

DETAILS OF THE ASSESSMENT

Your Task:

You are required to develop a programmatic solution, using the Java programming language, to meet the specified requirements as detailed below. You will be required to demonstrate the work you've submitted in order to receive a mark.

Assignment Overview

The aim of this assignment is to produce a console based Java application called "Library Catalogue" which can be used to search and display information about books stored in the library catalogue.

Note – To achieve the marks, data must be entered, read and displayed in the specified formats.

The assignment has been divided into two parts, each part divided into a number of requirements as described below.

PART1 (Assignment 2 marks) – Due date : 19th Bhadra.

Requirement 1

For this requirement you would need to develop a solution in pseudocode for part1 and submit your pseudocode

Requirement 2 (20 marks)

The program must have the ability to prompt the user for input of title, author, publisher price, pages, and ISBN for each book via keyboard.

The program should continuously allow the user to input books details until the user enters "nomore" when the user no longer wishes to type more data. For the purpose of this assignment, you can assume that the maximum number of books the user will enter is 20.

The program should store the data (i.e. it is not just echoing the typed in data back to the console) and at the end of data input output the entire library catalogue to the console in the specified format (see below). The following is an example of the typical output to be displayed.

Title	Author	Publisher	Price	Pages	ISBN
====	=====	=====	=====	=====	=====
OOP programming	Graham Winter	O'Reilly	32.50	120	0471974555
QoS	Geoff Ferguson	Wiley	12.99	80	1991974123
Java First	Anthony Jones	Pearson	8.00	420	4321567321

Note: Library catalogue must be display in the format specified above with relevant headings.

Requirement 3

The third requirement for part1 involves aggregating the values from the input and producing a simple report to the console once the user finished inputting data. The report should identify the following information –

- The total number of books.
- The total cost of books.
- The maximum cost of a book.
- The minimum cost of a book.
- The book with highest number of pages.
- The book with lowest number of pages.
- The average cost of a book.

The output should be in the following format –

Totals

Total number of books: 3

Total cost of books: 53.49

Maximum cost of a book: 32.50

Minimum cost of a book: 8.00

'Java First' has the highest number of pages: 420

'Qos' has the lowest number of pages: 80

Average cost of a book: 17.83

PART 2

PART 2 (Assesment 3) – Due Bhadra 23rd

For part2, the program will read in the books' details from a text file (no user input via keyboard).

Important note – Part2 will be submitted as a separate submission and should not include part1 requirements.

Requirement 1

For this requirement you would need to develop a solution in pseudocode for part2 and submit your pseudocode

Requirement 2

The program should read the books' data from a text file. Each line in the file contains the data for a specific book. The format of each line within the file is as follows:

Title - author – publisher - price – pages - ISBN

Notice how a colon character (-) is used to separate different parts of the line of data (the field delimiter).

The following is an example of the typical line of data within the file.

OOP programming - Graham Winter – O'Reilly - 32.50 – 120 - 0471974555

The program should prompt the user to enter the name of data file, then it should read, store, and process each line of data stored in the file and output the data to the console in the specified format (i.e., this is not just reading and displaying the raw data as stored in the file).

The program should output the data to the console in the following format:

Title: OOP programming

Author: Graham Winter

Publisher: O'Reilly

Price: 32.50

Pages: 120 pages

ISBN: 0471974555

Title: QoS

Author: Geoff Ferguson

Publisher: Wiley

Price: 12.99

Pages: 80 pages

ISBN: 1991974123

Title: Java First

Author: Anthony Jones

Publisher: Pearson

Price: 8.00

Pages: 420 pages

ISBN: 4321567321

Requirement 3

The data within a line of the data file could be corrupted. Hence, the program must check each line of data within the file, identify invalid data and report these to the user via messages on the console. At a minimum, the program should check and validate the following possible issues–

- Book title may be missing.
- Book author may be missing.
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- Book publisher may be missing.
- Book ISBN may be missing.
- The field delimiter may be missing or wrong field delimiter is used.
- Book price may not be a numeric value.
- Book number of pages may not be a numeric value.

Note: The format in which the problems are reported is your personal choice, but better descriptions of the problem and displaying the invalid data along with appropriate error message(s) separately will achieve better marks during assessment.

The program should output the total number of invalid books to the console.

Requirement 4

The final requirement is to enhance your application so that it allows the user to enter a specific author name and produce a report of all books for that particular author.