BLG252E - HOMEWORK3

Assignment Date: 7/5/2024

Due Date : 28/5/2024 at 23:59

- Student must do the homework without any collaboration or help.
- Automatic plagiarism detection software will be used for scanning and checking the submitted files.
- If significant similarities are found between submitted files, it will be considered as plagiarism, and those homework grades will be zero.
- File should be submitted to Ninova only, email submission is not accepted.
- Program should be compiled without syntax errors.
- It should work efficiently and generate correct results as expected.
- Solution should be according to the class specifications given below. Any other methods will not be graded.

BOOK CLASS

- Write the C++ codes of the UML class diagram given on the right.
 (Do not make any modifications to the class specifications.)
- The parametered constructor function initializes member data with the parameters.
- The print function displays all member data on screen.

Book	
+ book_id + publication_year + author_ID + publisher_ID + book_title	: int : int : int : int : string
+ Book () + Book (int, int, int, int, string) + print() : void	

MAIN PROGRAM

Write a C++ program to do followings.

By looping and using C++ file input statements, read all records from the ASCII text files described below. (There are 3 text files in the DATA FILES.ZIP file.)

Do not make any data content modifications or format editings in text files.

Your program should be general, so that it works for any number of records in the files.

The following is a sample code for reading the fields from the AUTHORS.TXT file:

```
while ( !dosya.eof() ) {
  dosya >> author_id;
  getline(dosya, author_fullname);
  ....
}
```

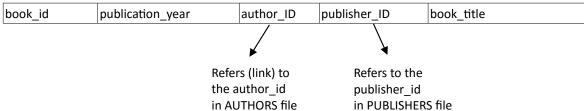
PUBLISHERS.TXT file format:

publisher_id publisher_name

AUTHORS.TXT file format:

author id author fullname

BOOKS.TXT file format:



A book has only one author and one publisher. An author may have one or more books.

The STANDARD TEMPLATE LIBRARY (STL) will be used for storage of data.

Store all data that were read from text files into the STL map variables defined globally as below.

```
map <int, string> publishers;  // First field is publisher_id, second field is publisher_name
map <int, string> authors;  // First field is author_id, second field is author_fullname
map <int, Book> books;  // First field is book_id, second field is object of Book class
```

EXAMPLE SCREEN OUTPUT

By looping through the publishers map, generate a screen output that contains Lists of All Books Grouped By Publishers. The publishers, authors, and books map variables should be used when printing information on screen. In the print member function of Book class, use the built-in **setw** function, defined in <iomanip> header, to obtain column alignments on screen output.

Also display a dashed line (such as "------ publishers.

```
LISTS OF ALL BOOKS GROUPED BY PUBLISHERS
 _____
PUBLISHER ID
                : 001
PUBLISHER NAME : APRESS MEDIA
NUMBER OF BOOKS: 2
BOOK_ID
        PUBLICATION_YEAR
                            AUTHOR_FULLNAME
                                              BOOK TITLE
         2018
                            Ivor Horton
                                              Beginning C++17 From Novice to Professional
1015
         2020
                            George Leimers
                                              Modern C++ for Absolute Beginners
PUBLISHER ID
               : 002
PUBLISHER NAME : JOHN-WILEY
NUMBER OF BOOKS: 4
BOOK_ID
         PUBLICATION_YEAR
                            AUTHOR_FULLNAME
                                              BOOK_TITLE
                                              Data Structures and Algorithm Analysis in C++
1012
         2014
                            Mark Allen Weiss
1016
         2017
                            Lawrence Strutton Numerical Recipes in C
1022
         2018
                            Brian Kernighan
                                              The C programming Language
1023
         2015
                            Bruce Eckel
                                              Programming in C++
                : 003
PUBLISHER ID
PUBLISHER NAME : MCGRAW-HILL
NUMBER OF BOOKS : 5
         PUBLICATION_YEAR
                            AUTHOR_FULLNAME
BOOK ID
                                              BOOK TITLE
1002
         2016
                            Timothy McPeice
                                              Beginning Algorithms
1008
         2012
                            Paul Hauwess
                                              C++ for Everyone
1010
         2015
                            Michael Dundredge
                                              C++ Quick Syntax Reference
1011
         2018
                            Edward Schultz
                                              Cross-Platform Development in C++
1019
         2019
                            Harris Wanstead
                                              Object-Oriented Programming Using C++
PUBLISHER ID
                : 004
PUBLISHER NAME : MICROSOFT PRESS
NUMBER OF BOOKS: 2
BOOK_ID PUBLICATION_YEAR
                            AUTHOR_FULLNAME
                                              BOOK_TITLE
                            Ivor Horton
                                              Beginning Visual C++
                                              Windows via C/C++
1024
         2018
                            Jeffrey Richter
                : 005
PUBLISHER ID
PUBLISHER NAME : PACKT PUBLISHING
NUMBER OF BOOKS: 3
                            AUTHOR FULLNAME
        PUBLICATION YEAR
                                              BOOK TITLE
BOOK ID
                            John Sanfield
                                              Beginning C++ Game Programming
1003
         2019
                            Pierre Wieleon
                                              Object-oriented Programming with Java
1020
         2016
1021
         2017
                            Steve Newark
                                              Practical C++ Programming
                : 006
PUBLISHER ID
PUBLISHER NAME : PEARSON EDUCATION
NUMBER OF BOOKS: 3
        PUBLICATION YEAR
                            AUTHOR FULLNAME
BOOK ID
                                              BOOK TITLE
1007
         2016
                            Paul Deitel
                                              C How to Program
1009
         2016
                            Harvey Deitel
                                              C++ How to Program
                                              Java Programming Language
                            Robert Lafore
1013
         2012
PUBLISHER ID
               : 007
PUBLISHER NAME : PRENTICE-HALL
NUMBER OF BOOKS : 5
        PUBLICATION_YEAR
                            AUTHOR FULLNAME
BOOK ID
                                              BOOK TITLE
1001
         2014
                                              An Introduction to GCC Toolchain
                            James Riverton
         2013
                                              C for Engineers and Scientists
1006
                            John Bronson
1014
         2017
                            Herbert Schildt
                                              Java The Complete Reference
1017
         2017
                            Aurelie Linden
                                              Object-Oriented Analysis and Design
1018
         2012
                            Robert Lafore
                                              Object-Oriented Programming in C++
TOTAL NUMBER OF ALL BOOKS : 24
Program finished.
```