

Attendance/Demo

To receive credit for this lab, you must make reasonable progress towards completing the exercises. When you have finished all the exercises, call your instructor or a TA, who will review your UML diagrams. For those who don't finish early, the TA will ask you to show whatever diagrams you have completed, starting at about 15 minutes before the end of the lab period. Finish any exercises that you don't complete on your own time.

Background

In this offering of SYSC 3120, we will be using the Violet UML editor and the Visio UML editor to prepare UML diagrams.

Violet does not have all the bells and whistles provided by many high-end UML IDEs; for example, Violet does not support the whole UML 2 notation, it doesn't generate source code from UML diagrams, it cannot reverse-engineer source code into UML diagrams, it does not provide semantic checking between diagrams, and it does not generate files that can be imported into other UML tools, nor can it read files prepared by other tools. The good news is, we do not need those capabilities in SYSC 3120. Furthermore, high-end UML tools are often difficult to learn or are too slow when all you want to do is produce simple UML diagrams quickly. Additionally, Violet is free and runs on any computer on which the Java Runtime Environment (JRE) 6.x is installed.

Microsoft Visio is a commercial editor that supports a larger part of the UML 2 notation than Violet. Similarly to Violet, it does not generate code, it does not allow you to reverse-engineer diagrams from the code. Although commercial, it is by default on the machines you have access to in the labs. Visio supports UML 2 by default. There are two possible ways to use Visio: with the standard Visio installation or with a specific UML 2.x stencil. In the former case, Visio maintains some level of consistency between the UML diagrams you draw. In the latter case, Visio does not maintain any consistency and doing so is up to the user of the tool.

Part I – Getting Started with Violet

Step 1: Create a new folder called sysc-3120-Lab-2.

Step 2: Download file com.horstmann.violet-2.0.1.jar from this Source Forge site
<http://sourceforge.net/projects/violet>
and store it in your folder.

Step 3: Launch Violet by double-clicking on the icon for the jar file.

The User Guide is available at <http://alexdp.free.fr/violetumleditor/page.php>.

Part II – Getting familiar with Violet's interface

Step 1: Click the label use case diagram, or from the menu bar, select File → New → Use case diagram.

Step 2: Draw the following use case diagram. At this stage you are not expected to know what the diagram means.

Step 2.1: To draw an element, click in the pallet and then in the canvas. So, click on the Actor Icon-Label in the pallet and then in the canvas. An actor symbol is created.

Step 2.2: To change the name of the actor, double-click on the actor symbol.

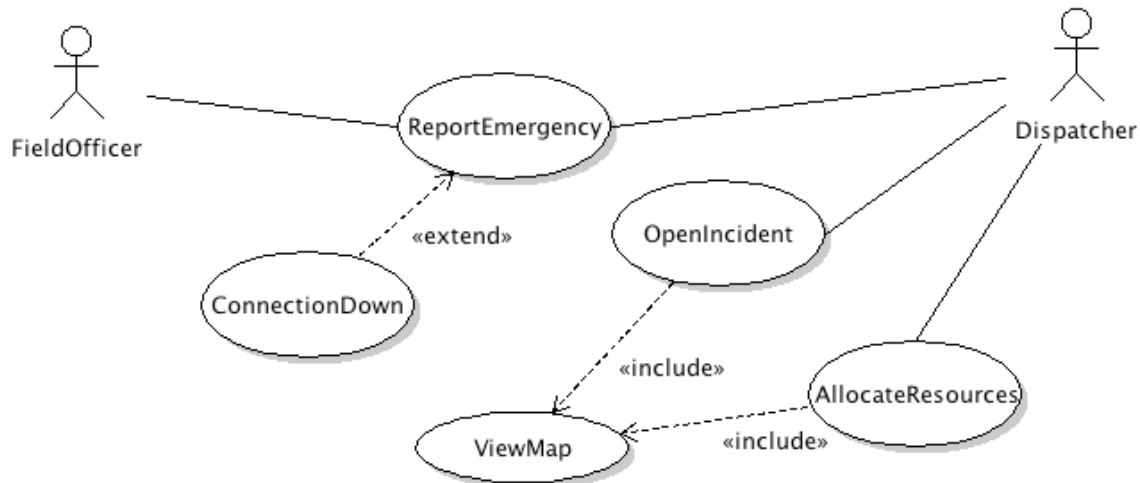
Step 2.3: To draw an edge, select the right element in the pallet and click in the canvas.

Step 3: Save the use case diagram in your Lab 2 folder by selecting File → Save. Use a descriptive file name; for example, ReportEmergencyUseCaseDiagram.

Step 4: Export your use case diagram as a PNG file by selecting File → Export to → Image file.

Step 5: Select File → Close to close the diagram.

Laboratory 1



Part III—Getting started with Visio

Step 1: Start Microsoft Visio (likely Start → All Programs → Microsoft Office → Microsoft Office Visio).

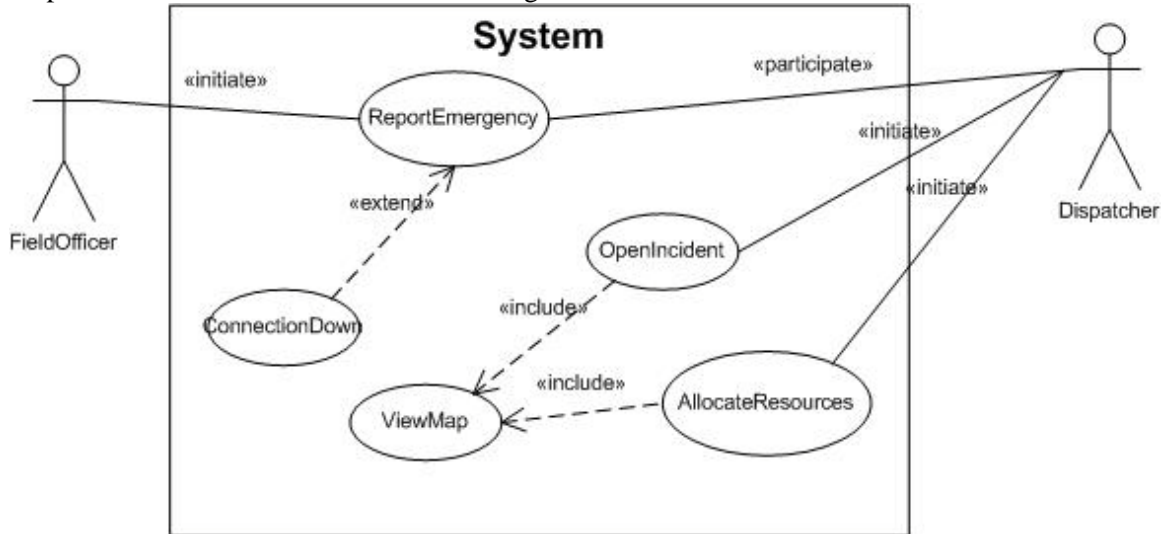
Step 2: Draw the following use case diagram.

- Step 2.1: To draw an element of the diagram, click on the corresponding symbol in the pallet, drag and drop that element in the canvas.
- Step 2.2: To change the name of an actor, simply select the element and type. Alternatively, you can double click on that element in the canvas.
- Step 2.3: To change the name of a use case, double click on the use case and change the name in the opening dialog box.
- Step 2.4: To control what is displayed at both ends of a relationship between an actor and a use case, right click on the relationship and select Shape Display Options. Uncheck the End options boxes.
- Step 2.5: The default rendering of use case extend and include relations is not standard UML 2. To change that, right click on the edge and select Format → Line. Select Line Pattern 02, Line ends 03 for Begin, and set Begin size to Extra Large.
- Step 2.6: The default wording being used for use case relationships, i.e., <<extends>> and <<use>>, is not standard UML 2. The standard names are <<extend>> (no 's') and <<include>>. To change this, in the Model Explorer pane, right click on the root of the tree (should read something like UML System ...) and select Stereotypes. Identify stereotype named extends, click on it and then on button Properties. Change the name by deleting the 's'. Identify stereotype named uses (at the bottom of the stereotypes list) and proceed similarly. Close the stereotype window.
- Step 2.7: The edges between actors and use cases do not yet show strings <<initiate>> and <<participate>>. Open again the stereotype window (see step 2.6). In the UML stereotypes dialog box, click New. Under name, type "initiate". You don't need to add the guillemets (<< >>). Under Base Class, select Association. Proceed similarly for "participate" (use the same Base Class). Click OK to close the UML stereotypes dialog box. In the canvas, double click on a relationship between an actor and a use case, and select the right string in the stereotype list. Click OK. Right click on that relationship and select Shape Display Options: check the General options box called Stereotype.

Step 3: Save the class diagram in your Lab 2 folder by selecting File → Save. Use a descriptive file name; for example, reportEmergencyUseCaseDiagram.

Step 4: You can also SaveAs, for instance to create a JPEG file.

Step 5: Select File → Close to close the diagram.



Part IV—Visio with UML 2 stencil.

Step 1: To be able to use the standard UML 2 notation (or most of it), you can download a Visio stencil: www.softwarestencils.com/uml/index.html. Follow the instructions on that page to download and install the right version of the stencil for your version of Visio.

Step 2: Draw the previous use case diagram using the new Visio stencil. All the elements of the UML 2 notation are together in the pallet.

Step 2.1: To draw a relationship between an actor and a use case, simply select the Straight Relationship element in the pallet. To add the stereotype to the relationship, select it (click) and simply type in. Do not forget the << and >> (this time you have to add this yourself because the stencil does not enforce UML 2 rules).

Step 2.2: To draw an <<extend>> or <<include>> relationship between two use cases, draw a Straight relationship, select the relationship, type in <<include>> or <<extend>>, and then right click and select Dependency. Be careful at the direction of the arrow.