

NETS1500 HW5 Demo

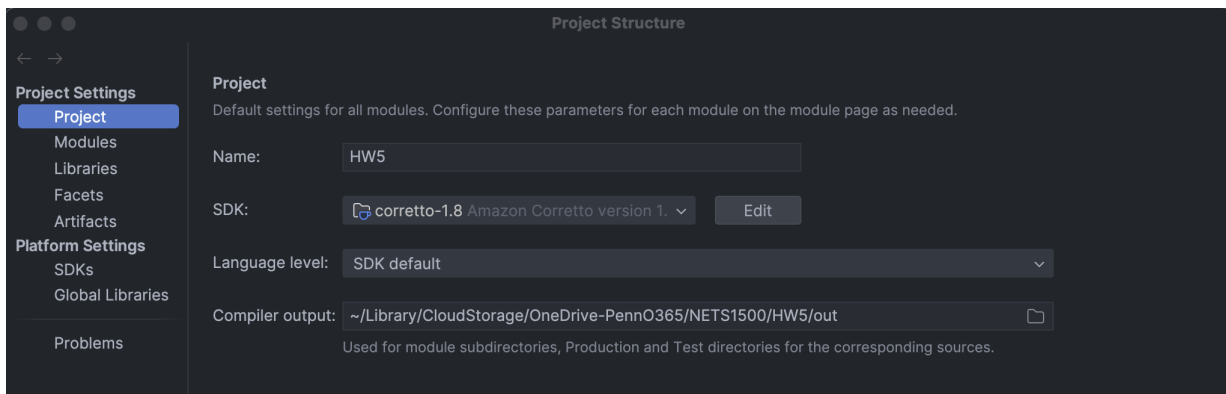
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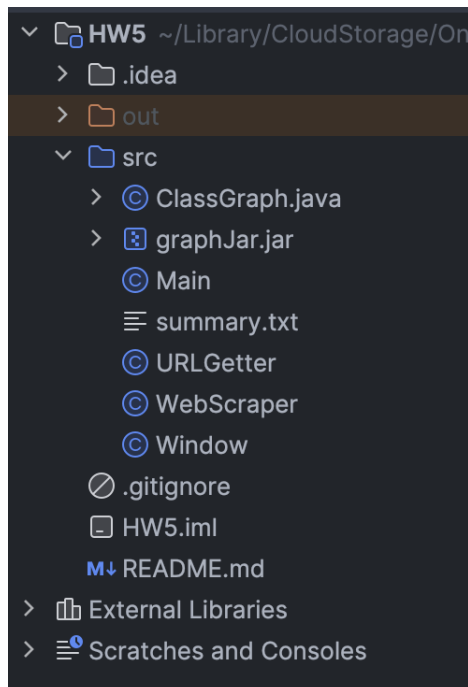
1 Running Code

Before running the code, make sure you have the following things:

1. Make sure the current version of Java is version 8:
 - 1.i. Open "File" → "Project Structure".
 - 1.ii. Make sure that under SDK, you have "corretto-1.8" selected:



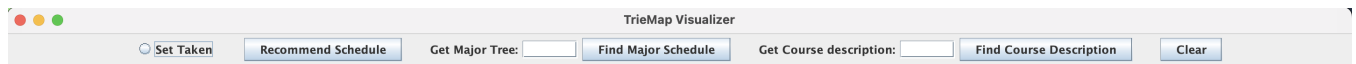
2. After this, make sure that your file structure is as follows:



3. In order to run the code, you just open "Main.java" and run the file.

2 GUI Guide

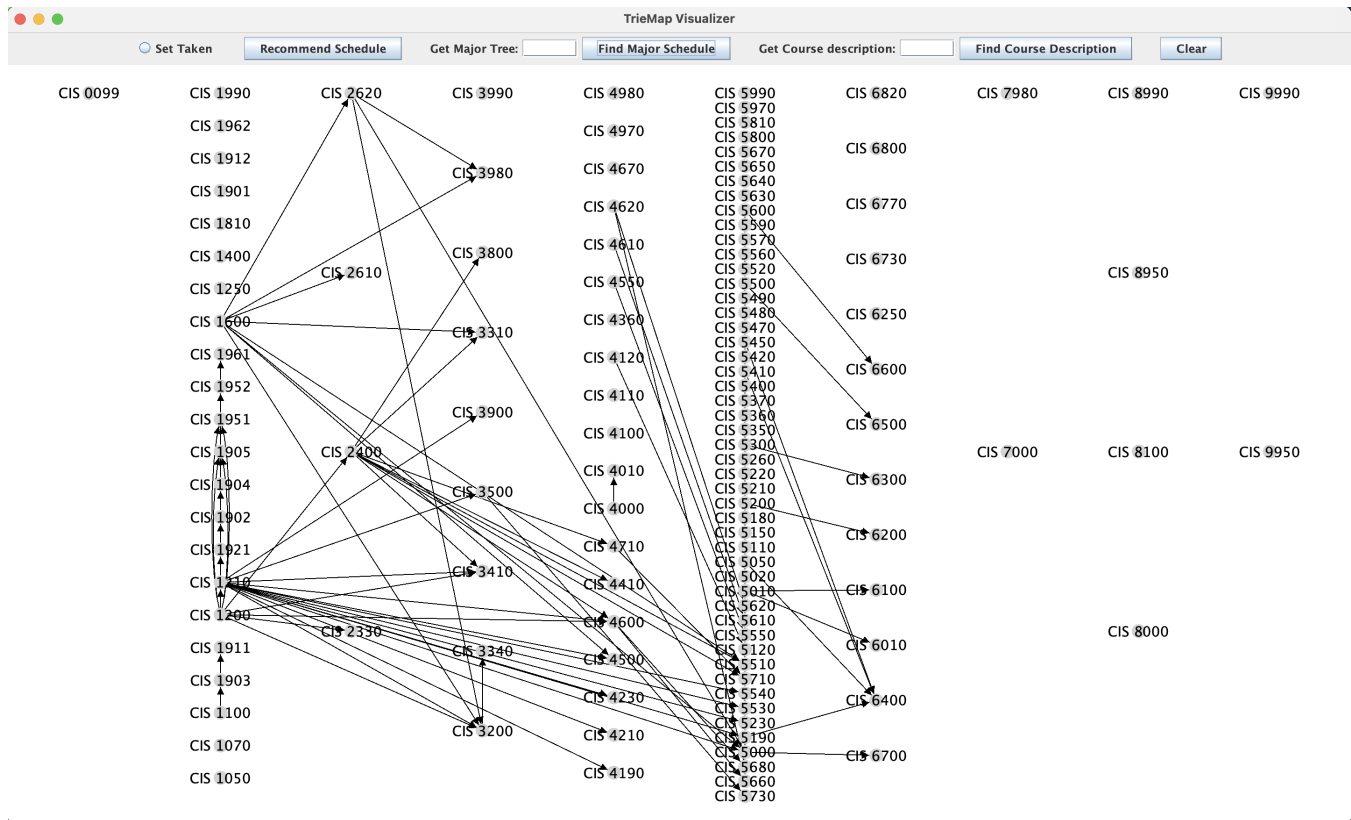
After running the project, you will be met with the following GUI:



We will now discuss each of the Java Swing components as well as other functionalities.

2.1 Get Major Tree/Find Major Schedule

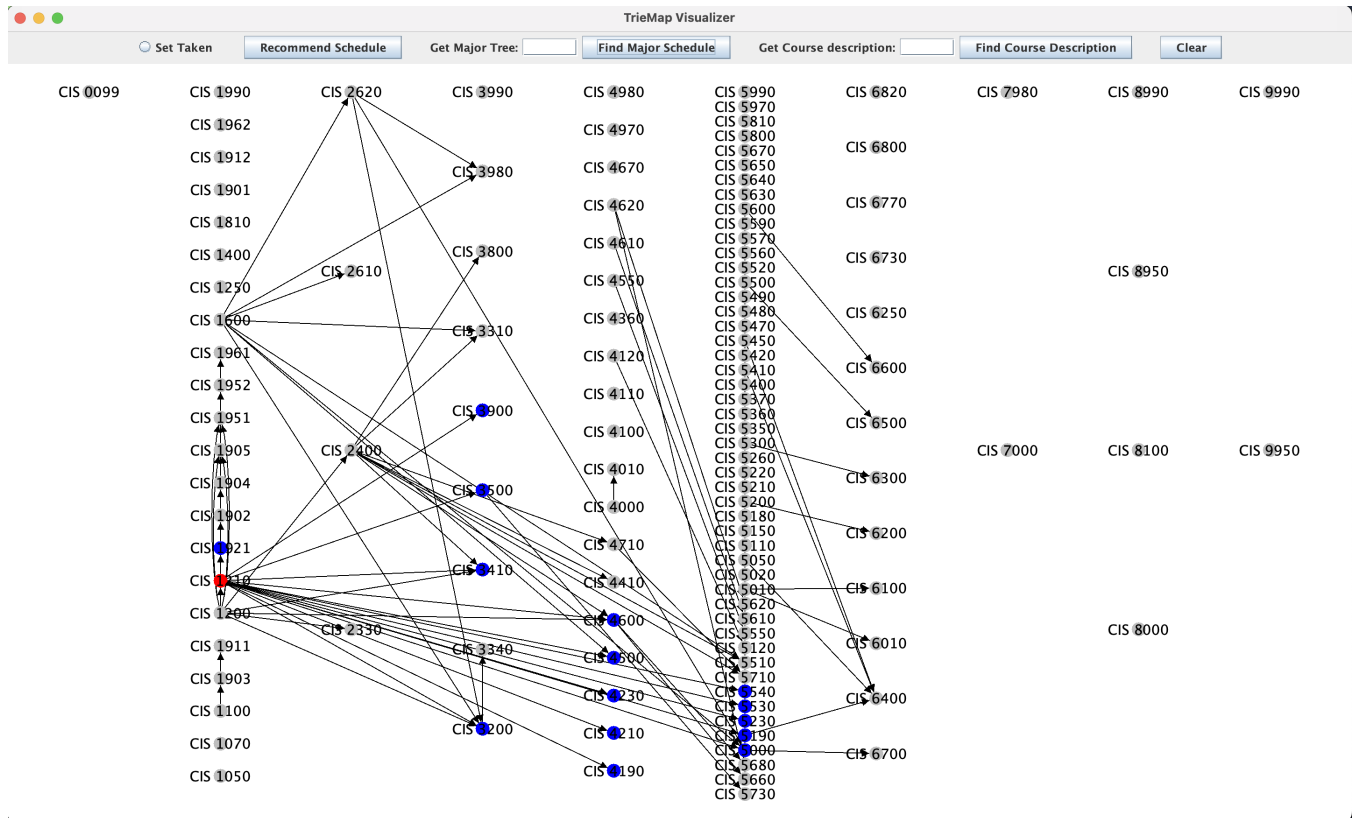
This is the backbone of our project. In the text box, the user writes their major "code" (i.e. CIS, ECON, etc.). Once the user presses the button, a graph is generated. Here is the expected output if the user were to input the string "CIS" and click the button:



As it can be seen, a graph has been built. This graph represents the set of classes labeled as "CIS" classes, with each directed edge $e = (a, b)$ such that $a \rightarrow b$ representing the notion that class a is a prerequisite for class b . Clearly, each node is labeled with the class that it represents (i.e. CIS 0099 in the top right corner is a prereq for no other class).

2.2 Clicking on Graph Nodes

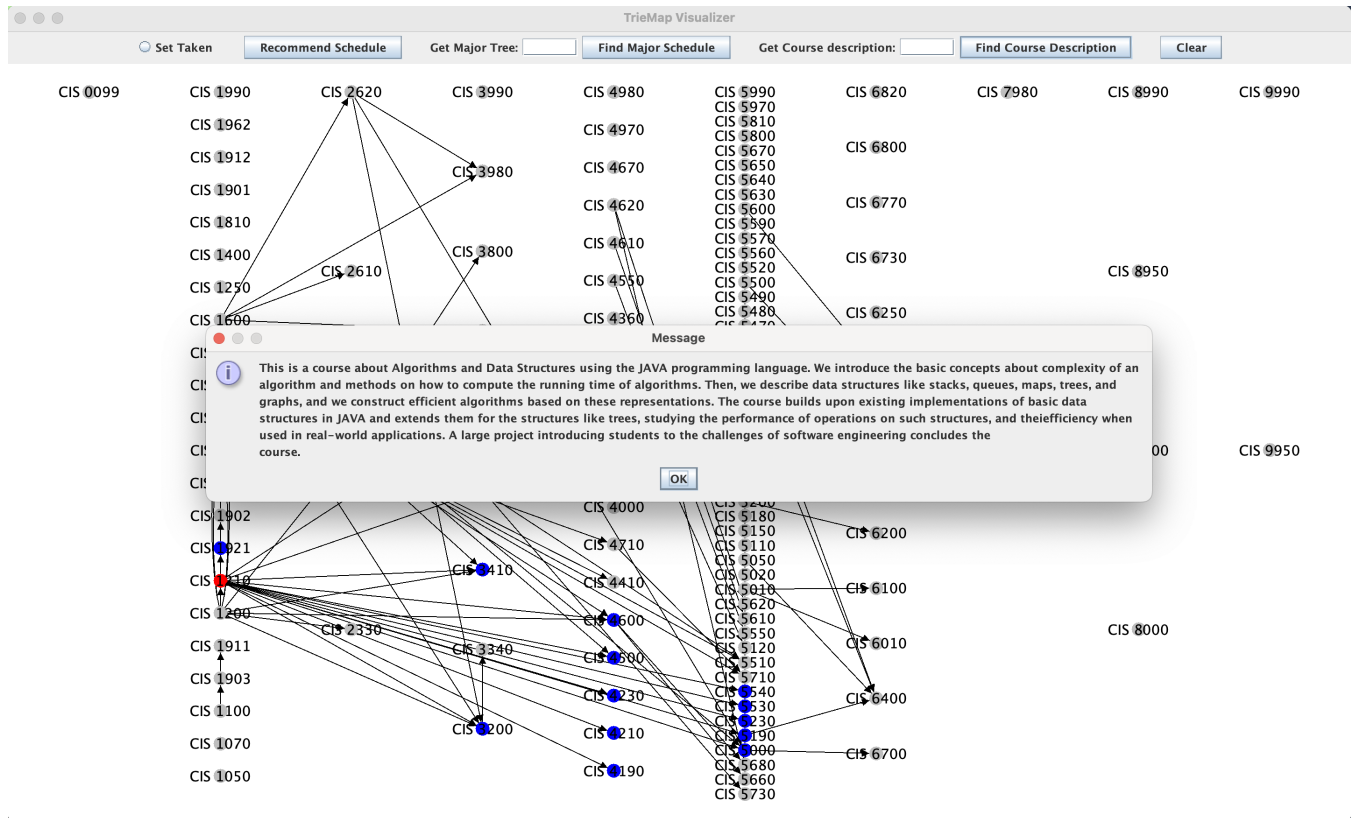
Due to the complexity and busyness of some of the graphs, we added another function that can help highlight the structure of the graph. If a user clicks on a class, it highlights the selected class in red, and the classes that require it in blue. For example, in the same CIS example, the user can clearly see that CIS 1210 is a prerequisite for a lot of classes; it is hard, however, to identify these classes due to the complexity of the graph. Therefore, clicking on the CIS 1210 node results in the following update.



As it can be seen, the classes that require CIS 1210 are clearly identified in blue. If you click on another node, it resets all nodes back to their original colors and then highlights only the new node and the classes that require it.

2.3 Get Course Description/Find Course Description

This allows the user to search for the description of some class on the graph. Note that this **only works for classes currently on the graph**. For example, you are unable to search for the class "ECON 1000" while the CIS major graph is currently rendered. In order to search for a class, you just type the class code as it appears on the node (with or without a space). For example, given the same CIS example, if the user wants to know what CIS 1210 is, they can type into the box "CIS1210" or "CIS 1210" and will get the following result upon pressing the button:



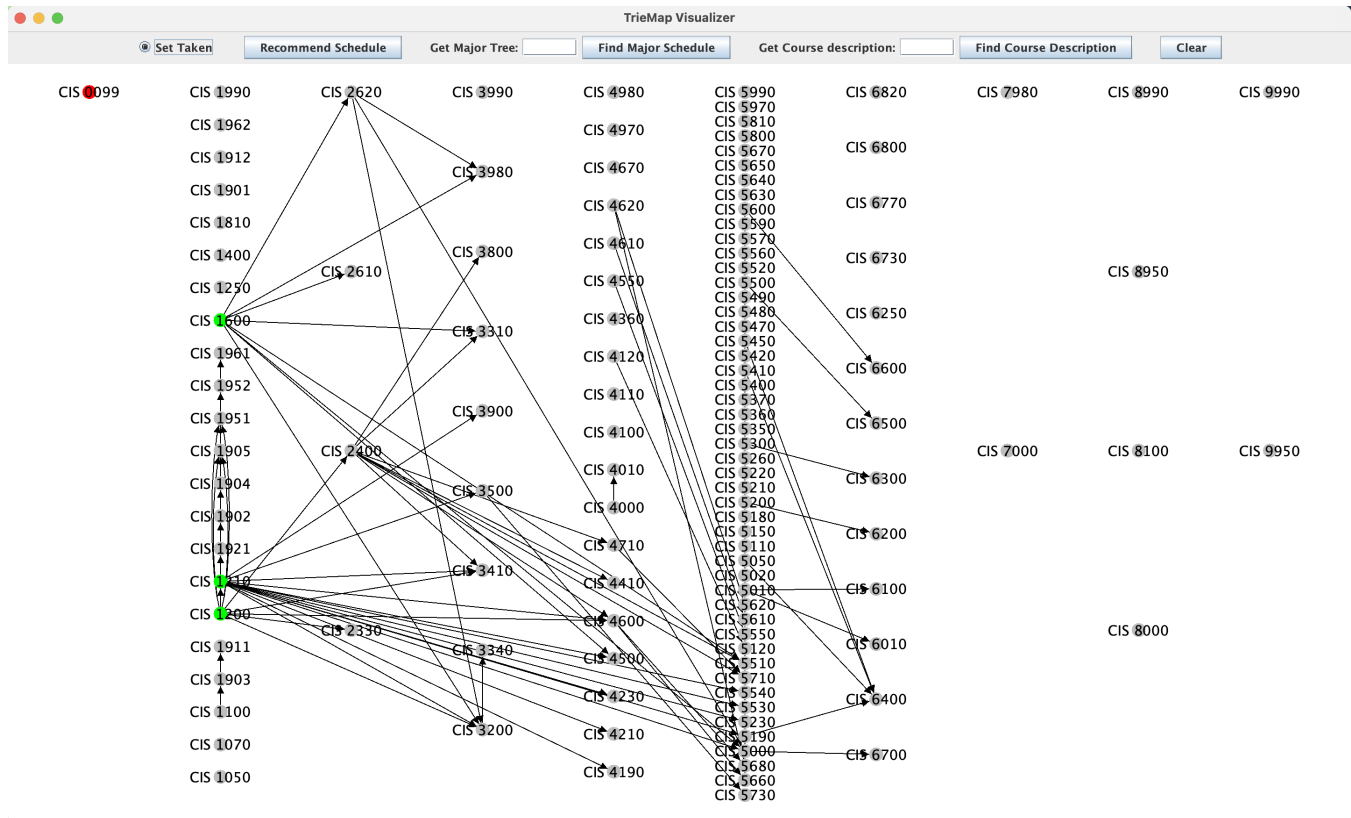
The user is now presented with a text box populated with the class's description as it appears online.

2.4 Set Taken

The whole purpose of the "Set Taken" radio button is to allow the user to input which classes they have already taken. This information is used when they are recommended useful courses to take (as we do not want to recommend them courses they have already taken). The button works as follows:

- When the button is toggled, the user can click on nodes, which become green, indicating that the user has taken these classes. If the user clicks them again, they toggle back to gray.
- When the button is not toggled, the nodes still store if they have been marked as taken or not, and the original behavior as described in section 2.2 is exemplified.

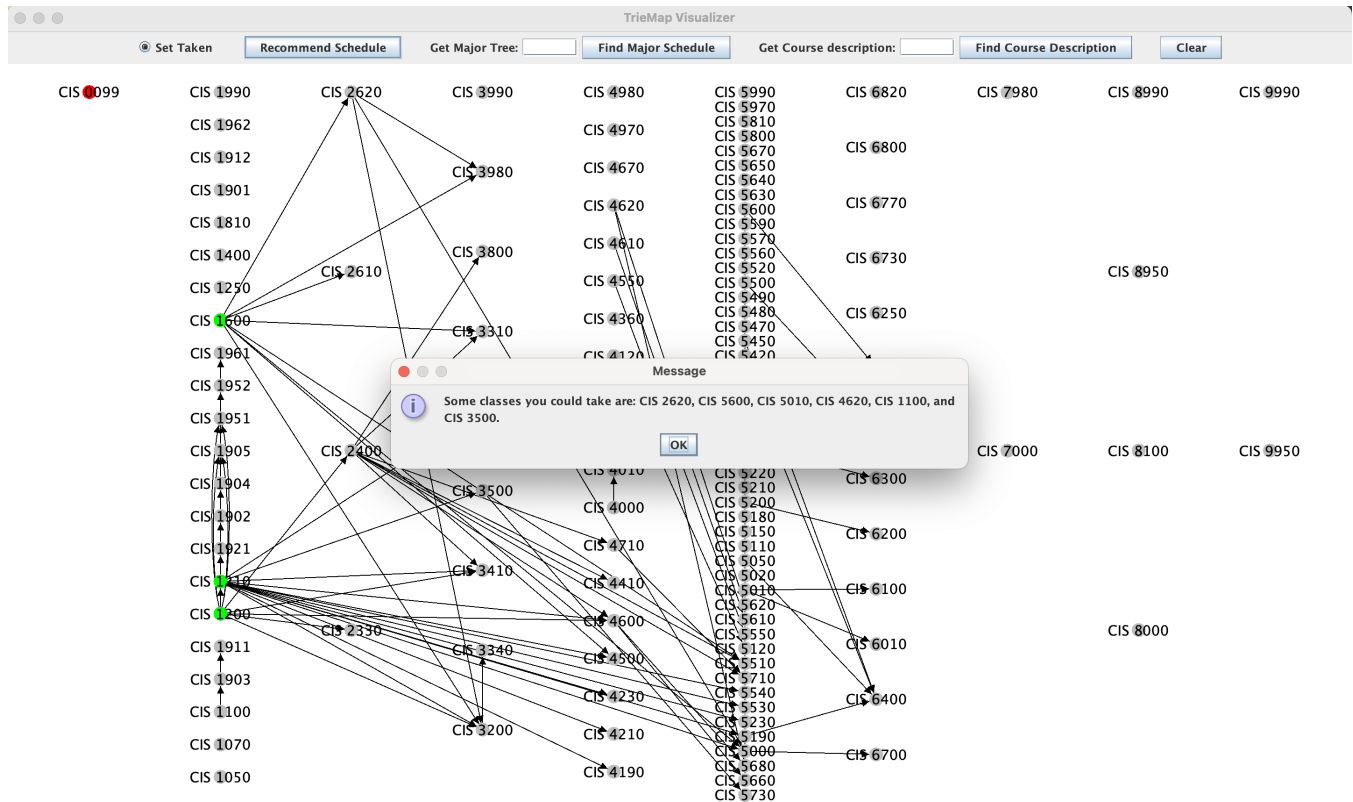
Given the CIS example above, if I toggle the "Set Taken" button and mark that I have taken CIS 1200, CIS 1600, and CIS 1210, the graph looks as such:



Clearly the nodes are now marked as green.

2.5 Recommend Schedule

This button uses the information provided by the user on the current graph to identify the "most useful," takeable classes that the user should investigate. It outputs at most six classes to the user. For example, let's say that the user maintains that the user has taken CIS 1200, CIS 1600, and CIS 1210. Upon pressing the button, here is the output that appears:



2.6 Clear

The clear button is pretty self-explanatory. It can be used to clear the graph of all of its data. Keep in mind that once a user presses clear, **there is no way for them to return to their previous graph, as none of the data is stored.** Note that the user must clear the graph before they are able to render a new major's graph (i.e. if CIS is rendered, clear before ECON can be rendered, does not automatically override).