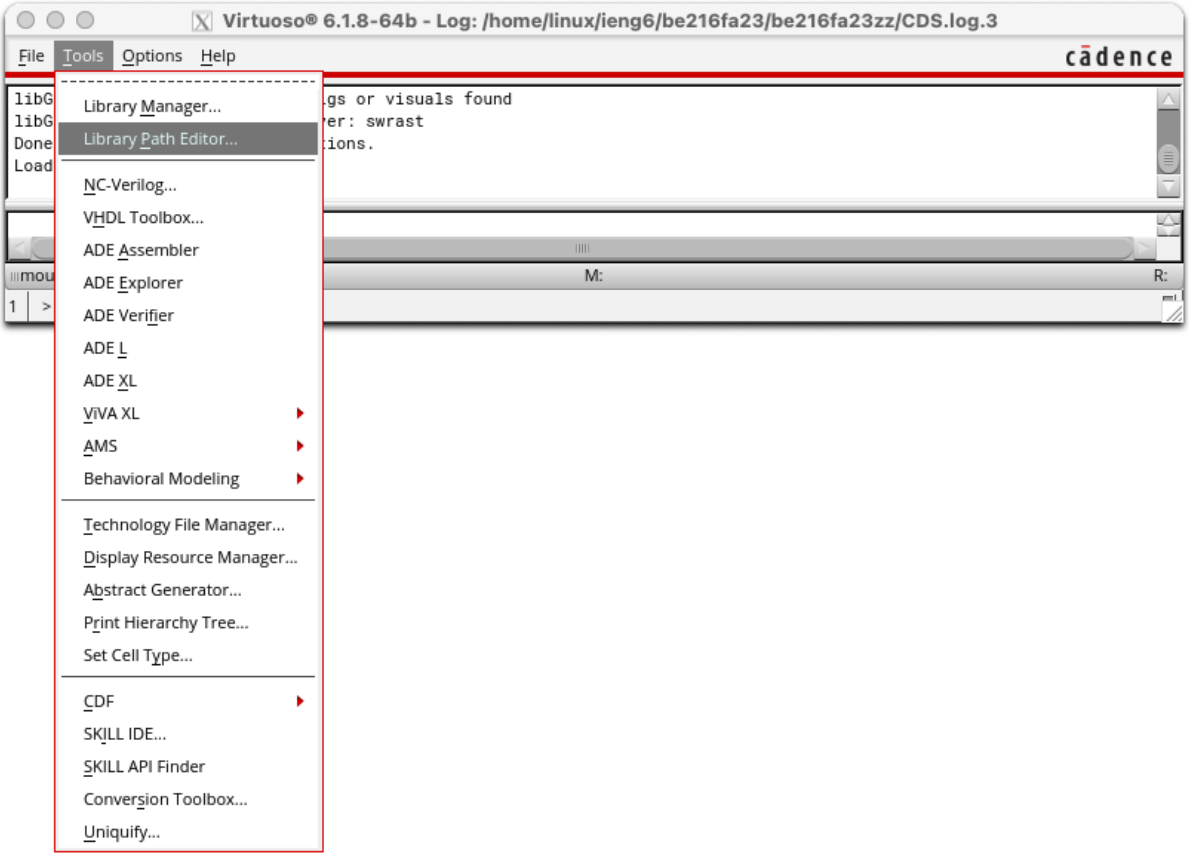
Shared Project Libraries: Tutorial

Shared project libraries have been added to the $PUBLIC directory on ieng6. The names of the project libraries match project names from the sign-up sheet.

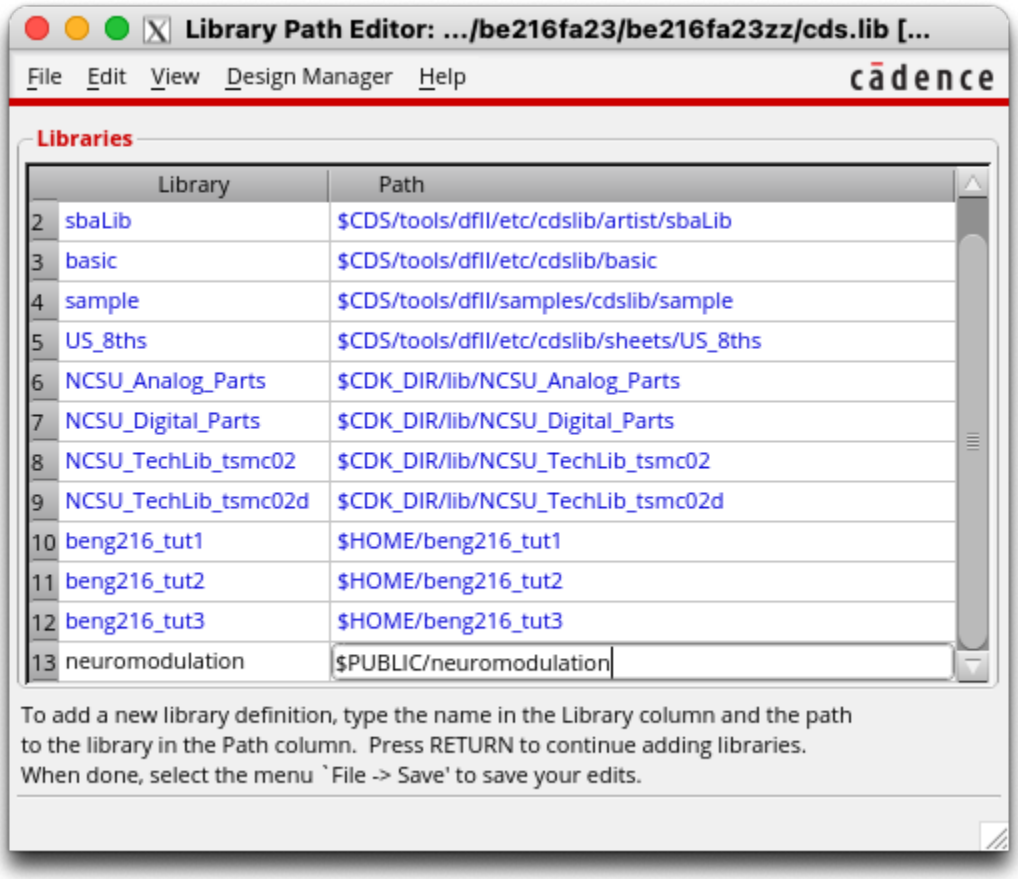
These project libraries have been attached to the NCSU CDK 180nm process that we have been using for the homework. If you would like your project to use a separate PDK (for instance, to do layout or begin working towards a tapeout), please let us know so we can update the PDK for your project accordingly.

To work with the shared library for your project, you can launch virtuoso from your home directory, and then add your project's library to your library path:

1. Open the Library Path Editor from CIW > Tools

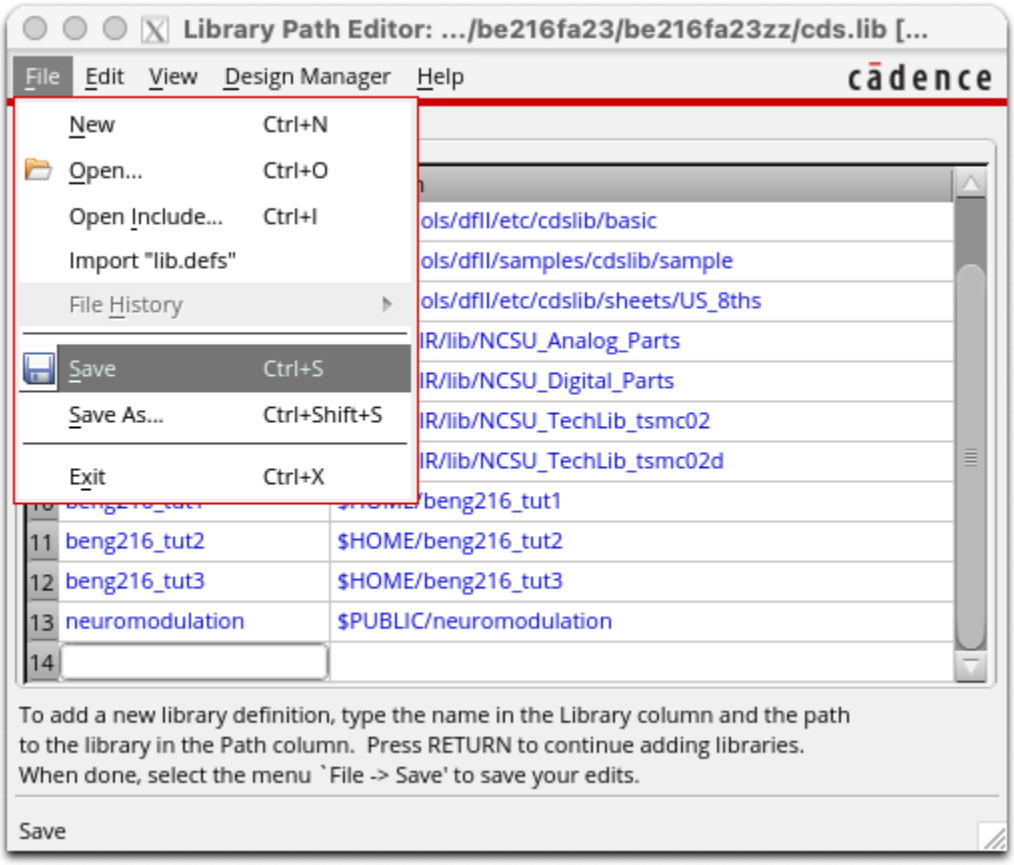


2. Add the project library corresponding to your project. Note, the library name and path should match your project! This example is trying to add the "neuromodulation" library from $PUBLIC/neuromodulation to the library path:



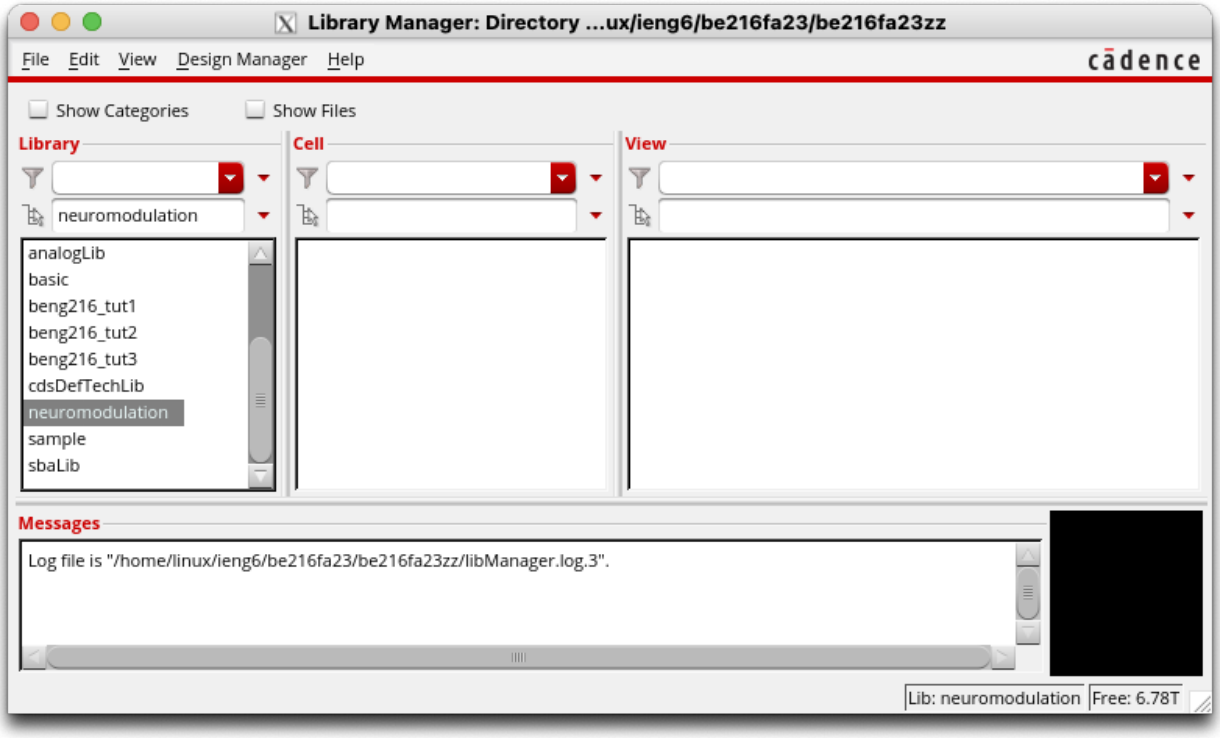
If you do this correctly, the library name and path should turn blue after you hit enter. If there is an error in the path, you might get a red color. You can correct the path and hit enter again.

3. Save your changes to the library path editor:

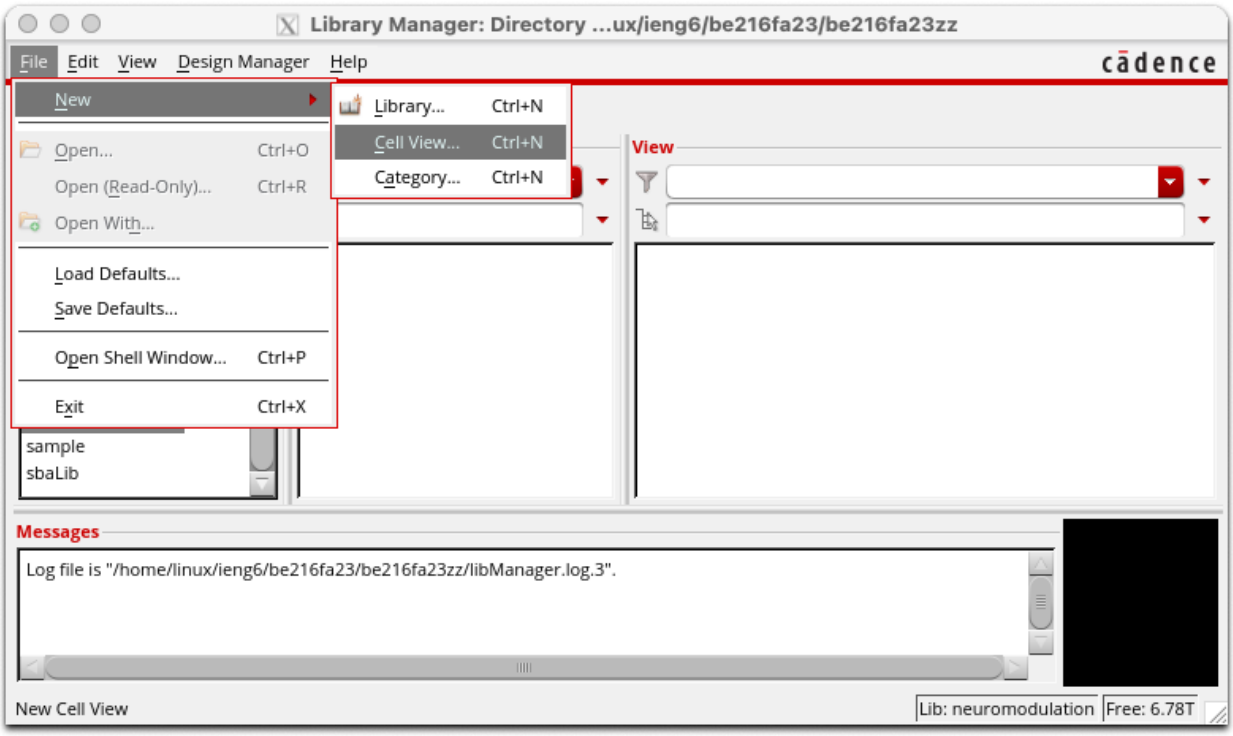


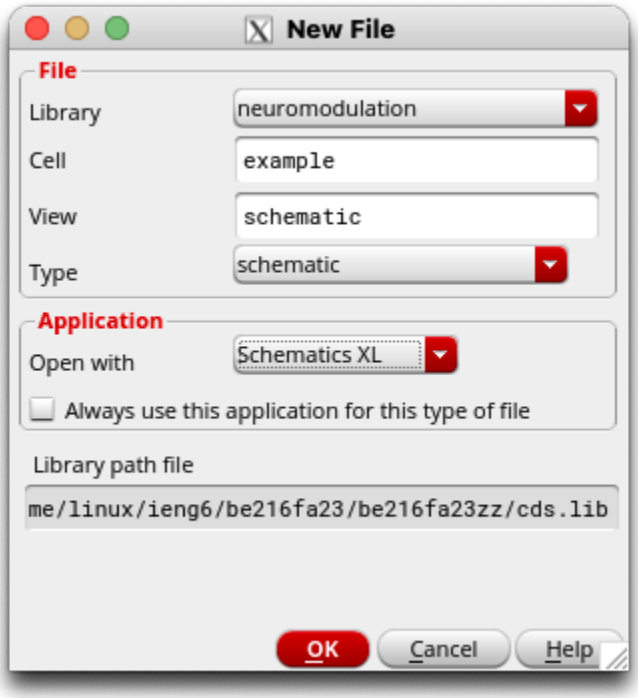
Note: steps 1-3 only need to be done once to update your cds.lib to include your project library's path. Any subsequent launches of virtuoso will be able to find your library just fine!

4. Open the Library Manager (CIW > Tools > Library Manager) and you should be able to see your project library (which might be empty at this point):



5. You can then make a new cell view to start working on your project. Here we make an "example" cell for this tutorial:



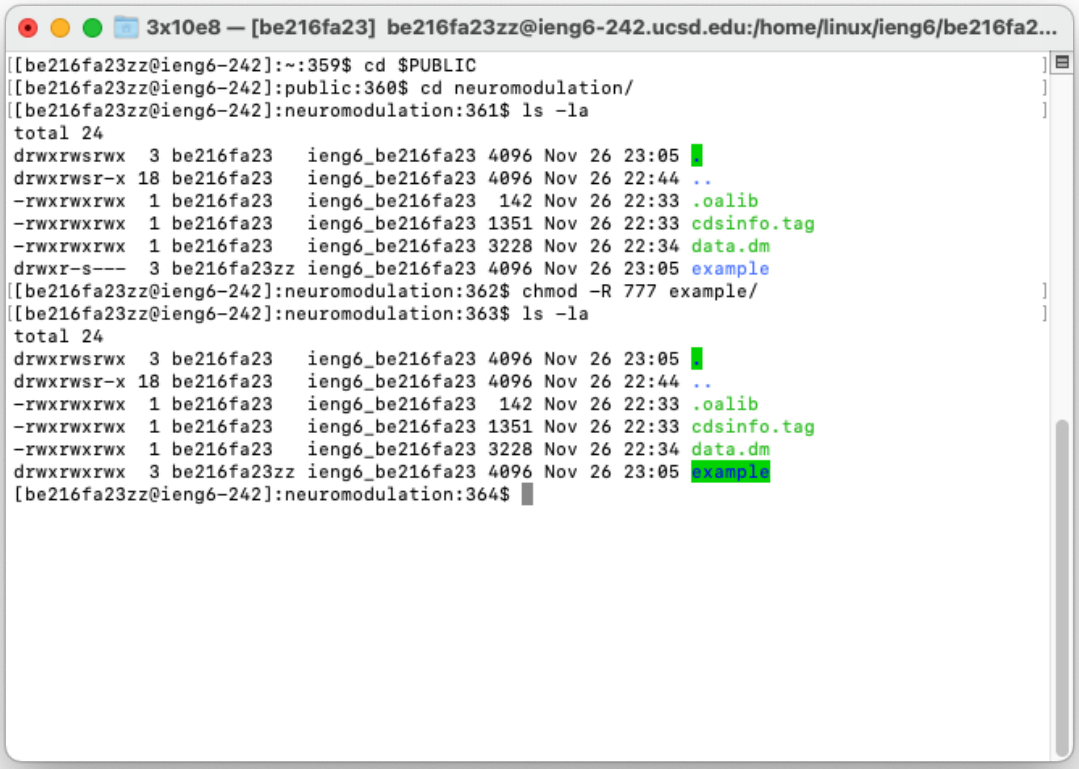


From the schematic window that opens, we just save this cell as an empty schematic for now.

6. **(This step is key for collaboration!)** Any new cells you create in the shared project space, just like this example cell, will only be writable by you unless you update your cell's permissions! You can do this from the terminal by using chmod:

chmod -R 777 path_to_your_cell

For example, see how the permissions change before and after we chmod the example cell's directory:

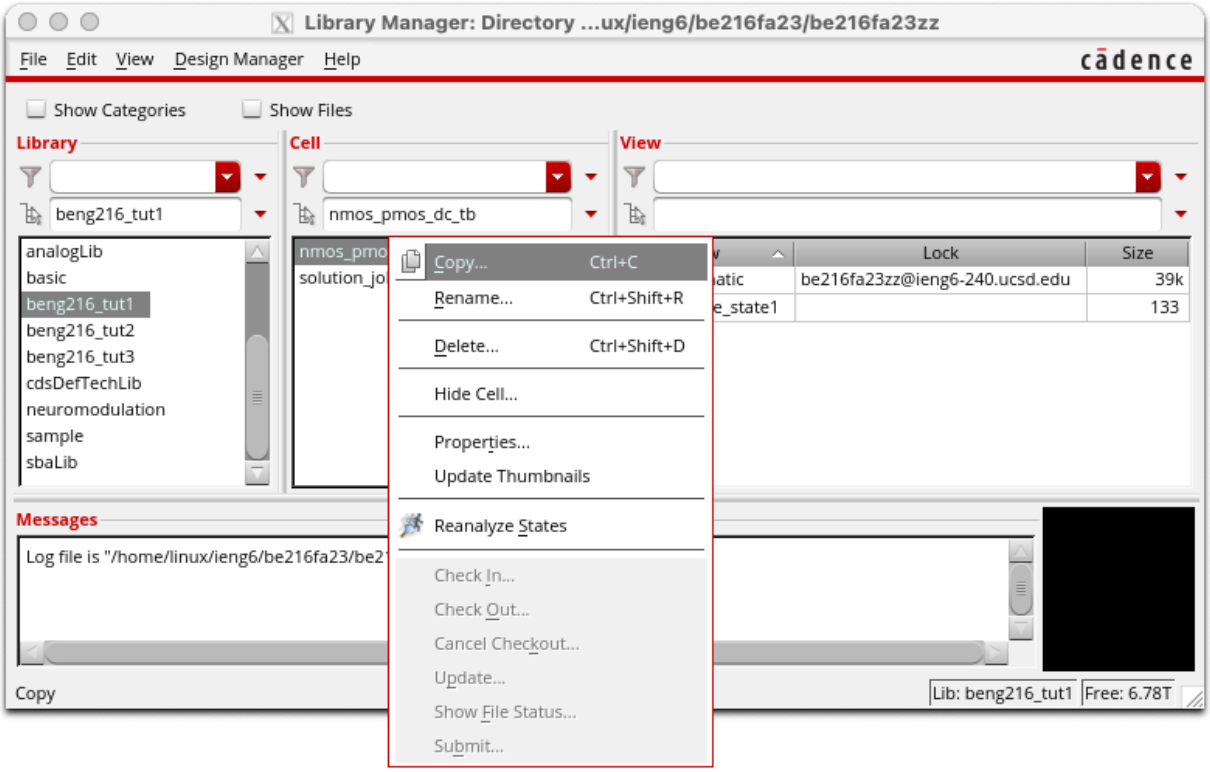


Now your cell should be editable by your team, and you're all set to collaborate on your project!

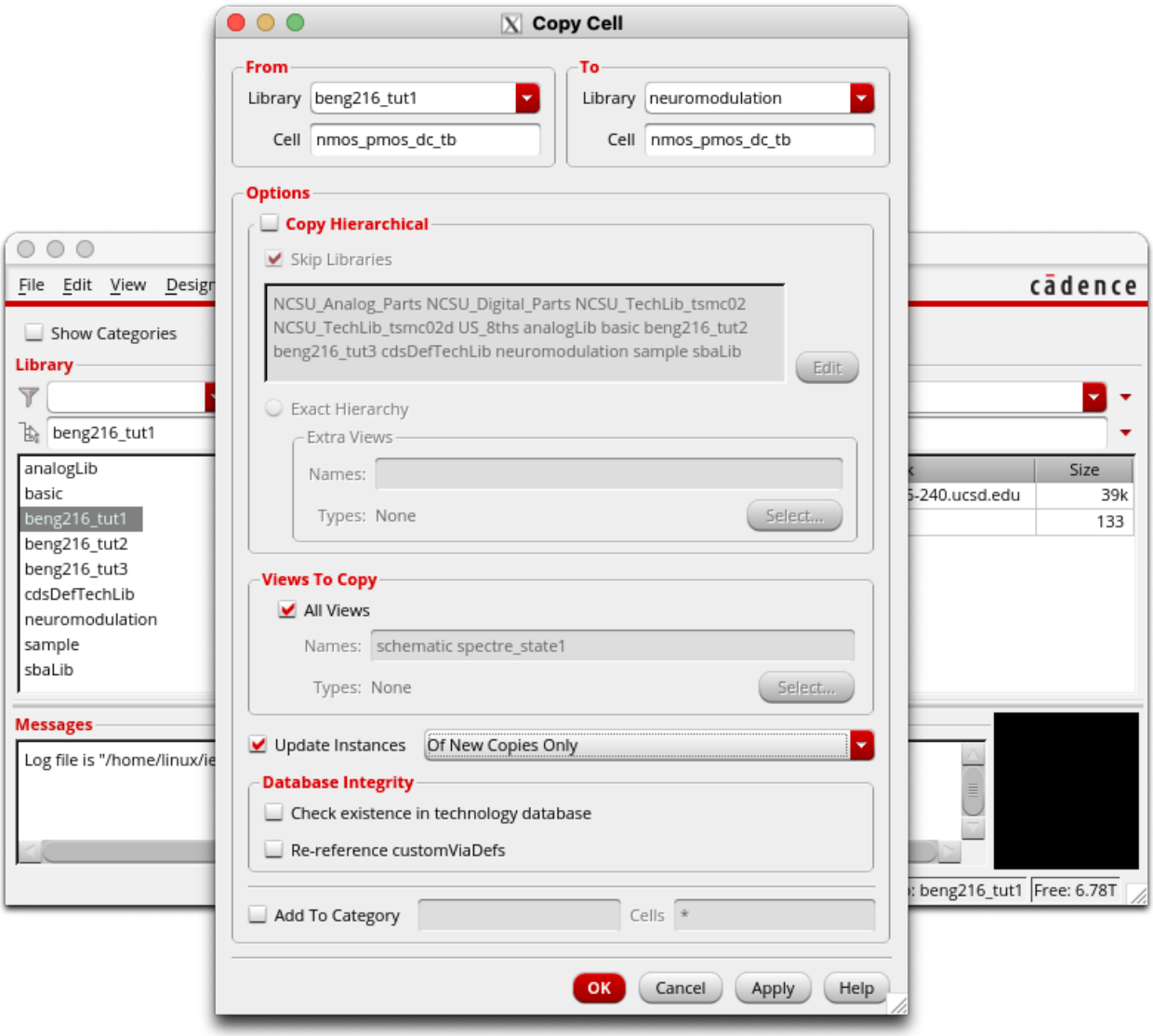
7. **(optional)** If you have already done some work locally in your homework libraries that you would like to reuse for your project, you could copy existing cells over to your project library.

For example, here we copy a cell from our user's local beng216_tut1 over to the shared project library:

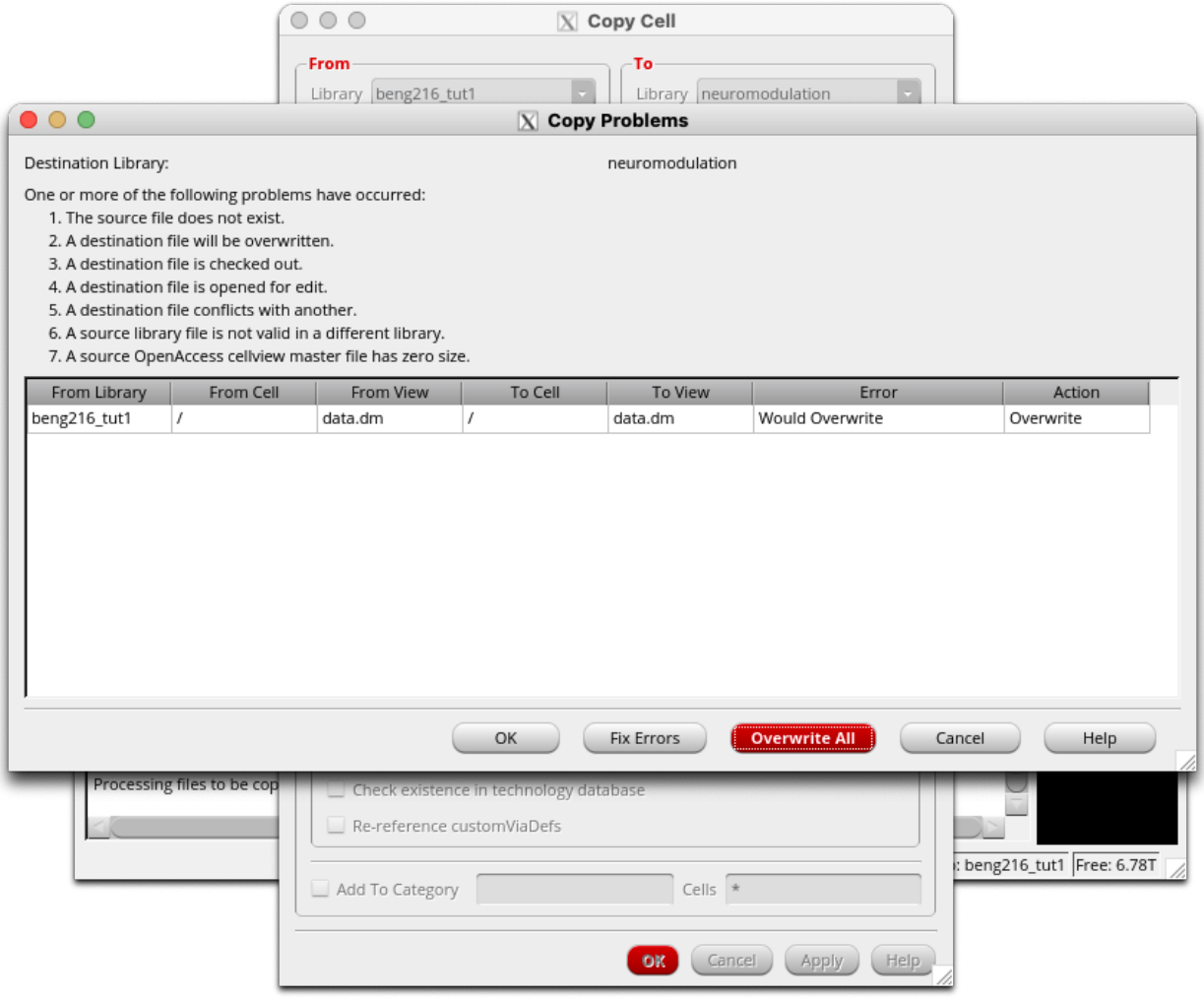
7.1 Using the Library Manager, go to the cell you want to copy. Right click the cell's name > Copy:



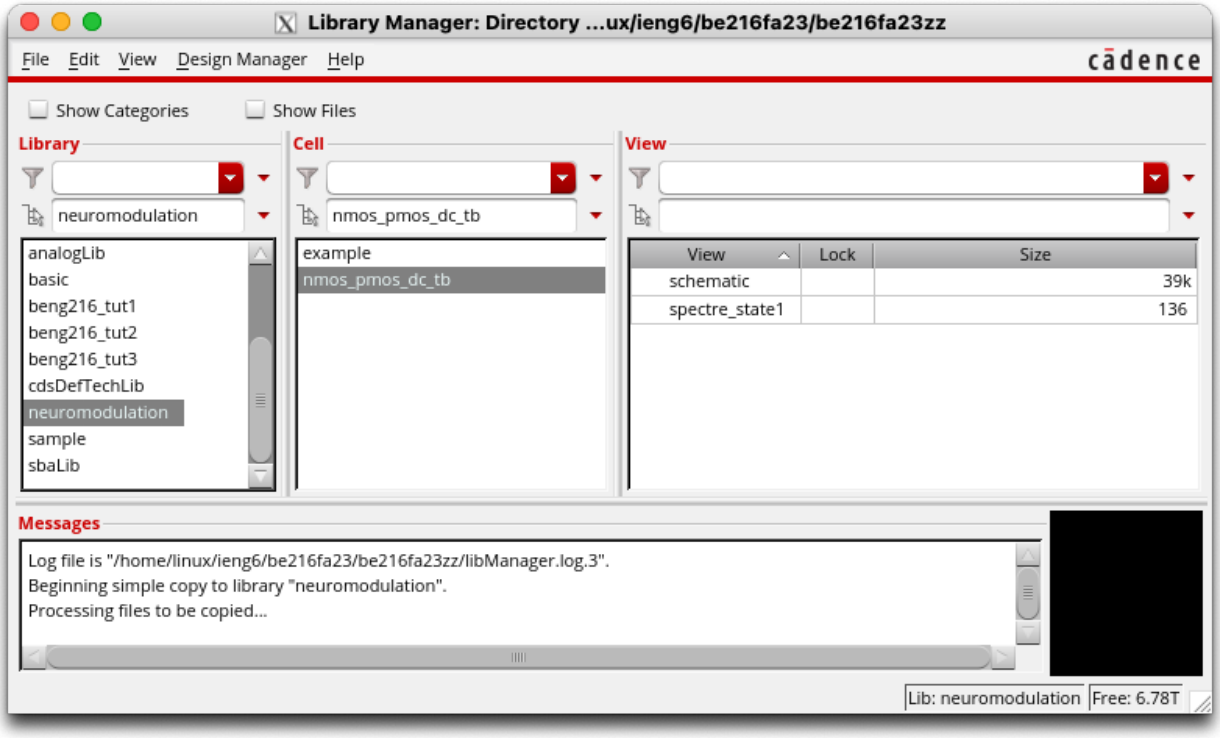
7.2 In the **Copy Cell** form that opens, update the **To** library to be your project library. You can select **All Views** to copy schematics, spectre states, etc. You can also check **Update Instances** to make sure the new copies point to your new project library (instead of having stale pointers to your original **From** library):



7.3 In the pop-up that follows you can select **Overwrite All**, then **OK**.



7.4 Confirm that the cell got copied successfully by checking your project library from the Library Manager:



7.5 Don't forget to chmod your newly copied cell (see step 6) so your team can edit this cell!

All the best!