

OOSD project - Virtual Library
Group 10- Deck of Aces
Design Patterns Documentation

1. Singleton

Login class is declared to be singleton. Since only one instance is sufficient and multiple instances can be problematic when working with the database, singleton design pattern is suitable for login class.

2. State

State design pattern is used when dealing with the subscription state (active, expired) of the user. Singleton design pattern is also used in individual state classes to guarantee that only a single state object for each state class is created.

3. Proxy

When list of books is being loaded only few attributes from each book (name, author, category) will be loaded. Only when a specific book is opened to read, the respective pdf document will be loaded. Proxy design pattern suits well for this situation where book object without pdf file acts as the proxy class.

4. Decorator

When the book lists are being loaded, same book needs to have additional behaviors/functionalities according to the list.

e.g. : books in favorites list should have a button to remove it from favorites

decorator design pattern is the best fit for such cases.

5. Observer-observable

There are few situations where users need to be notified with some state changes

e.g. : subscription state change from active to expired

for such situations, observer- observable design pattern is ideal. (observer - user/ observable - subscription)