1ICPC317

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SDLC Laboratory

Quality Laboratory Manual

Experiment No. 05

To perform user's view analysis: Use Case diagram.

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Experiment No. 05

Title of Experiment: To perform user's view analysis: Use Case diagram

Aim of Experiment: To understand the system in the view of end user, analyze and draw the Use Case diagram for better understanding of requirements.

System Requirements – Win 10 and above OS, 4GB RAM, 2.33 GHz Processor

Software/s Requirement – StarUML

Experiment Objectives:

- To understand the importance Use Cases in the software project.
- To understand the components of Use Case Diagram.
- To draw the Use Case diagram for the application to be implemented.

Experiment Outcomes:

- Use Case Diagram based on the requirement.
- Represent the system by possible Use Cases (Actions) and Users (Actors).
- Better and quick understanding of the system in user perspective.

Theory:

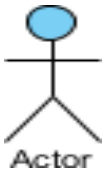
Use Case Diagram:

A Use Case Diagram in Unified Modeling Language (UML) is a visual representation that Illustrates the interactions between users (actors) and a system (actions).
It captures the functional requirements of a system, showing how different users engage with various use cases, or specific functionalities, within the system. Use case diagrams provide a high-level overview of a system's behavior, making them useful for stakeholders, developers, and analysts to understand how a system is intended to operate from the user's perspective.

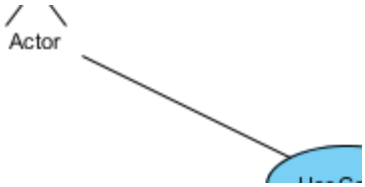
Components of Use Case Diagram:

1. **Use Case:** Actors represent the users or external systems interacting with the system being modeled. Actors are depicted as stick figures and may include individuals, roles, or other systems. Each actor triggers one or multiple use cases.

2. **Actor:** Actors represent the users or external systems interacting with the system being modeled. Actors are depicted as stick figures and may include individuals, roles, or other systems. Each actor triggers one or multiple use cases.

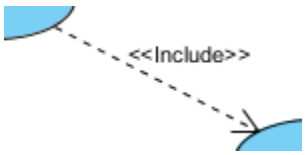


3. **Association:** Relationships between actors and use cases are depicted with solid lines. These relationships indicate which actors are involved in each use case. Actors may be associated with multiple use cases, and use cases may involve multiple actors.

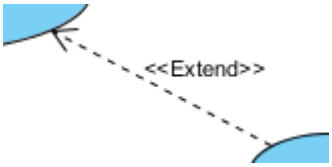


4. **Generalization**: A generalization relationship is used to represent inheritance relationship between model elements of same type. The more specific model element share the same specification with the more general the model element but carries more details in extra.

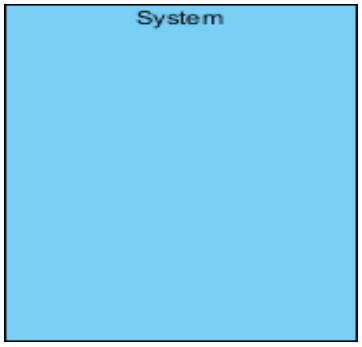
5. **Include:** An include relationship specifies how the behavior for the inclusion use case is inserted into the behavior defined for the base use case.



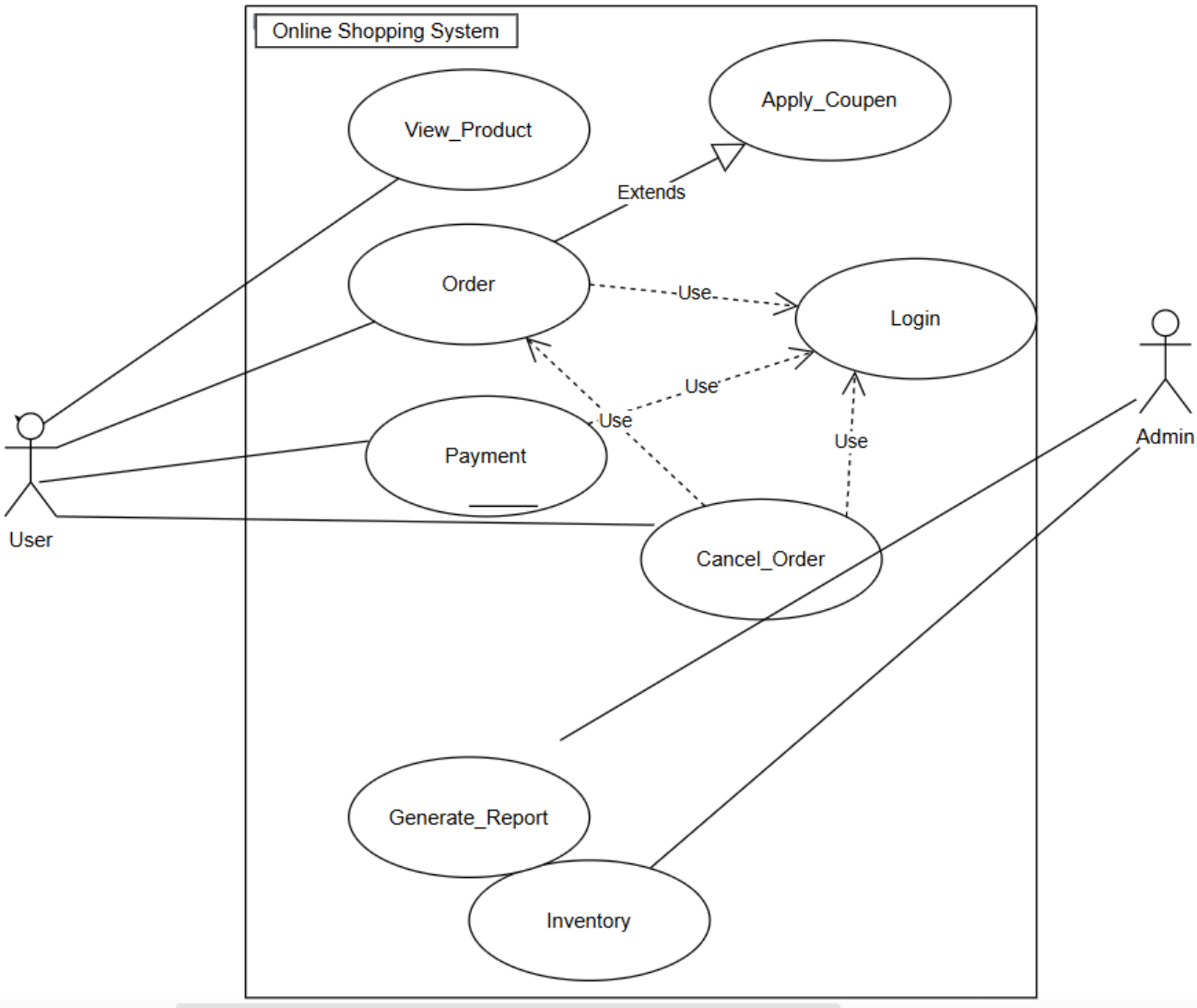
6. **Extend:** An extend relationship specifies how the behavior of the extension use case can be inserted into the behavior defined for the base use case.



7. **System Boundary:** The scope of a system can be represented by a system (shape), or sometimes known as a system boundary. The use cases of the system are placed inside the system shape, while the actor who interact with the system are put outside the system. The use cases in the system make up the total requirements of the system.



Use Case Diagram for Online Shopping System



Observations:

- Use Case diagram gives the user perspective of the system
- System can be represented in high level with the help of Use Case Diagram
- Helps to understand different functionalities present in the system
- Gives an idea that to which function or use case user interacts.

Conclusion:
The experiment successfully demonstrated, how to draw Use Case diagram to make the understanding of the system more detailed in the perspective of user.

Expected Oral Questions:

1. What is Use Case?
2. List out components used in Use Case diagram?
3. What is an Actor?
4. Why we use include relation?
5. Why we use extends relation?
6. What is Generalization?

FAQs in Interview:

1. What is the use of Use Case diagram?
2. How use case helps to understand the system?
3. What is the use of boundary for Use Case diagram?
4. Who is an Actor?
5. What is the other terminology used for Use Case?