# 04. Advanced C++ Class Members – 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/1183/04-Advanced-CPlusPlus-Class-Members-Homework (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 5 – Lectures

You are given code similar to **Task 4 – Resources**, however this time the main() code uses a Lecture object (the class for which should be defined in a Lecture.h file) to store and organize the resources. It also uses several operators to do that, and iterates the Resources in the Lecture through a range-based for loop (*hint: the Lecture class will need begin() and end() methods which return iterators*).

Another difference is that in this task, there can be two Resource objects in the input which have different links, but have the same id. This indicates that the Resource has been changed – i.e. if a Resource with the same id is encountered **multiple times**, only keep its version appearing **latest** in the input.

The program’s output should be the same as in **Task 4** – the resources ordered by id, followed by the number of occurrences of each ResourceType, ordered Presentation (if non-zero), then Demos (if non-zero) and last Video (if non-zero).

Your task is to study the code, figure out what operators and classes you need to implement, search the Web for concepts you aren’t familiar with, and submit the files necessary for the program to compile and run successfully.

You should submit a single .zip file for this task, containing ONLY the files YOU created. The Judge system has a copy of the other files and will compile them, along with your file, in the same directory.

### Examples

|  |
| --- |
| **Input** |
| 6  42 Presentation http://thisiswillberenamed.com  255 Demo http://kottakoa.com  42 Presentation http://theanswertolifetheuniverseandeverything.com  13 Demo http://this.will.also.be.renamed.com  13 Demo http://example.com  69 Video http://yeahyouwish.com |
| **Output** |
| ... by id:  13 Demo http://example.com  42 Presentation http://theanswertolifetheuniverseandeverything.com  69 Video http://yeahyouwish.com  255 Demo http://kottakoa.com  ... by type:  Presentation: 1  Demo: 2  Video: 1 |

|  |
| --- |
| **Input** |
| 6  42 Demo http://thisiswillberenamed.com  255 Demo http://kottakoa.com  42 Demo http://theanswertolifetheuniverseandeverything.com  13 Demo http://this.will.also.be.renamed.com  13 Demo http://example.com  69 Video http://yeahyouwish.com |
| **Output** |
| ... by id:  13 Demo http://example.com  42 Demo http://theanswertolifetheuniverseandeverything.com  69 Video http://yeahyouwish.com  255 Demo http://kottakoa.com  ... by type:  Demo: 3  Video: 1 |