

Assignment

Design Patterns

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# Problem Statement

Implement a notification system. Notification system should support Email & SMS. The implementation should be done keeping in mind that new channels can be easily integrated with the code. Principles of open to extension but closed for modifications should be applied.

System should take following arguments:

1. Channel of notification (Email/SMS)
2. Subject
3. Message Body

No UI is needed, arguments can be taken from command line.

The notifications should be sent only to users who have subscribed for the notifications. No database is needed, the database layer can be mocked and hardcoded users list can be returned from layer.

Following design patterns must be used in the solution:

1. Factory
2. Singleton
3. Adapter
4. Façade
5. Strategy
6. Observer / PubSub

You can use any other design pattern in addition to above.

Please Note:

1. Spring must not be used. Code needs to be in plain Java.
2. Actual implementation of sending emails or messages is not needed but use of design patterns should be apt.
3. You are free to make relevant assumptions on requirements for the implementation of the solution.

# Outcomes

By the end of this assignment, you:

1. Should understand the applications of each design pattern.
2. Should be able to identify the use case for the relevant design pattern.
3. Should be able to implement the design pattern with ease.

# Evaluation Criteria

* Use of design patterns in the solution.
* Viva – should be able to answer questions as asked by the evaluator.