RIT | Golisano College of Computing and Information Sciences
School of Information

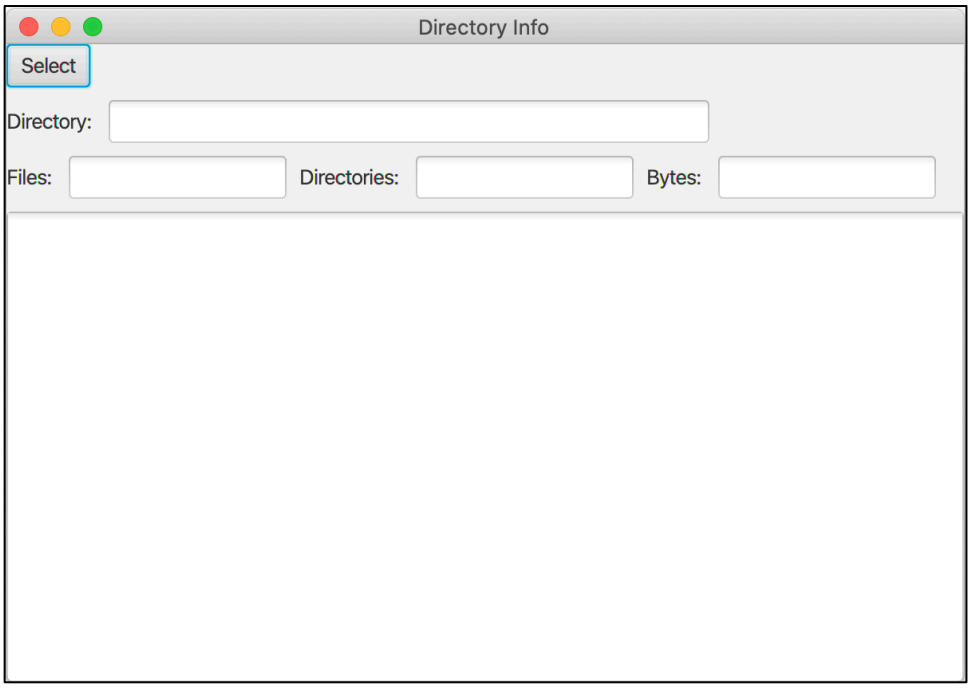
ISTE-121
Lab 09: Recursion & Directory Tree Walking

Overview

This lab is designed to help you think about creating recursive solutions to problems that would be more difficult with traditional iteration. In this case, you will walk a directory tree, gathering information about the files and directories you encounter along the way.

GUI

The GUI for this lab should look something like the following:



You may design your own GUI, if you like, but you must incorporate all the elements of the one above.

How it Works

When the user clicks the Select button, a DirectoryChooser like the one below appears:

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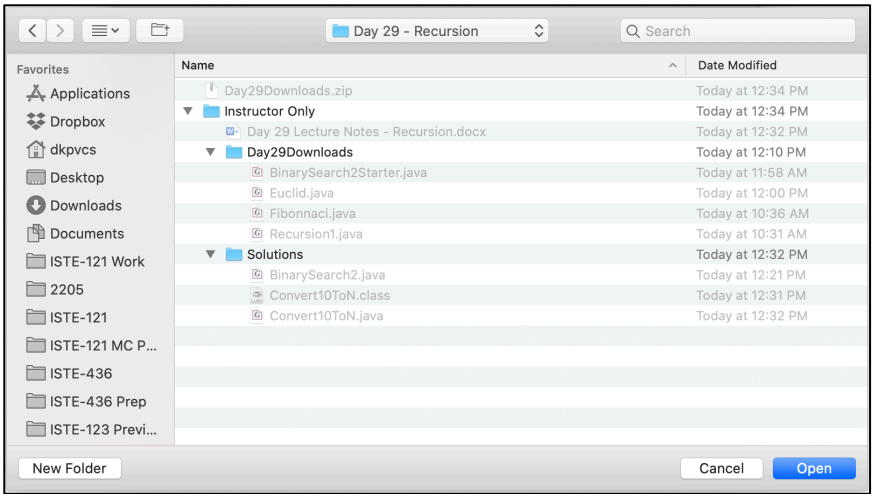
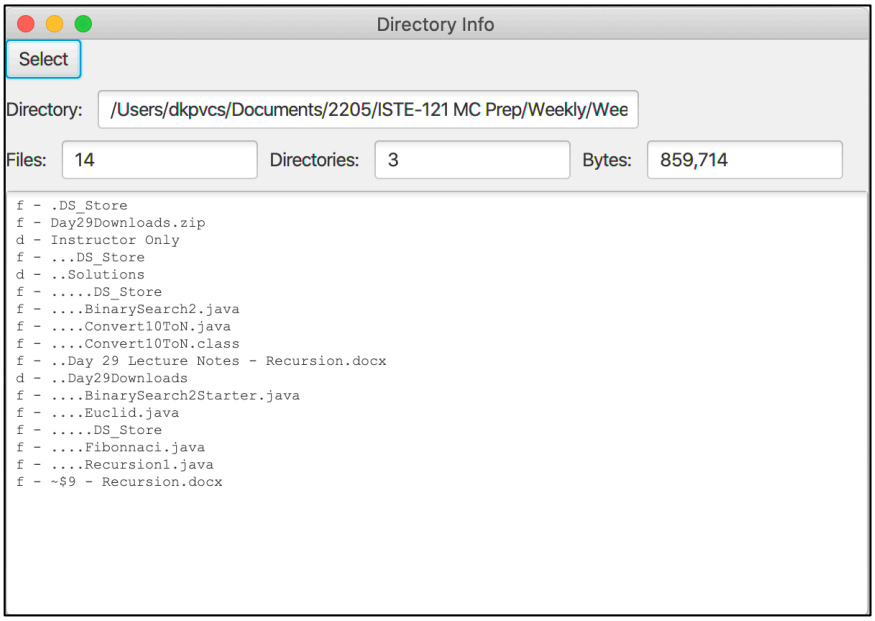


A DirectoryChooser works much like a FileChooser, but only shows directories (not files).

Then, when the chooser was shown, it was shown with the left button labeled “Select Folder”.

The return value is a File referring to the chosen directory. If this is null, then the chooser was canceled.

If the return value is **not** null, then a recursive method is called. It is passed the name of the directory chosen (as a String) and a String to print between the “d-“ for a directory and the “f-“ for a file. This is initially the empty String. See the output below for an example.



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The total number of files found, the number of directories, and the number of bytes are shown in the TextFields in the top part of the GUI.

The bottom part of the GUI is a TextArea, with one line per file/directory. To make things line up nicely, the TextArea is configured with a MONOSPACED Font.

The lines in the TextArea begin with "d- " for directories, or "f- " for files. After this start, the name of the directory/file is printed. Between the "d- " or "f- " and the name is a number of periods. No periods appear at the top level. As we work our way down the tree, 2 periods are added per level.

- You will want to use the **listFiles** method of the File class to obtain the list of files/directories.
- You can use the **isDirectory** and **isFile** methods of the File class to help you decide which you have.
- For the recursive call, you will want to pass in the absolute pathname of the directory. See **getAbsolutePath** in the File class.
- You will also want to pass in the correct number of 'dots' for the indent. You can do this by actually passing in the String to use.

Submit your *.java file(s) to the Lab09 Assignment folder when your program is working correctly.

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