

Homework #3 Lexi, AbstractFactory, FactoryMethod, and Singleton

Issued: Monday, March 14

Due: Wednesday, March 30

Purpose

This assignment allows you to learn about three other design patterns: AbstractFactory(87), FactoryMethod(107), and Singleton(127).

Assignment

Design (in UML) and implement (in Java) the Look and Feel part of the Lexi editor, as described in Section 2.5 of our textbook. Add labels and buttons for two Look and Feels: Red and Green.

Test your solution with a simple graphical demonstration. For example, these are the results of my tests:



The button contains “PQ” and the label contains “pq”.

Notes and Suggestions

- Use the design suggestions from our textbook.
- Use the `Window` interface and `SwingWindow` implementation in:

`pub/hw3`

You should use packages, to accomplish the Singleton(127) visibility requirements, in Java.

- As usual, casting is prohibited!
- Indicate, with a comment at the top of each source file, the relevant patterns and participants.
- Employ Singleton(127) and FactoryMethod(107), in that order, after your program runs correctly. FactoryMethod(107) may seem unnecessary.
- Use the value of an environment variable to select the Look and Feel. For example:

```
String s=System.getenv("LexiWidget");
if (s!=null && s.equals("Green"))
    ...
else
    ...
```