

## Exercise 2.1      **Language Basics 2/2**

On [www.learnjavaonline.org](http://www.learnjavaonline.org), please work through section “Objects” and “Compiling and Running with Arguments”.

## Exercise 2.2      **Java Test Project**

Install an IDE (integrated development environment, e.g. Eclipse) on your computer and create a project “Java\_Test\_Exercise\_2\_2”.

The program should take the following runtime arguments:

C01 Math1 C02 Java\_Programming C03 Computer\_Science S1234 Peter C01 C02 S0815 Paul C01 C03 S1015 Mary C02 C03

So `clsMain` should be executed like that “`java <package(s)+classname> <runtime arguments>`”

- C01 -> Lecture ID is 01, Analysis is the lecture title
- S1234 -> student id is 1234, student name is Peter, Peter attends courses C01 und C02

For this programming exercise, you can rely on the fixed runtime parameters, i.e., there are 3 courses, 3 students, each student attends 2 courses.

Create the following classes (here the prefix “`cls`” stands for “class”)

- `clsMain` (Main class containing `static void main()`)
- `clsStudent` (common student properties such as student id, name, etc.)
- `clsCourse` (course title, year of studies)

All classes should belong to the package `dhw_ma`. All attributes should not be directly accessible. Use getters and setters (hint: In Eclipse, use Refactor – Encapsulate Fields)-

When you run your program, `clsMain` should create 3 course objects and 3 student objects. Each student object is to be assigned to two course objects.

Compile and run your test project both in the IDE and directly from the command prompt.

## Exercise 2.3      **Self-Assessment**

Please answer the following questions:

- (1) How is the `new` operator used in Java?
- (2) What is a constructor?
- (3) How is the `this` keyword used?
- (4) What is a modifier?
- (5) How do you access runtime arguments within a Java program?
- (6) How do you specify runtime arguments within an IDE?
- (7) What is the purpose of getters and setters?
- (8) Is there an easy way to create getters/setters within an IDE?