Lucerne University of Applied Sciences and Arts

Programming and Algorithms

Personal Documentation

Ervin Mazlagić

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1 Preface

This is a personal documentation and notebook for the first course in programming at the Lucerne University of Applied Sciences and Arts. The goal of this document is to collect useful informations and nice snippets of code out of the course.

This document shall not be provided as a official or unofficial cheatsheet for the course exam or similar.

2 Objects and classes

2.1 Summary exercises

Exercise 1.31

What are the types of the following values?

0	short, char, byte, int, long
"hello"	String
101	short, char, byte, int, long
-1	int, char, byte, int, long
true	boolean
"33"	String
3.1415	float, double

Exercise 1.32

What would you have to do to add a new filed, for example one called name, to a circle object?

```
private String name;
```

Exercise 1.33

Write the signature of a method named send that has one parameter of type String, and does not return a value.

```
public void send(String foo)
```

Exercise 1.34

Write a signature for a method named average that has two parameters, both of type int, and returns an int value.

```
public int average(int foo, int bar)
```

Exercise 1.35

Look at the book you are reading right now. Is it an object or class? If it is a class, name some objects. If it is an object, name its class.

The book is definitely an object, because it's a specific thing and in no way generic. The class could have a name like `SchoolBook`, `CodingBook` or just `Book`.

Exercise 1.36

Can an object have several different classes? Discuss.

No it can't.

Glossary

C

class

describes the kind of an object; the objects represent individual instatioations of the class. 5

I

instance

is a realisation of a class to a real object, so instance is a synonym to object. 5

M

method

is a function of a specific class that can be invoked on a object of the given class. Objects usually do something if a method is invoked. 5

O

object

is an instance of a class. 5

P

parameter

is a additional information to a task (method). 5

S

signature

is the part of a method that identifies it to the compiler. For example the signature of `public setSpeed(int newSpeed, int newTolerance)` is not the whole head of the method but the name `setSpeed` and the list of parameter-types `int ..., int ...`. 5

state

is the set of data (called variables or fileds) that belongs to a specific object. "The state is represented by storing values in fields". 5

T

type

defines the kind of data or value (for example to a parameter or return value (see data types). 5