OBJECT ORIENTED MODELING, ANALYSIS AND DESIGN

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Object Oriented Design

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- **Object-oriented design** includes two main stages, namely,
1. **System design** and
2. **Object design**.

System Design

- In this stage, the complete architecture of the desired system is designed.

- The system is conceived as a set of interacting subsystems that in turn is composed of a hierarchy of interacting objects, grouped into classes.

- System design is done according to both the system analysis model and the proposed system architecture. Here, the emphasis is on the objects comprising the system rather than the processes in the system.

Object Design
- In this phase, a design model is developed based on both the models developed in the system analysis phase and the architecture designed in the system design phase.

- All the classes required are identified. The designer decides whether –
  - new classes are to be created from scratch,
  - any existing classes can be used in their original form, or
  - new classes should be inherited from the existing classes.

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System Design

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Object-oriented system design involves defining the context of a system followed by designing the architecture of the system.

- **Context** – The context of a system has a static and a dynamic part.
- The static context of the system is designed using a simple block diagram of the whole system which is expanded into a hierarchy of subsystems.

- The subsystem model is represented by UML packages. The dynamic context describes how the system interacts with its environment. It is modelled using **use case diagrams**.

- **System Architecture** – The system architecture is designed on the basis of the context of the system in accordance with the principles of architectural design as well as domain knowledge.

- Typically, a system is partitioned into layers and each layer is decomposed to form the subsystems.

OBJECT ORIENTED MODELING, ANALYSIS AND DESIGN
System Design

- **During analysis** the focus is on what need to be done
- **During Design** → developers make decisions about how the problem will be solved.

- System design is the first design stage for devising the basic approach in solving the problem.

- During system design, developers decide the overall structure and style.
- The system architecture determines the **organization of system into sub systems.**

THANK YOU

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