



The University of the West Indies, St. Augustine
COMP 3607 Object Oriented Programming II
2020/2021 Semester 1
Lab Tutorial (Weeks 1 - 2)

This tutorial introduces you to a UML modelling tool called StarUML over the first two weeks of the course. We will create a variety of diagrams first on paper and then use the modelling tool.

Learning Objectives:

- Create use case, sequence and class diagrams on paper
- Translate paper-based designs to digital designs using StarUML

Section A: Paper work

Part 0A: Pair up and make a friend.

For parts 1 to 3, you will collaborate with a partner to produce 3 quick designs (emphasis on quick).

Part 1A: Create a Use Case (text) on paper

Construct a use case (story) that describes the process of borrowing a book from a library (goal). Ensure that there are at least two actors in your use case, interactions between the actors are clear, and there is at least one success scenario and one failure scenario for goal of the use case.

Part 2A: Create a Sequence Diagram on paper

Examine the use case scenario you created in Part 1 and choose at least two major classes that can be used to model an object-oriented solution for the goal. Create a sequence diagram that illustrates the interaction between the two classes using messages (operation calls, parameter passing).

Part 3A: Create a Class Diagram on paper

Examine the sequence diagram from Part 2. Choose two of the classes. Define the details of each class (attributes, operations), and the interactions between the classes (relationships: association/composition/generalisation). Ensure object-oriented principles are adhered to (encapsulation, abstraction).

TIP: Quick Links

Resources:

<https://www.uml-diagrams.org/use-case-diagrams.html>
<https://www.uml-diagrams.org/sequence-diagrams.html>
<https://www.uml-diagrams.org/class-diagrams->

Section B: Tool work (also in pairs)

Part 0B: Download and Install StarUML and Java extension (optional for this lab)

StarUML: <http://staruml.io/>

Java extension: <http://staruml.io/extensions>

TIP: Go through the documentation for StarUML for quick tips

<https://docs.staruml.io/>

Part 1B: Draw a Use Case Diagram using StarUML

- Convert your paper-based story from Part 1A to a use case diagram using StarUML.
- Refer to the appropriate steps for constructing a use case diagram specified in the tool's documentation: <https://docs.staruml.io/working-with-diagrams/use-case-diagram>

Part 2B: Draw a Sequence Diagram using StarUML

- Draw your sequence diagram from Part1B using StarUML
- Refer to the appropriate steps for constructing a use case diagram specified in the tool's documentation: <https://docs.staruml.io/working-with-diagrams/sequence-diagram>

Part 3B: Draw a Class Diagram using StarUML

- Draw your class diagrams from Part1C using StarUML
- Refer to the appropriate steps for constructing a class diagram diagram specified in the tool's documentation: <https://docs.staruml.io/working-with-diagrams/sequence-diagram>

Class Diagram Tips:

- ★ To suppress attributes: Format->Suppress Attributes
- ★ To suppress operations: Format->Suppress Attributes
- ★ To change symbol representation: Format->Stereotype Display

Section C: Post evidence of your craftiness

Post pictures of your hand-drawn and StarUML diagrams on the forum. Clearly label your pair contributions. Small prize for the best diagrams (voted by your tutor and lecturer).