Software Development I – Exercises **Winter Term 2017/2018**

Übungen zu Softwareentwicklung 1 **Assignment 7**

Name: _____ Teaching Assistant: _____

Student ID (Matr.Nr.): _____ Points (max. 24): _____

Group: ☐ G1 ☐ G2 ☐ G3 ☐ G4 ☐ G5 ☐ G6 Deadline: **Tue., December 12, 2017 22:00**

Instructor: ☐ M. Haslgrübler ☐ C. Wirth ☐ T. Forstner Editing time (hours): _____

Preferred language for comments, proposals for improvements from TA's: ☐ DE ☐ EN

Problem: You are rich! **18+2+4 points**

As a rich person, you deal with buying and selling of estates. As you are also in love with programming, so you decide to implement your own estate management tool.

Your estates are all located in Linz and have the following attributes: street name, street number and estate size. As your estates are changed frequently, you decide to implement a solution based on your own list implementation with the following functionality:

a) Adding/Buying of estates
b) Removing/Selling of estates
c) Showing/Printing of the estate list
} 18P

d) Selectively printing of the estate list, e.g. by name or by area size (min,max) 2P
e) Sorted insert into the estate list (by Street Name and Number) 4P

Additionally, develop a test program, which tests your implementation by creating an instance of your class and checking the correct functionality by calling, the respective methods (see Example Output).

Example

```
Show Estates
==== Estate Manager ====
Altenbergerstraße 23 with 500 m2
Leonfeldnerstraße 5 with 550 m2
Rudolfstraße 1 with 620 m2
Freistädterstraße 2 with 900 m2
Leonfeldnerstraße 9 with 1500 m2
==== ===== ========= ====

Bought Altenbergerstraße 8
==== Estate Manager ====
Altenbergerstraße 23 with 500 m2
Altenbergerstraße 8 with 250 m2
Leonfeldnerstraße 5 with 550 m2
Rudolfstraße 1 with 620 m2
Freistädterstraße 2 with 900 m2
Leonfeldnerstraße 9 with 1500 m2
==== ===== ========= ====

Sold Leonfeldnerstraße 9
==== Estate Manager ====
Altenbergerstraße 23 with 500 m2
Altenbergerstraße 8 with 250 m2
Rudolfstraße 1 with 620 m2
Freistädterstraße 2 with 900 m2
Leonfeldnerstraße 9 with 1500 m2
==== ===== ========= ====
```

Example (cont.)

```
Print All in Altenbergerstraße
==== Estate Manager ====
Altenbergerstraße 23 with 500 m2
Altenbergerstraße 8 with 250 m2
==== ===== ========= ====

Sold first Estate
==== Estate Manager ====
Altenbergerstraße 8 with 250 m2
Rudolfstraße 1 with 620 m2
Freistädterstraße 2 with 900 m2
Leonfeldnerstraße 9 with 1500 m2
==== ===== ========= ====

Sold Last Estate
==== Estate Manager ====
Altenbergerstraße 8 with 250 m2
Rudolfstraße 1 with 620 m2
Freistädterstraße 2 with 900 m2
==== ===== ========= ====

Sold all Estates
==== Estate Manager ====
==== ===== ========= ====

Bought Estate Altenbergerstraße 25
==== Estate Manager ====
Altenbergerstraße 25 with 1000 m2
==== ===== ========= ====

Bought Estate Altenbergerstraße 19
==== Estate Manager ====
Altenbergerstraße 25 with 1000 m2
Altenbergerstraße 19 with 3002 m2
==== ===== ========= ====

Sold Second Estate
==== Estate Manager ====
Altenbergerstraße 25 with 1000 m2
==== ===== ========= ====
```

No more static methods or fields allowed – except main function and constants

For this exercise, hand in the following:

a) Approach to solving the problem (textual representation)

b) Source code (Java classes ideally with English(!) comments); in addition to the source code Java source files have to be converted to PDF and are to be included in the ZIP file,

c) Test plan for analyzing boundary values which are particular for lists and this program.

d) The output of your java program, which tests the defined test cases.

Pay attention to using adequate and reasonable data types and meaningful English variable names for your implementation, check the user input carefully and print out meaningful error messages.