4 Objects and classes: the basic concepts

Learning outcomes

The material and exercises in this chapter will enable you to:

- Recognize some of the problems associated with traditional ways of developing software systems
- Explain how the object-oriented approach addresses these problems
- Describe the main features of an object and why it is effective as a software construct
- Apply the concept of a class and explain the relationship between objects and classes
- Identify the object relationships: association, aggregation and composition
- Apply inheritance and polymorphism.

Key words you will find in the glossary:

- aggregation
- association
- attribute
- class
- client–server
- cohesion
- composition
- data hiding
- dynamic binding
- encapsulation
- inheritance
- instantiation
- message
- method
- multiplicity
- object
- operation
- over-riding
- polymorphism
- public interface
- substitutability