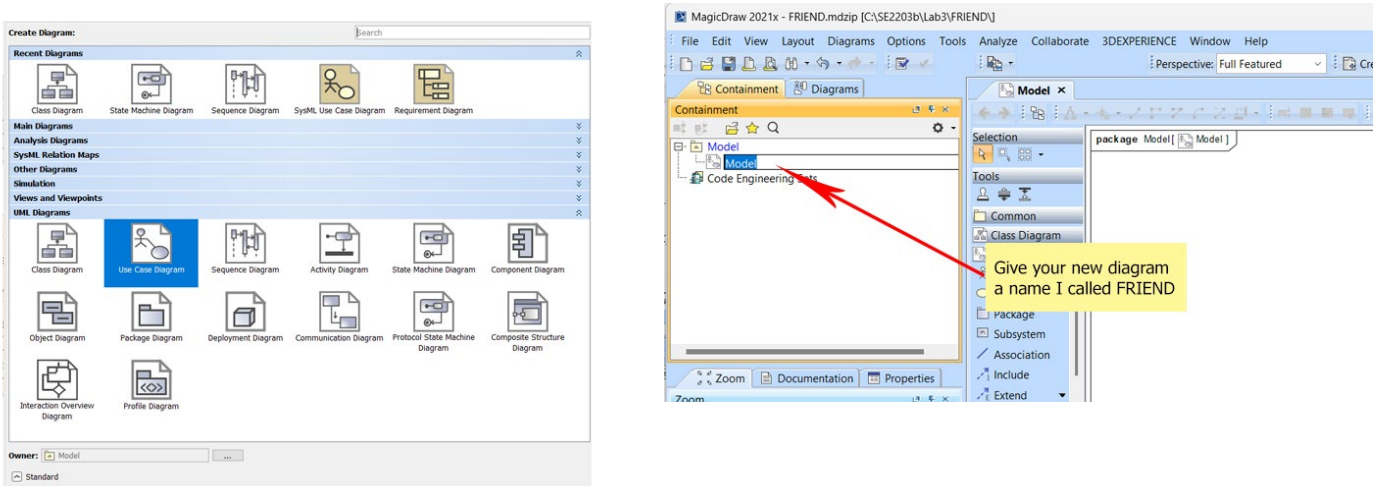


*Figure 5*

## 3.5 Creating an Actor

- The panel on the immediate left of the diagram pane provides an easy way of creating various UML elements onto the pane by simply dragging them across.
- To name your actor just start typing the name, to stop click anywhere else in the diagram pane.
- Now, add two actors on the diagram pane and name them 'FieldOfficer' and 'Dispatcher', see Figure 6.

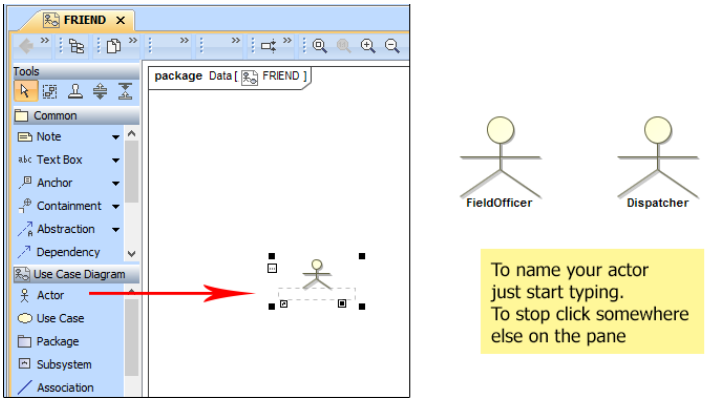


*Figure 6*

## 3.6 Creating individual use cases and associations

- To create individual Use Cases you select the use case icon on the left hand panel and drag it onto the diagram pane. To name it you just start to type immediately.
- Actors in Use Case diagrams communicate with Use cases via associations. Note that, the term association here is just the communication line it does not have the same meaning as an association in UML Class diagrams.
- The diagram on Figure 7 shows you how to create an association. The pop-up menu appears when the Use case is selected.

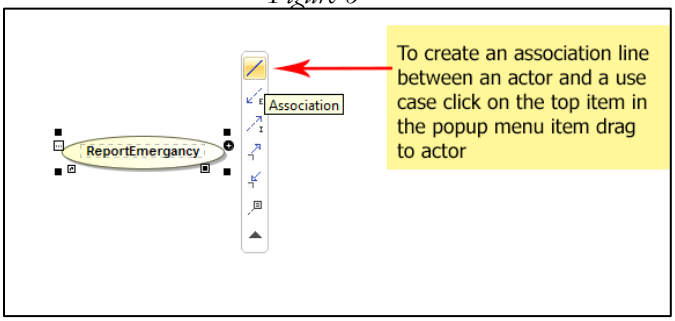


*Figure 7*

- Once you start to add several associations the diagram will become to look rather messy. One easy way of tidying it up is to change the style of the lines. I would recommend that you usually keep the same line style for all the lines within a particular diagram.
- The Use case diagram we are creating is to represent the system functionality are going to develop, one of the main purposes of a Use Case diagram is to determine what functionality are inside the system and what are outside. We will use the notation of UML class in order to represent the system boundary as such we the use case will be inside the class and all actors will be outside the class. See Figure 8.

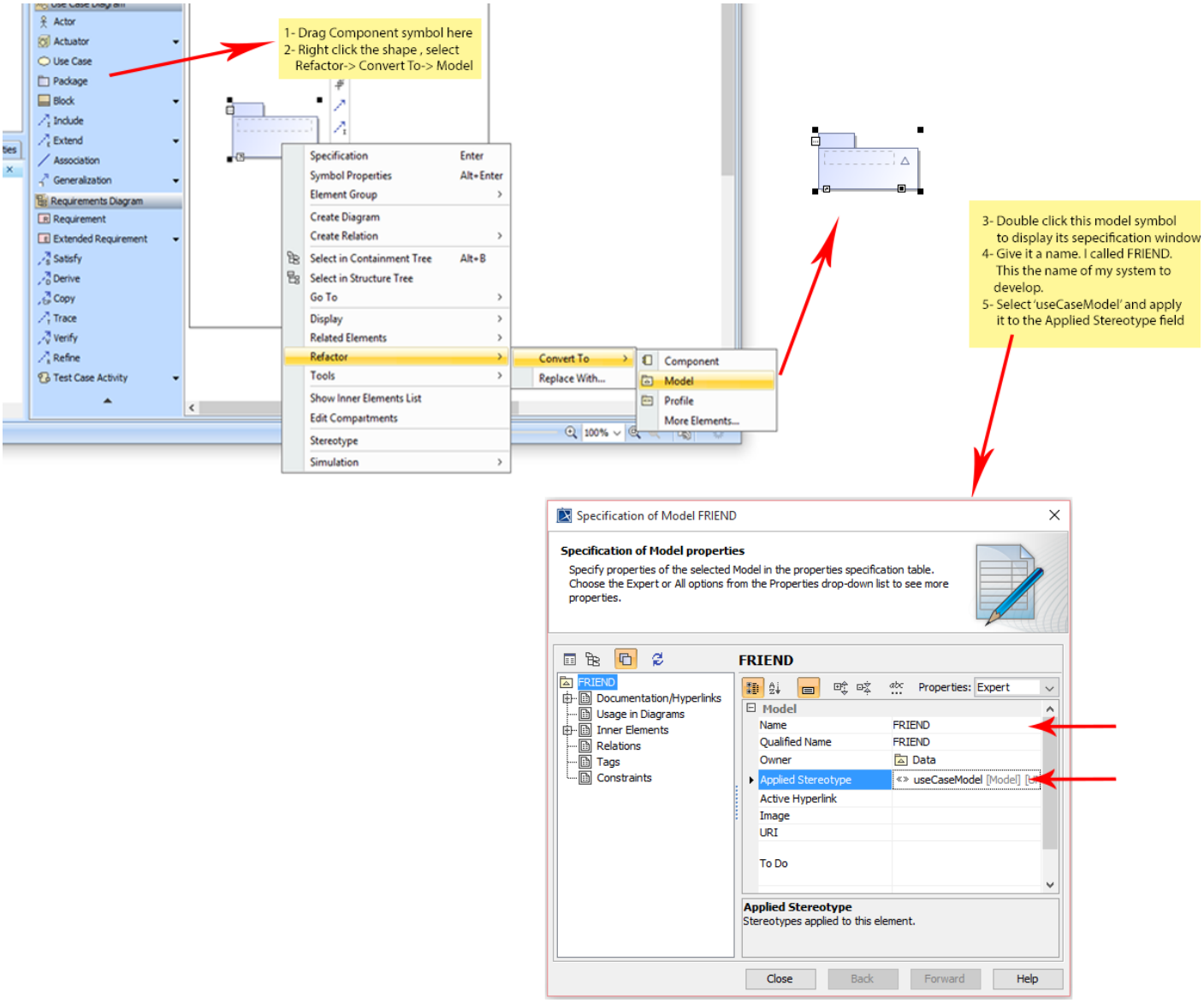


*Figure 8*

- After creating the system boundary drag and drop the created use case inside the model box. See Figure 9.

- To determine the type of the association line, double click this line and enter <<initiate>> or <<participate>> in the name field, as shown in Figure 10.
- If you need to add a note somewhere to you model item, click on this item, then click on the note icon and finally click again to place the note in the diagram pane.
- Now you need to complete your UC diagram for FRIEND system. You should have something similar to the one in Figure 11.

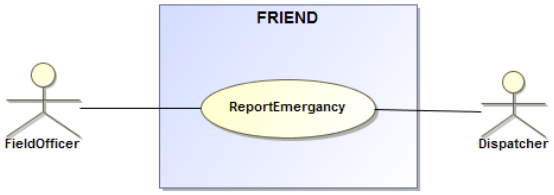


*Figure 9*

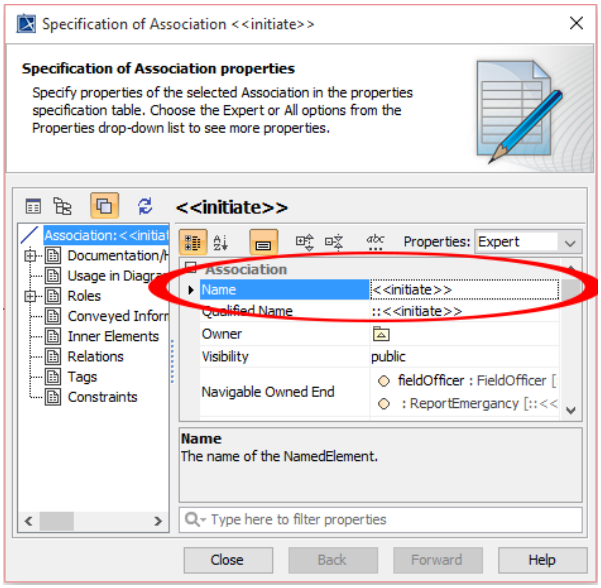


*Figure 10*

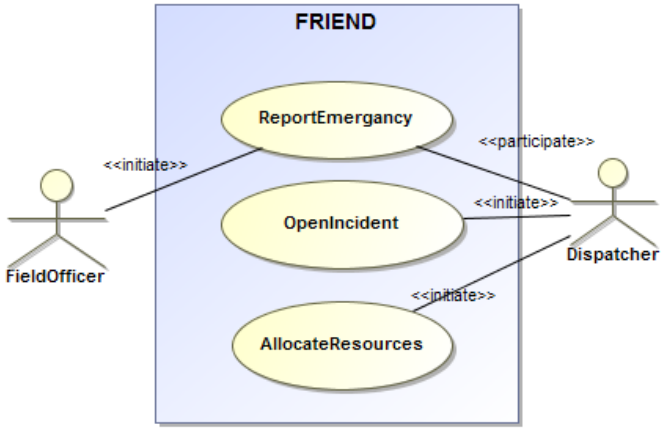


*Figure 11*

| **Checkpoint** | **If you are unable to get this exercise run successfully, you should talk to your TAs during their announced office hours (the lab hours).** |
|---|---|

## 3.7 Building one more UC diagram

- Follow the instructions above to create a new project called 'OnlineStore.mdzip' that has a UML use case diagram called 'OnlineStore' so that your UC will look like the one shown in Figure 12.
- You will need to use the same technique for adding association line described above to add UC relations such as <<include>> and <<extend>>.

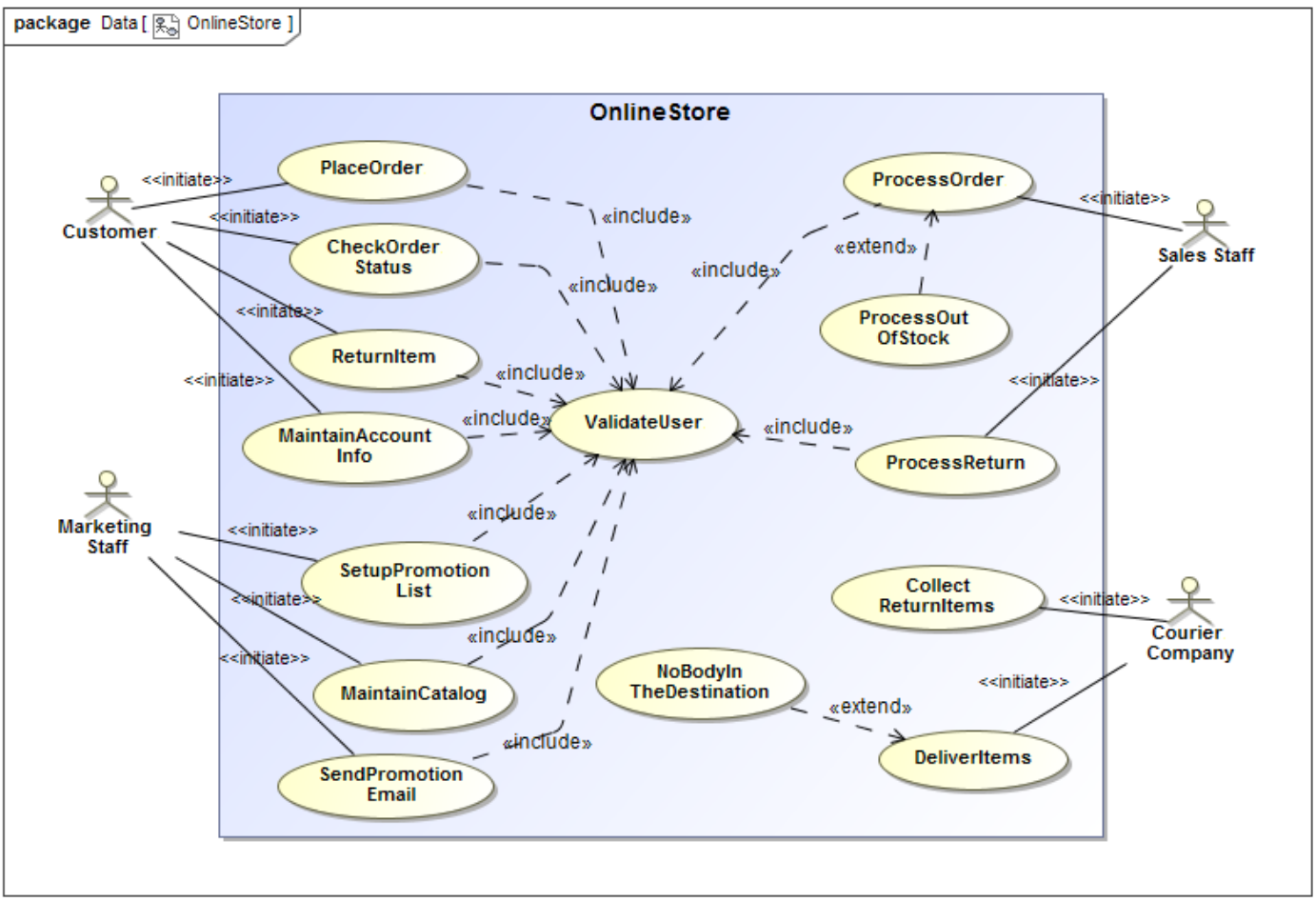


*Figure 12*

## 4 Hand In

- Submit the following files through OWL, to be graded out of 20.
  1. *yourUwoId*_ FRIEND.mdzip
  2. *yourUwoId*_OnlineStore.mdzip