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Semester: II

Group: I

Section:

COMPUTER PROGRAMMING LABORATORY

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1. Task topic

A library. Write a class supporting a library. There should be class for a book and a class holding the hole collection of books. Overload all necessary operators. Details to discuss.

2. Project analysis

Program utilises class Book, members author, title, amount, methodes setAuthor, setTitle, setName, setAmount, getAmount and overloaded operator adding two Book objects. There is also printing function, that prints string input. Books are in vector Library.

3. External specification

To compile program use command:

`“g++ Library.c -o Library”`

To run program use command:

`“./Library”`

4. Internal specification

Class Book creates new books and stores informations about them. To store those informations there are methods of class as setAuthor using member author, setTitle using member title, setName using member author and title, set Amount and getAmount using int amount that hold amount of all copy of the same book. There is also printing function, that prints string input.

In function main there are created tree different book. Two of different title and author and two of the same title and author. Then they are counting by overloaded operator adding two books and there is introduced number of all books in stock, that is equal to 4.

Program supports alphabetical sorting by author's name using standard set function that holds all object in container in specific order. Then they are listed by printing strings function declared before.

All books are not stored in class but are stored in vector Library.

5. Source code

Source code provided separately

6. Testing

Testing were done by compiling and correctly running the program. There was created Book's classes, they were counted and sorted alphabetically as follows:

```
→ Library g++ Library.cpp -o Library
→ Library ./Library
List of Books:
Tom Clancy, "Patriot Games"
Auel Jean, "Earth's Children"
Clarke Arthur, "3001 The final odyssey"

Number of books in stock: 4

Alphabetical sorting by author:
Auel Jean
Clarke Arthur
Tom Clancy
→ Library
```

7. Conclusions

Program supporting work of library works correctly.