CS 2022-Mini project

Project Description

You are required to develop a rating system for an online book market place. A user can rate books and the vendors in a scale of 0 to 5.

Book search

- List 5 most recent ratings for the product
- Overall aggregate rating of product
- Top rated vendors of the product

Vendor search

- 5 most recent ratings of the vendor
- Overall aggregate rating of the vendor
- List of products that vendor sells and overall aggregate rating of each product

Calculate overall aggregate rating of the product/vendor

Weight of the user rating (w)=2-1/n where n= number of times the user has rated a product

Aggregate rating of a product or vendor= $\sum_{i=1}^{n} wi * ri$ /Σwi where r is the user rating and w is the weight of the rating.

Input

You will be given an input file containing following

Timestamp user_name book_name vendor vendor_rating book_rating

ex: 2013-01-15T22:45 textuser Introduction_to_Algorithms abcpublishers 3 4

Notes

1. You can only use primitive data types in your implementation. If you are using any other data structures (ex: linked lists, hashtables, arraylists etc.) you should first implement the data structured and use in your program.
2. If you are using any sorting or searching algorithms you should implement them yourself.

Submissions
1. A Design Document (1-2 A4 pages) with the high level design of the project along with the possible data structures that you are planning to use. You should clearly mention any assumptions you made in selecting these data structures.
2. A Report (3-5 A4 pages) with answers to the following questions in point form
   a. Name the main data structures and algorithms used in the program

b. Why did you choose the data structures mentioned in part a? What are the other data structures you considered and why did you pick this data structure above the other data structures?
c. Calculate the running time for any two algorithms mentioned in part a
d. What are the problems that you faced and how did you overcome them?
e. What future improvements can you suggest?
3. A fully working program with the full source code. All code should be commented, and all code files should start with a header comment that includes the name and the index number of the student.
Note that code files that do not include the correct index number and name will be given zero marks. You should also include an instruction file on how to set up the program and how to run it.
4. An in Lab Demonstration of the project.
a. You are required to bring hardcopies of your design document and report to the demonstration.

Deadlines

1. Project design document- **21st June 2013**
2. Source code and report- **28th June 2013**

Evaluation Criteria

You will be evaluated based on;

1. Quality of the design.
You are expected to consider several data structures to store the data and pick the most suitable one. You should be able to explain the data structures you considered and the reason for your final selection. You will be evaluated based on your selection and the explanation of the rationale behind the selection.
2. Quality of the program
You are expected to develop a robust, efficient and maintainable program in the project. You will be evaluated based on these aspects of the program you develop and some of the factors considered will be robustness of the program, error handling, efficiency of the algorithms/program, variable naming, code commenting and adhering to coding best practices.
3. Quality of the Demonstration
You are expected to demonstrate your project, explain the important parts of the project and answer questions based on your project.