# 02. Memory Management – Homework Exercises

Write C++ code for solving the tasks on the following pages.

Code should compile under the C++03 or the C++11 standard.

Submit your solutions here: <https://judge.softuni.bg/Contests/1153/03-Exercises-on-Pointers-References-and-Dynamic-Memory> (select “Compete” when prompted)

Any code files that are part of the task are provided under the folder **Skeleton**.

Please follow the exact instructions on uploading the solutions for each task.

# Task 2 – Sort Pointers

You are given information about companies – lines with names and ids, ending with the line "end" – as well as a Company class that represents a company. Your task is to sort the companies either by their name or by their id. The last line of the input will contain either "name" or "id", indicating what you should sort the companies by

You are also given code that does the reading and writing to the console, and uses a function named sortBy, defined in a file SortBy.h, to do the actual sorting. Note that the code you are given works on pointers, instead of normal Company objects. The sortBy function accepts 3 parameters:

* A Company\* to the first company in an array of companies
* A Company\* pointing AFTER the last company in the array of companies
* A function pointer/reference, which compares 2 Company objects (not pointers) and returns true if its first parameter is “less than” its second parameter. Study the SortPointersMain.cpp file for more information on what functions can be passed in to your function

You should submit a single .zip file for this task, containing ONLY the SortBy.h file, containing an int main() function that solves the task described.

|  |
| --- |
| **SortBy.h** |
| #ifndef SORT\_BY\_H  #define SORT\_BY\_H  #include "Company.h"  // Place your code here  #endif // !SORT\_BY\_H |

The Judge system has a copy of the other files and will compile them, along with your file, in the same directory.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| acme 424242420  softuni\_foundation 20140414  itjoro 878968302  end  id | softuni\_foundation 20140414  acme 424242420  itjoro 878968302 |