

Lab Experiment 7: Structural View Diagram - Object Diagram

Course: Software Engineering & Project Management

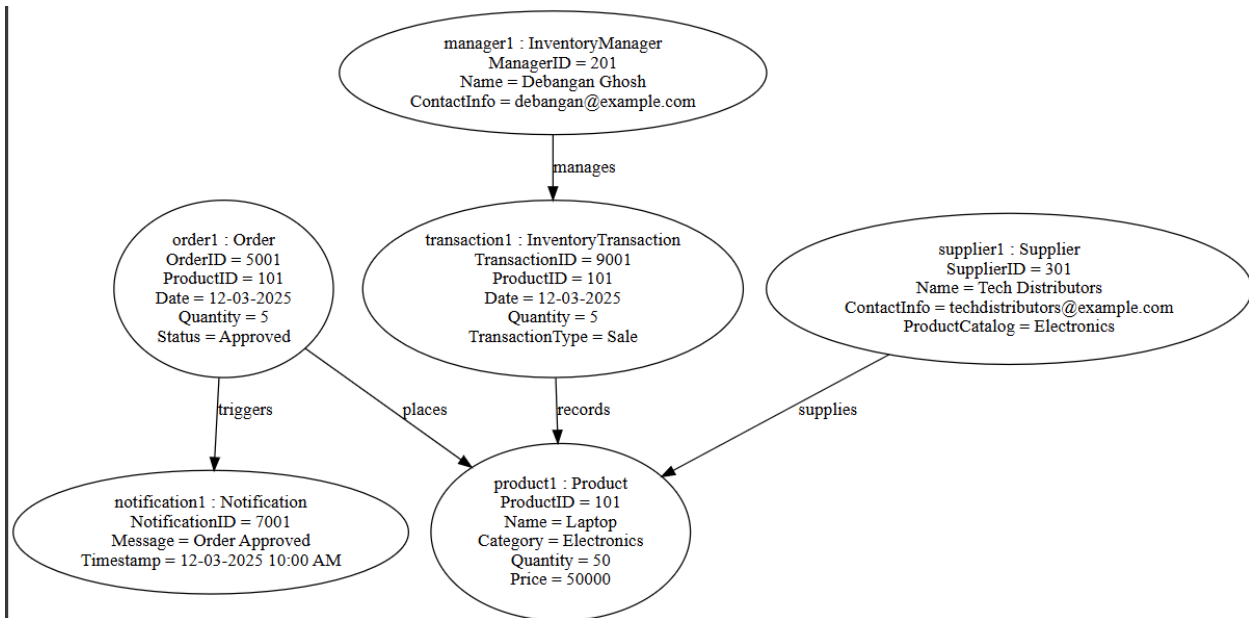
Objective

To develop the Object Diagram for the Inventory Management System based on the provided Class Diagram. The Object Diagram represents real-time instances of classes and their relationships at a specific moment.

Introduction

In software engineering, the Object Diagram is a crucial part of the structural view, representing a snapshot of instances in the system. It helps in visualizing runtime interactions among objects, showcasing attributes, and demonstrating relationships.

The **Inventory Management System** involves objects such as **Products, Orders, Transactions, Managers, Suppliers, and Notifications**. These objects interact based on predefined relationships from the Class Diagram.



Object Diagram of Inventory Management System

Objects and Their Instances

The following objects and their attributes are included in the Object Diagram:

1. Product Instance:

- product1: Product (ProductID = 101, Name = "Laptop", Category = "Electronics", Quantity = 50, Price = 50000)

2. Order Instance:

- order1: Order (OrderID = 5001, ProductID = 101, Date = "12-03-2025", Quantity = 5, Status = "Approved")

3. InventoryTransaction Instance:

- transaction1: InventoryTransaction (TransactionID = 9001, ProductID = 101, Date = "12-03-2025", Quantity = 5, TransactionType = "Sale")

4. InventoryManager Instance:

- manager1: InventoryManager (ManagerID = 201, Name = "Debangana Ghosh", ContactInfo = "debangana@example.com")

5. Supplier Instance:

- supplier1: Supplier (SupplierID = 301, Name = "Tech Distributors", ContactInfo = "techdistributors@example.com", ProductCatalog = "Electronics")

6. Notification Instance:

- notification1: Notification (NotificationID = 7001, Message = "Order Approved", Timestamp = "12-03-2025 10:00 AM")

Relationships Among Objects

- order1 **places** an order for product1.
- transaction1 **records** details of product1.
- manager1 **manages** transaction1.
- supplier1 **supplies** product1.
- order1 **triggers** notification1.

Results and Observations

- The Object Diagram successfully represents instances of classes and their relationships at runtime.

- This diagram helps in debugging and understanding system interactions.
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Conclusion

The Object Diagram for the **Inventory Management System** provides a runtime snapshot of objects and their relationships. It serves as an essential tool in software design and analysis, ensuring better system understanding and implementation.