

Exercise 4.1 **Inheritance**

On www.learnjavaonline.org, please work through section “Abstract Classes” and “Inheritance”.

Exercise 4.2 **Reading Assignment**

From <http://openbook.rheinwerk-verlag.de/javainsel/>, please read the following chapters:
6.4 Methoden überschreiben

Exercise 4.3 **Programming Exercise**

Please develop a Java program containing at least 3 classes, 1 abstract class, and 2 interfaces.

Please apply method overloading, polymorphism via class inheritance and polymorphism using interfaces.

Exercise 4.4 **Self-Assessment**

Please answer the following questions:

- (1) What is an abstract class?
- (2) What is the difference between an abstract class and an interface?
- (3) What is Polymorphism?
- (4) Describe the Liskov Substitution principle.
- (5) What is the purpose of the Object class?
- (6) What does it mean for a class to be “immutable”?
- (7) What is a wrapper class?
- (8) Why are wrapper classes used in Java?
- (9) What is the purpose of interfaces in Java?