

Suppose you are tasked to create an E-Commerce application where a user submits orders via a web browser. The front-end program reads and writes forms and menus and maintains a shopping cart. The transaction server processes the order, which requires accessing the database that keeps track of orders, catalog information, and warehouse inventory. Based on the scenario answer the following questions using proper examples and diagrams:

- i. Design the system in such a way that the transaction server and database server are different. How can you put a middleware so that each transaction is processed by single request/reply message from/to the clients' end?
- ii. As there would be considerable geographic distance between client and server, what should be your approach to minimize the communication latency? Also discuss how you can design the communication such a way that does not freeze the UI of client's machine.
- iii. There are various goals that can be achieved to develop a distributed system. Describe the requirements for the system so that it can achieve Migration, Relocation and Replication Transparency where database files are resources.

5x3