

Programming Exercises - SDJ - Session 05

Exercise 5.01

Create a class Student that has:

- a) Three instance variables: a name (String), a gender (char - then when you create objects use the values 'M' or 'F'), and a student number (int).
- b) A 3-argument constructor setting all three instance variables.
- c) A 2-argument constructor with a name and a gender as argument. Assume that the student number is 0 if not set.
- d) Set methods for name and student number. Call the methods setName and setStudentNumber.
- e) Get methods for all three instance variables. Call the methods getName, getGender and getStudentNumber.

Then create a test class (StudentTest) with a main method and test the class Student:

- f) Create at least three Student-objects.
- g) Call all the methods you made in class Student, i.e. both constructors, all set and get methods.
- h) Print out all information of each Student-object.

Exercise 5.02

Modify class Student from the exercise above and:

- a) Add a method toString() that return a String with all information of a Student-object. As an example calling the method toString() on a Student-object with name = "Bob", gender = 'M' and student number = 2342 could return the following string: "Bob, 'M', 2342".
- b) Change the test class StudentTest so that you call method toString in the print-statements where you print out all information of each of the students.

Exercise 5.03

Design classes for a reservation system.

A reservation system allows a faculty member to reserve rooms. When a faculty member comes to the administrator to reserve a room in a given time period, he is shown a list of all rooms with their block and floor number, the number of seats, and whether the room has a projector. The faculty member chooses a room, and the administrator fills out a reservation receipt with the room number, the name of the faculty member, and the time period.

- a) Find the nouns in the above description that you could use as a class or attribute name.
- b) Find the classes and attributes among the nouns.
- c) Design your classes and draw a UML class diagram with them.