

9 Object-Oriented Programming: Inheritance

Objectives

In this chapter you'll:

- Understand inheritance and how to use it to develop new classes based on existing classes.
- Learn the notions of superclasses and subclasses and the relationship between them.
- Use keyword `extends` to create a class that inherits attributes and behaviors from another class.
- Use access modifier `protected` in a superclass to give subclass methods access to these superclass members.
- Access superclass members with `super` from a subclass.
- Learn how constructors are used in inheritance hierarchies.
- Learn about the methods of class `Object`, the direct or indirect superclass of all classes.

Outline

1. 9.1 Introduction
2. 9.2 Superclasses and Subclasses

3. 9.3 protected Members

4. 9.4 Relationship Between Superclasses and Subclasses

1. 9.4.1 Creating and Using a CommissionEmployee Class

2. 9.4.2 Creating and Using a BasePlus-
CommissionEmployee Class

3. 9.4.3 Creating a
CommissionEmployee-BasePlusCommissionEmployee
Inheritance Hierarchy

4. 9.4.4
CommissionEmployee-BasePlusCommissionEmployee
Inheritance Hierarchy Using protected Instance Variables

5. 9.4.5
CommissionEmployee-BasePlusCommissionEmployee
Inheritance Hierarchy Using private Instance Variables

5. 9.5 Constructors in Subclasses

6. 9.6 Class Object

7. 9.7 Designing with Composition vs. Inheritance

8. 9.8 Wrap-Up

1. Summary

2. Self-Review Exercises

3. Answers to Self-Review Exercises

4. Exercises