***
*** PROGRAMMING SKILLS HOMEWORK
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The purpose of this assignment is to give you a chance to show your coding talents by implementing the small program specified below. There is no time limit, although we would like to hear back from you before your interview. Please implement this program in Java or Python.

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*** WHAT WE ARE LOOKING FOR
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- Code that is clean and intelligently documented.
- Correct use of the implementation language and platform.
- Appropriate selection of data structures and algorithms.
- Intelligent error-handling.
- Good OO design.

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*** SPECIFICATION
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You will be implementing a program to search for occurrences of regular expressions within a directory tree (a little like 'grep' and a little like 'find'). The program should accept command-line arguments in the following form:

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[options] <path> <regex>
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The program should search files in specified path for the specified regex, with the following options available:

`-c` Look for the regex in file contents; otherwise look at the filename.

`-r` Walk the directory structure recursively, examining all sub-folders, sub-sub-folder, etc. Otherwise just look in the specified directory.

Output will simply be the relative path to all files in the directory (or tree) whose name (or content) matches the regex filter. The program should handle illegal input in a friendly way.

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*** NOTES
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This program is under-specified in a few areas that you will probably discover. Make intelligent decisions as you would in the real world, and explain them in your solution.

We are not expecting you to write a regex engine; just use the facility built into your implementation language.

Avoid overly clever solutions such as shelling out and performing the work through Unix commands.