

### **Exercise - Template Method (75 minutes)**

In the provided source files, the LineCount class implements a program that counts the number of lines contained in the files in a directory (recursively, if desired). Similarly, the FileSearch class implements a program that searches the files in a directory for a pattern (i.e., regular expression), and prints out all of the lines that contain the specified pattern. The README.txt file contains more detailed documentation for both of these programs.

There is a lot of code duplication between the LineCount and FileSearch classes, because both programs do almost the same thing. Of course, these classes also contain many differences, as well. Your task is to eliminate the code duplication by refactoring the LineCount and FileSearch classes to implement the Template Method program. Your solution should contain three classes: a new base class that contains the template method, along with modified LineCount and FileSearch classes that inherit from the new base class and override its abstract methods.

Submit your solution on Canvas.

