Quick Notes – UML Diagrams
Using Visio to make UML diagrams

1. To begin, open a new UML model (it’s within Software and Database). It’s helpful to show the Model Explorer (UML > View > Model Explorer).
2. The sheets to be used are there (each has it’s own menu of shapes):
   a. UML Use Case (Use Case Model)
   b. UML Static Structure (Domain Model, Class Model)
   c. UML Sequence (Sequence Diagram)
3. To add sheets to the file, right click the Top Model package in Model Explorer, the New… In Model Explorer you can right click the sheets and give them clear names.
4. General method for drawing: drag shapes into the sheet. Double click items to open details for the shape and edit them. If an object is already in the Model Explorer, you can drag it to the drawing and get the full definition you did earlier.
5. In Use Case Model:
   a. To add <<includes>>
      i. Menu UML > Stereotypes > New
      ii. Change the stereotype name to includes
      iii. Change the base class to Generalization
      iv. To use in your model, select Uses shape, double click to change to includes
   b. Use Message from the Sequence Diagram for inputs with arrow.
   c. Communication shape for the plain lines
   d. Double click an item in the drawing and update the properties to remove unneeded names, *s, etc.
   e. Notes shape for comments
6. In Static Structure Model:
   a. Class shape for the entire system during system analysis. Add operations and parameters.
   b. More classes to be added in the domain model and during design.
   c. For associations use Binary Association shape or Association Class shape (three way or qualified association)
d. To name the association, right click it after it is drawn, pick Shape Display Options, and click Name. Then change to the name you want as below.

e. You can make other changes (multiplicity, names and names of ends) by double click the shape.

f. Define operations by double click the class after you draw it, then while the operation is selected click properties and select parameters to add them.

7. In Sequence Diagram:
   a. Add operations (methods) to the class first (in the Static Structure), including any parameters.
   b. Drag existing actor(s) to the sheet from Model Explorer
   c. Add lifeline and activation shapes
   d. Add Object(s) Lifelines as necessary – double click and pick the right class from Classifiers (class already defined), right click and Shape Display Options and check Classifier, uncheck Name.
   e. For messages in the diagram use Message(Call) shape and Message (Return) shape (at least until we discuss some of the others – asynch messages). Self messages (looped shapes) are useful to add details showing what is happening.
   f. After adding a message, double click it to select the right operation from the receiving class. You can also add operations from the sequence diagram using New.

8. General and Miscellaneous
   a. To change the default name that appears in gray area above a sheet, right click the name, uncheck Lock Text Edit, the double click the name and edit or replace it.
   b. Can’t get something to appear even after you enter it into a drawn items properties? Try right click the item on the drawing, Shape Display Options, and play with these (e.g. Name, Classifier Name).

9. Questions
   a. How to define a parameter or type once and use it for attributes, method parameters, etc.
   b. In a 3-way association ("Association Class"), it’s possible to define methods but cannot get the object / class to appear in a sequence diagram (and have access to the methods). Work around: define the class again in the Model Explorer, add the same methods.
   c. How to get return values from the Class diagram to appear in the Sequence diagram return message

QuickNotesUMLVisio.doc
Version 4 (add <<includes>> template, classifiers for sequence diagram, message for Use Case inputs)
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Version 3 (editing sheets; more on operations, adding general section, adding questions)
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Version 2 (adding association naming, etc.)
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Version 1 (original)