

## Problem 5

### 1 The basic problem

Suppose there are various different algorithms for carrying out “the same” task which is part of a responsibilities of a class called say Context; perhaps they differ in accuracy, speed, space use or whatever. Clients which create an object of class Context should be able to choose which algorithm they want to used in this Context object, but from then on they interact only with the Context.

For example, a text window might have the responsibility to display text, including calculating linebreaks. It might use a simple algorithm deciding on one linebreak at a time, or one of several better but more expensive algorithms which optimise linebreaks over a paragraph.

### 2 An initial solution...

### 3 Criteria for a good solution

- It should be easy to add an extra algorithm or remove one.
- It should be possible if desired to change the algorithm used at run time (for example, in order to use an algorithm suited to the particular instance of the task).
- It should be easy to understand the code.

### 4 A better solution...