

**1. Study how many methods for designing of software have been found out in the literature and which can be chosen for designing? Explain.**

**Answer:** There are six methods for software designing in this lecture.

Systematic approaches to developing a software design.

- ✓ Structured Design
- ✓ Function-Oriented
- ✓ Object-Oriented
- ✓ Data-Oriented (Data-structure-centered)
- ✓ Component-based
- ✓ Formal Methods.

**Which can be chosen for designing?**

Object-oriented design (OOD) is the process of using an object-oriented methodology to design a computing system or application. This technique enables the implementation of a software solution based on the concepts of objects.

OOD serves as part of the object-oriented programming (OOP) process or lifecycle.

In object-oriented system design and development, OOD helps in designing the system architecture or layout - usually after completion of an object-oriented analysis (OOA). The designed system is later created or programmed using object-oriented based techniques and/or an object-oriented programming language (OOPL).

The OOD process takes the conceptual systems model, use cases, system relational model, user interface (UI) and other analysis data as input from the OOA phase. This is used in OOD to identify, define and design systems classes and objects, as well as their relationship, interface and implementation.

**Assumptions:**

1. Describing large, complex systems as interacting objects make them easier to understand than otherwise.
2. The behaviors of real world objects tend to be stable over time.
3. The different kinds of real world objects tend to be stable. (That is, new kinds appear slowly; old kinds disappear slowly.)
4. Changes tend to be localized to a few objects.