**CIS-285 Software Engineering Tools**

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**Lab 1 – CASE Tools**

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From my research, it appears that there is a vast array of CASE Tools (computer-aided software engineering tools). For example, you can use Adobe Spark, which contains some UML diagram functionality. In reality, you can use any diagram-building software, it is just a matter of specific needs and preferences that each unique software offers. Some of the tools that I have found and will pursue for my personal use and for use in this course is Microsoft Visio, and also a free student software (you just need a .edu email account) called Mendix (<https://marketplace.mendix.com/link/studiopro/>). Microsoft Visio requires that you have a subscription, and our school does not provide this as one of the software in the Microsoft Office software suite, however I have requested a license from the IT department; I will likely you Medix since I am able to use it as a student for free.

Also, you can request a grant from the SIEMANS company using this URL: <https://www.plm.automation.siemens.com/global/en/our-story/partners/academic/>

They also provide free courses so that students can get certified in order that they might be equipped to work at companies that use their company’s software – of course it is advantageous to certify students so that they can give a continuous supply of skilled workers who are already familiar with the software they sell to companies. For example, Polaris is the name of a software that SIEMENS created that allows software engineers to build UML diagrams. They have a large software suite for 3D printing, modeling, and many other kinds of CAD and diagram software that are an industry standard. One other tool that I could use is Lucid Chart ([www.lucidchart.com/pages/](http://www.lucidchart.com/pages/)). It has UML support in its diagram software, and it allows for online collaboration in real time. They even have a downloadable version of their software. Another UML software is called Enterprise Architect (<https://marketplace.mendix.com/link/studiopro/>), which allows for integration into Microsoft Visual Studio. This is free for students. I will likely use this software if I am able to find it for free. It is also already installed on the lab computers at the school.

If you choose to use software that is not specific to UML diagrams (such as generic diagraming and drawing tools), it may make creating a UML more difficult or tedious (and less consistent), and you may lose a lot of features that UML-specific software offers. However, it will provide flexibility. One strategy that comes to my mind is to use a more generic tool to make quick edits and to quickly draw a rough-draft type of diagram; this will allow you to quickly create and manipulate the diagram without so much software in the background running on every change. Then, once you make the diagram or any changes to it (especially as it becomes more complex), then you could make the insertion into the UML-specific tool, which will likely run a little slower as it is providing lots of additional (and very helpful) features in the background. For example, I could even draw out everything by hand on a white board or a large sketch pad, and then after use my UML software to create the more official version. I will perhaps use some adobe tools to do the simple diagrams, and then use Enterprise Architect, Mendix, or Microsoft Visio for the official UML diagram. Best of all, I would like to use Enterprise Architect if I can get it to work on my machine.

Finally, I notice that most of the UML software (and probably the most useful and powerful) is very expensive, or it is only free to students. They often have free trials or limited versions of it. I imagine the cost is so high because many companies spend a lot of time create these CASE tools and are no doubt trying to make their money back and make a profit.

Here are the links to the other tools the professor provided:

Rational Software Architect (<https://www.ibm.com/products/rational-software-architect-designer>)

[https://www.visual-paradigm.com/solution/freeumltool/Links to an external site.](https://www.visual-paradigm.com/solution/freeumltool/)

[https://creately.com/lp/uml-diagram-tool/Links to an external site.](https://creately.com/lp/uml-diagram-tool/)

[https://online.visual-paradigm.com/diagrams/features/uml-tool/Links to an external site.](https://online.visual-paradigm.com/diagrams/features/uml-tool/)

[https://miro.com/uml-diagram-tool/Links to an external site.](https://miro.com/uml-diagram-tool/)

[https://www.smartdraw.com/uml-diagram/uml-diagram-tool.htmLinks to an external site.](https://www.smartdraw.com/uml-diagram/uml-diagram-tool.htm)