Homework05

1. Based on the system sequence diagram and domain model from your Homework04, select one of the system operations in the system sequence diagram and write an operation contract for it.

Answer:

Contract CO2: selectItem
Operation:
selectItem(itemID: ItemID, quantity: integer)
Cross References:
Use Cases: Buy a Product
Preconditions:
- The customer must have a valid customerAccount.
- The catalog must have available items.
- The item to be selected must be a valid item from the catalog.
Postconditions:
- A LineItem instance li was created.
- li was associated with the current DeliveryOrder.
- li.quantity became quantity.
- li was associated with a Catalog, based on itemID match.

2. How does a strict layered architecture differ from a relaxed layered architecture?
Answer:
In a strict layered architecture, a layer only calls upon the services of the layer directly below it. In a relaxed layered architecture, a higher layer may call upon several lower layers, allowing for more flexibility in interactions.

3. What's the connection between SSDs, system operations, and layers?

Answer:

The messages sent from the UI layer to the domain layer will be the system operations illustrated on the SSDs.

4. What is a key advantage of sequence diagrams over communication diagrams?
Answer:
A key advantage of sequence diagrams is that they clearly show the sequence or time ordering of messages, making it easier to see the call-flow sequence.

5. How do communication diagrams benefit Agile Modeling practices?
Answer:
Communication diagrams are more space-efficient and allow for flexibility in adding new objects in two dimensions, making them easier to modify during creative design work.