

OBJECT ORIENTED ANALYSIS AND DESIGN

Name:

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Assignment-1

- 1) Explain the structure of Complex Systems and its attributes using object oriented concepts.

Ans:- The structure of Complex Systems refer to the arrangement and organization of the various components and their relationships within the system. Complex Systems are characterized by their intricate & interconnected nature, where the behaviour & properties of the system emerge from the interactions of its parts.

Complex Systems can be conceptualized and understood using object oriented concepts, which provide a framework for modelling & organizing the elements & relationships within these systems.

The attributes of Complex Systems using Object-oriented concepts are:-

- 1) Objects:- In complex systems, objects represent the individual components or entities that interact with each other. Each object has its own set of attributes & behaviors.
- 2) Attributes:- Attributes define the characteristics or properties of an object. They represent the state of an object at a particular point of time.
- 3) Methods:- Methods are the behaviors or actions that

an object can perform. They represent the operations or functions associated with an object.

4) Encapsulation:- Encapsulation is the principle of bundling an object's attributes and methods together within a single entity.

5) Inheritance:- Inheritance is a mechanism that ^{allows} helps objects to inherit attributes & behaviours from other objects. In complex systems, this concept can be applied to represent different levels of abstraction or specialization.

6) Composition:- Composition refers to the concept of building complex objects by combining or composing similar objects. This relationship represents a "has-a" or "part-of" association.

7) Relationships:- Complex systems involves various types of relationships between objects.

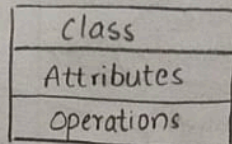
These relationships define how objects interact and communicate with each other.

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2) Discuss about Building Blocks of UML and Design use case diagram for Online reservation System.

Ans:- The building blocks of UML are the elements used to construct UML diagrams & represent different aspects of a system. The main Building Blocks in UML include:-

1) Class:- A class represents a template or blueprint for creating objects.



2) Object:- An object represents a specific instance of a class.

3) Association:- Association represents a relationship between two or more objects.

←--- Association ---→

4) Aggregation:- Aggregation is a type of association where one class is composed of or contains other classes.

5) Inheritance:- Inheritance allows a class to inherit attributes & behaviors from another class.

6) Generalization:- Generalization is the process of creating a more general class from two or more specialized class

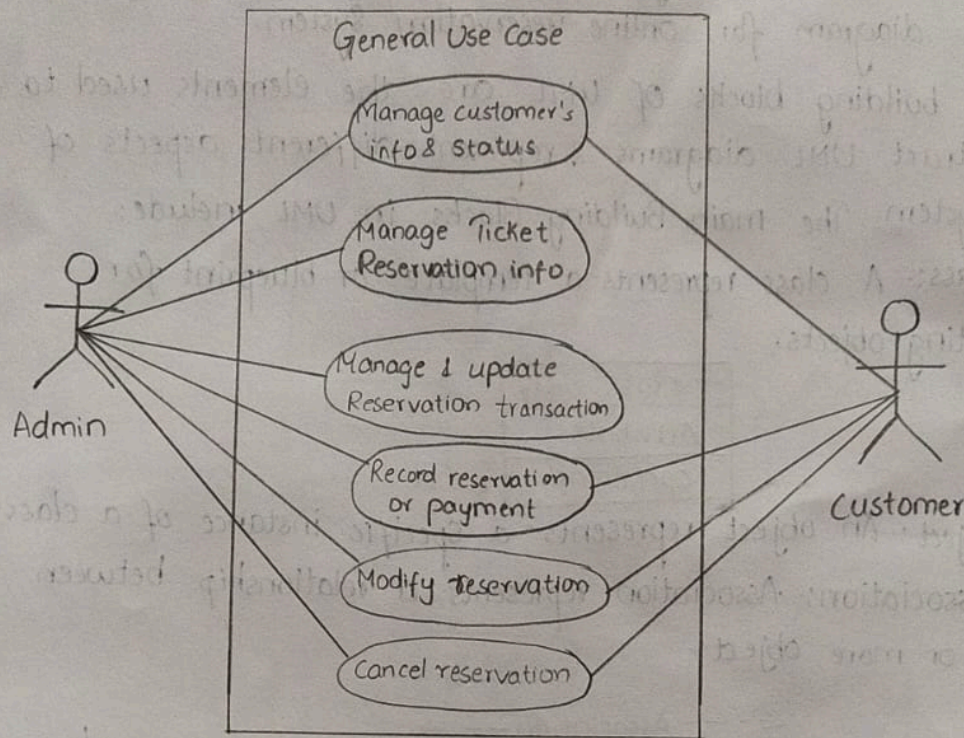
→
Generalization

7) Dependency:- Dependency is a relationship between two things in which change in one element also affects the other.

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Dependency

3

Use case diagram for Online reservation System:



In the above use case diagram,

Actors:-

- * Admin
- * Customer

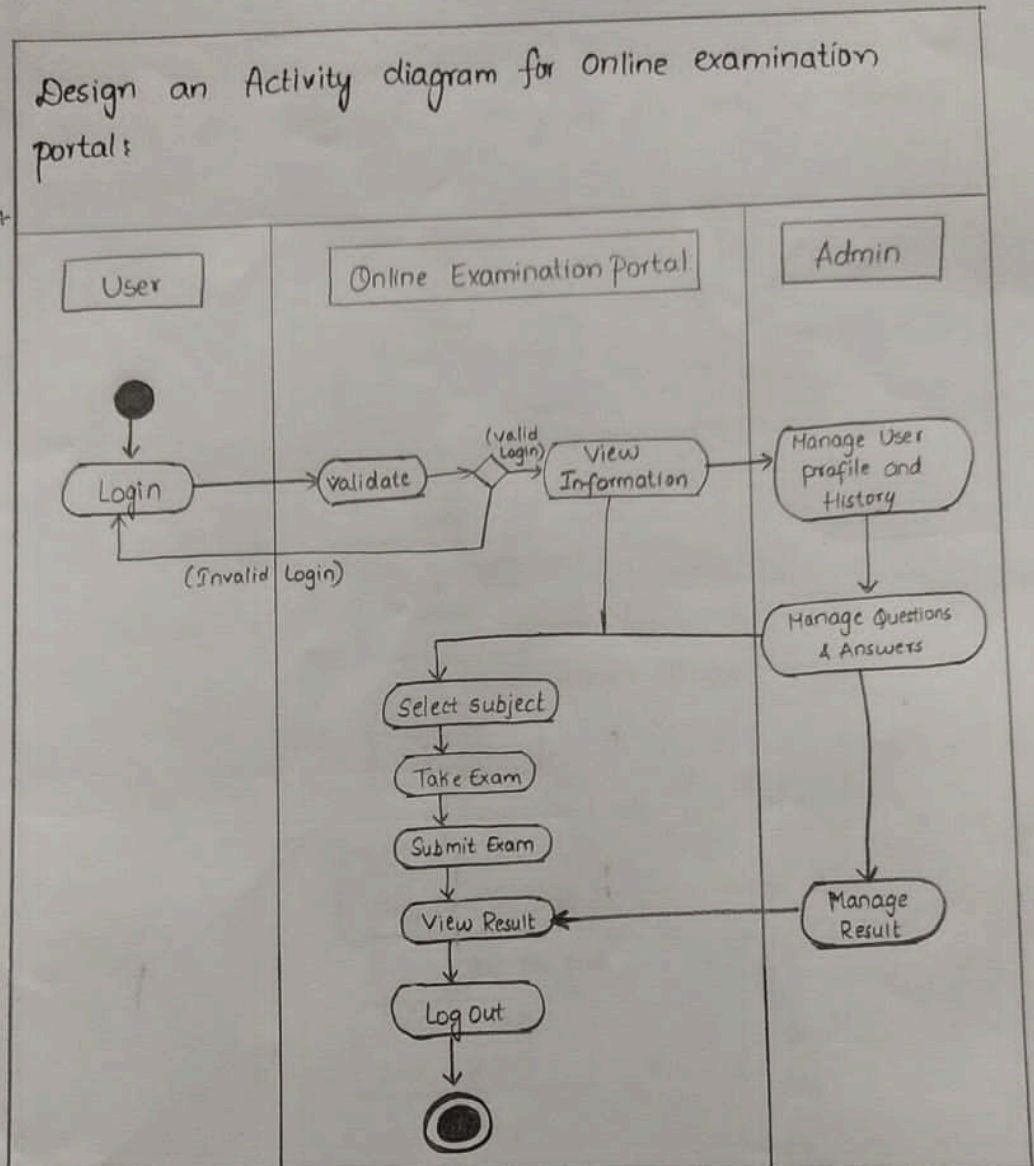
Use cases:-

- * Manage customer's info & status
- * Manage ticket reservation info
- * Manage & update reservation transaction
- * Record reservation or payment
- * Modify reservation
- * Cancel reservation.

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3) Design an Activity diagram for Online examination portal:

Ans-



Activity Diagram for
Online Examination Portal.

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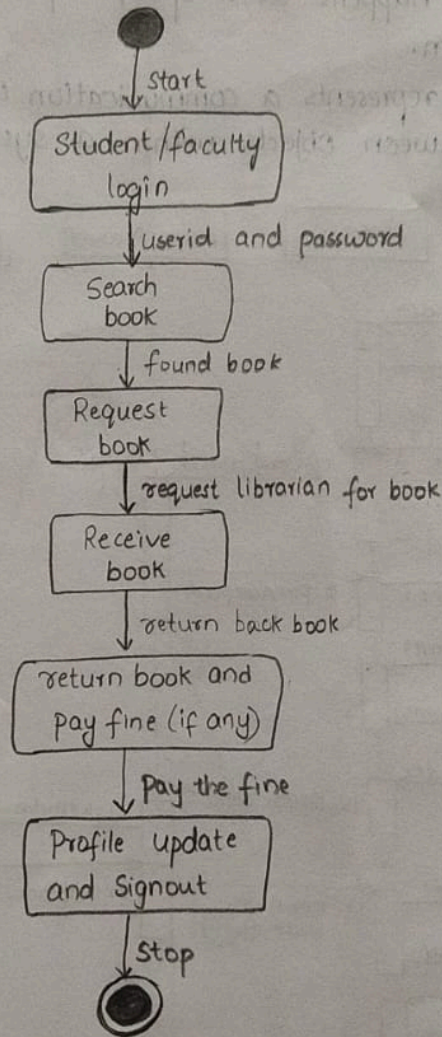
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Assignment-2

- 1) Compose the state chart diagram for unified library application.

Ans:



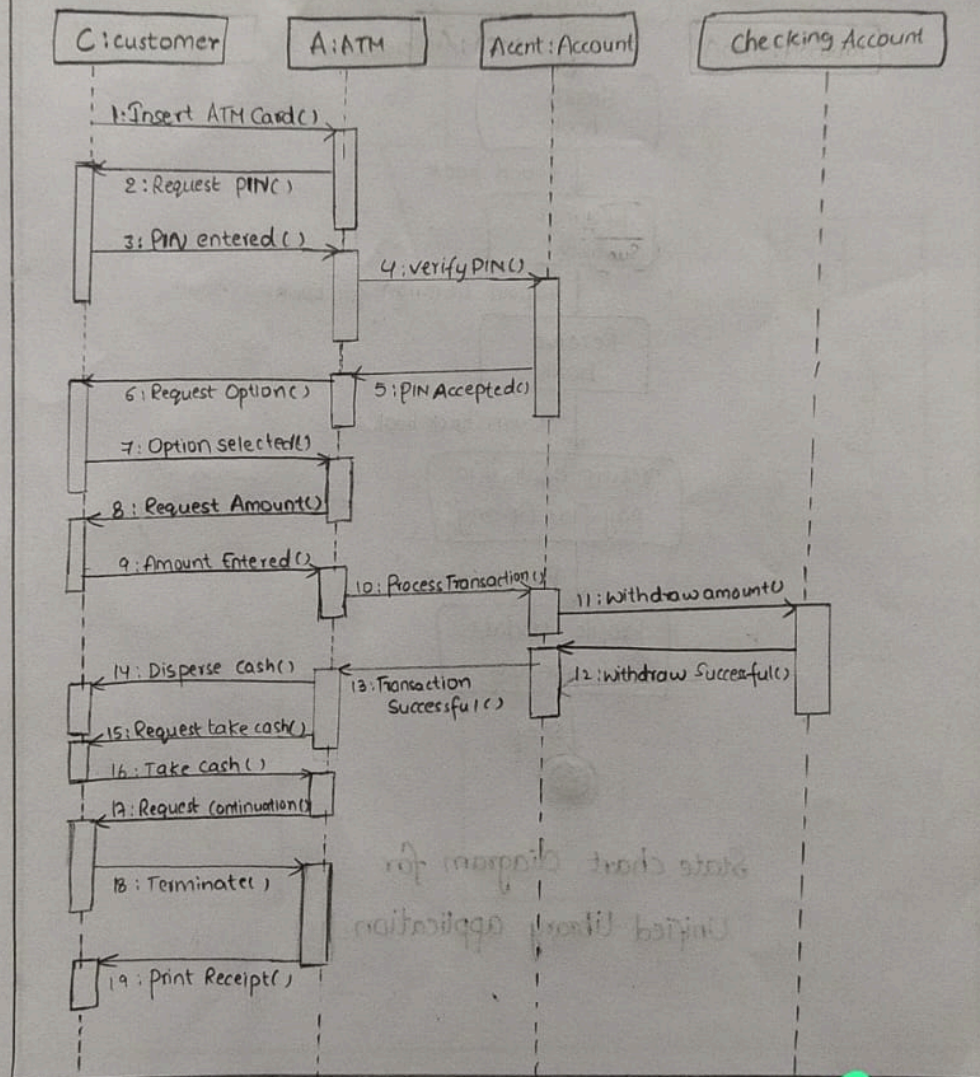
State chart diagram for
Unified library application.

6

2) Define Event & Signal and Design sequence diagram for ATM Bank System.

Ans: Event:- An event represents a significant occurrence or incident that happens at a specific point in time within a system.

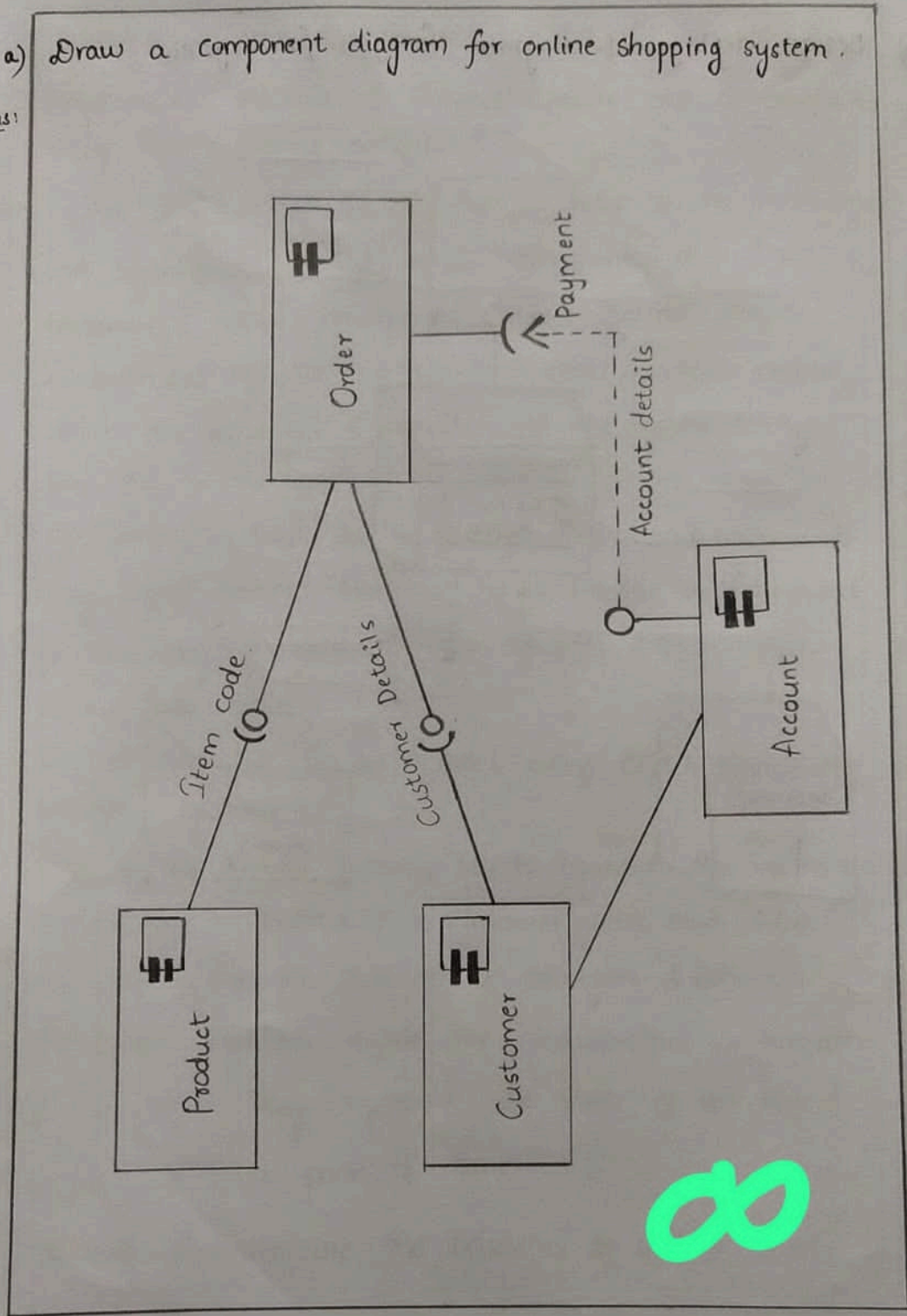
Signal:- A signal represents a communication or notification that is sent between objects within a system.



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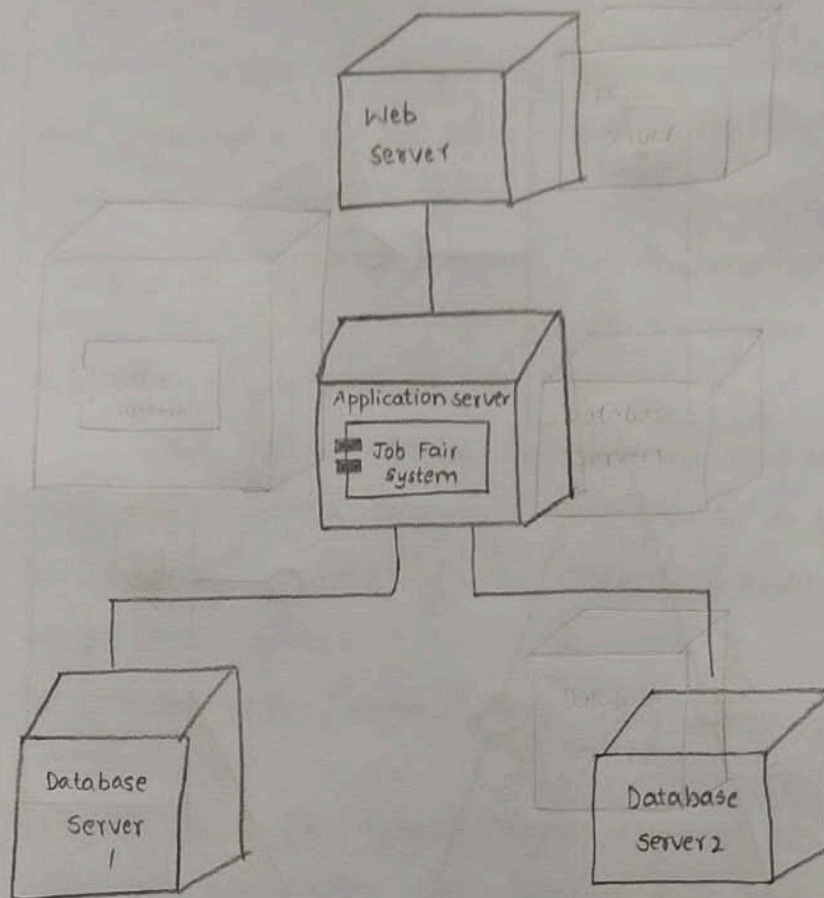
3) a) Draw a component diagram for online shopping system.

Ans:



b) Design deployment diagram for job fair system

Ans:



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