

# Module 7

## Modeling and Implementation

### Part 1

- **Generalization:** This technique is used to manage complexity by grouping many similar things under one general class. For example, creating a class for many objects sharing some common properties.
- **Aggregation:** It is an association between two or more classes to show how one object is composed of other objects. For example, a class patient can be composed of a patient and many consultants.
- **Activity diagram:** Activity diagrams show the activities involved in any process in the system. For example, they can be used to show business processes in which systems are used.
- **State diagram:** State diagrams are used to show how the system reacts to internal or external events. For example, the state of the system changes when a person logs in or logs out.
- **Design pattern:** Pattern is a description of a problem and its solutions in such a way that it can be reused in different settings. It is a method of reusing knowledge and experience and is generally associated with object-oriented design.
- **Host-target development:** This is a software development technique used to make the software compatible with different hosts (different machines with possibly different operating systems).

## Part 2: UML class diagram

