

System Architecture and Design Pattern Lab Final Exam

Full Mark: 30 (Will be converted to 100)

Time: 1.0 hour

N.B: Partial Mark is available for all the questions

1. Suppose you are working on a text editor application that provides basic text rendering functionality. The requirements specify that users should be able to dynamically add or remove features like text formatting (bold, italic, underline), syntax highlighting, and spell-checking without modifying the core text rendering component. Design the above-mentioned system with an appropriate design pattern. (15)
2. Suppose you are developing a stock market application that provides real-time updates on stock prices. The application allows users to subscribe to updates for specific stocks they are interested in. Whenever there is a change in the stock price, all subscribed users should receive a notification with the updated price. The application needs to support adding new types of notifications in the future without modifying the existing notification system.

Which design pattern would you use to implement a system where users can subscribe to real-time updates on stock prices and all subscribed users are notified whenever there is a change in the stock price? (15)