

PF3: Assignment 2

Due on October 28, 2018 at 8:30am

Prof. Walter Binder

A. Romanelli

Problem 1

The entirety of this problem was done by writing the requested implementations. Please refer to the submitted source code files. The code for this particular exercise can be found in the following zip:

`assignment2_Romanelli_Alessandro.zip`

Package `exercise1` holds all the relevant source files.

Problem 2

1. The current implementation violates the SRP because the `AdPublisher` class lacks of functional cohesion. This means that it's quite difficult to identify a single well-defined task. Moreover, this class also violates the OCP principle, as it's not easily extendable and extending the functionality would mean to modify the already existing code.
2. Here's the UML class diagram of revised design, which should be compliant to the OCP exploiting the *Strategy Pattern*:



Figure 1: UML Class Diagram

This class diagram is not strictly compliant to the SRP: each Strategy handles several aspects of how an ad is issued. However, this was done to avoid the creation of too many classes, which would have caused the loss of the OCP.

3.— 4. The points of this problem requiring the actual implementations can be found in the zip:

`assignment2.Romanelli.Alessandro.zip`

Refer to the source files within package `exercise2`

5. In order to illustrate why the Strategy pattern is so effective we can take a look at how I implemented the `InstagramStrategy`. The implementation of said Strategy is based on implementing the interface `Strategy`, which provides the core functionality. Being independent from the other Strategies, I was able to implement Instagram-specific methods with ease and that didn't affect the functionality of the other strategies. To then make use of the new strategy within my test program, because of the intrinsic interchangeability, I only needed to create a `new InstagramStrategy()` and utilise it as any other implementation of a `Strategy` interface.

Bonus Problem

Refer to the attached source code files for this exercise which can be found in the following zip:

`assignment2.Romanelli.Alessandro.zip`

The relevant files for this problem can be found in the package `exercise3`.