Assignment Cover Sheet

Qualification		Module Number and Title
HND in Computing / HND in Software Engineering		Data Structures and Algorithms SED5213
Student Name & No.		Assessor
		Sanaka Perera
Hand out date		Submission Date
25.01.2021		24.02.2021
Assessment type Coursework	**Duration/Length of Assessment Type** 4500 words	**Weighting of Assessment** 100 %

Learner declaration
I, …….<name of the student and registration number>, certify that the work submitted for this assignment is my own and research sources are fully acknowledged.

Marks Awarded			
First assessor			
IV marks			
Agreed grade			
Signature of the assessor		Date	

FEEDBACK FORM
INTERNATIONAL COLLEGE OF BUSINESS & TECHNOLOGY

Module:

Student:

Assessor:

Assignment:

Strong features of your work:

Areas for improvement:

Marks Awarded:

Coursework – A java application for ***Book Manipulation***– 100 Marks

Learving outcomes covred

1. Understand the fundamentals of variety of data structures
2. Understand the fundamentals of various common algorithms
3. Evaluate algorithms and data structures in terms of time complexity
4. Apply algorithms and data structures to solve programming problems

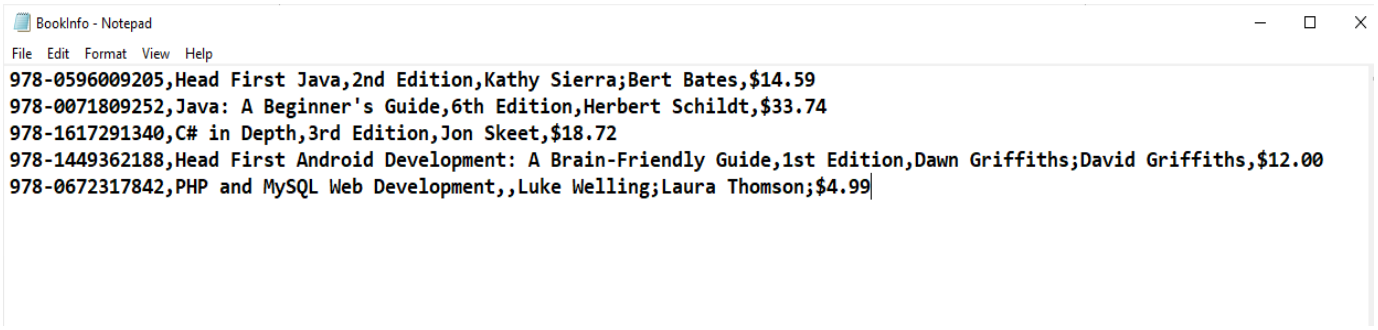
Scenario

You are required to develop system which will maintain a list of Books, ISBNno, title, author, price etc. There are should be options to make provisions for inserting information (new books), delete books, update books, display all books, and display book details for given book ISBN number/title/author. Sort books by price in ascending order and descending order.

You must maintain a simple text file to read and write all books in formation. If the text file exists and is not empty, then the contents of the text file are read into the system. If the text file is not existing there must be a way to create a text file to write information.

Example: - text file structure given bellow.

BookInfo.txt



Tasks

a) Identify possible data structures that can implement to manage the book information and explain the operations of each identified data structure. (1000 words). (LO 1) (15 Marks)

b) Identify suitable search operation that can implement to find the book information and explain the operation. (500 words). (LO 1) (10 Marks)

c) Identify suitable sort operation that can implement to sort the book information and explain the operation. (500 words). (LO 1) (10 Marks)

d) Implement the solution to achieve all the given requirements with the required algorithms by using java programming language. (LO 1, LO 2, LO4) (40 Marks)

e) Include test plan, test data and proper application of the test plan. Test your mobile application according to the test plan. (LO 3) (15 Marks)

f) Documentation standards. (10 Marks)

Guidelines for the report format

- Paper : A4
- Margins : 1.5" left, 1" right, top and bottom
- Page numbers : bottom, right
- Line spacing 1.5
- Font style : Times New Roman
- Headings size : 14pt, Bold
- Normal size : 12pt
- Referencing and in-text citation should be done strictly using **Harvard Referencing System.**

Source code and installation package files should be submitted in a single zip file.

Assessment Criteria

Task (a) contain 15 marks.

Criteria	**Marks** **Out of 15**	**Marks obtained by the student for the answer provided**
Poor Poor explanation of suitable data structures and operations	**0-6**	
Pass Proper explanation of suitable data structures and operations	**6-9**	
Good Good explanation of suitable data structures and operations	**9-11**	
Excellent Excellent explanation of suitable data structures and operations	**11-15**	

Task (b) contain 10 marks.

Criteria	**Marks** **Out of 10**	**Marks obtained by the student for the answer provided**
Poor Poor explanation of selected search/ find algorithm.	**0-4**	
Pass Proper explanation of selected search/ find algorithm.	**4-6**	
Good Good explanation of selected search/ find algorithm. Efficiency of the selected find algorithms.	**6-7**	
Excellent Excellent explanation of selected search/ find algorithm. Efficiency of the selected find algorithms. Necessary diagrams.	**7-10**	

Task (c) contain 10 marks.

Criteria	Marks Out of 10	Marks obtained by the student for the answer provided
Poor Poor explanation of selected sorting algorithm.	**0-4**	
Pass Proper explanation of selected sorting algorithm.	**4-6**	
Good Good explanation of selected sorting algorithm. Efficiency of the selected sorting algorithm.	**6-7**	
Excellent Excellent explanation of selected sorting algorithm. Efficiency of the selected sorting algorithm. Necessary diagrams.	**7-10**	

Task (d) contains 40 marks

Criteria	Marks Out of 40	Marks obtained by the student for the answer provided
Poor • Poor system implementation • Functions not working properly • Poor use of data structures and algorithms	**0-16**	
Pass • Basic file handling system. • Simple algorithms. • Few string operations.	**16-24**	
Good		

• Good use of data structures and algorithms. • Standard coding structure. • Use of string operations. • Algorithms efficiency	**24-28**	
Excellent • Complex functionality (Innovative aspects) • Reports being proposed to facilitate decision making. • Algorithms efficiency. • Naming convention (Controls and Variables) • Proper use of data structures and algorithm. • Appropriate validations.	**28-40**	

Task (e) contains 15 marks

Criteria	**Marks** **Out of 15**	**Marks obtained by the student for the answer provided**
Poor • Poor test plan and test cases. • No conclusion	**0-6**	
Pass • Simple test plan and test cases. • Conclusion of each test case.	**6-9**	
Good • Good test plan and test cases with average explanations • Suitable test data used in testing.	**9-11**	
Excellent • Good test plan and test cases with screen shots & average explanations. • Suitable test data used in testing.	**11-15**	

Task (f) contains 10 marks

Criteria	**Marks**	**Marks obtained by the student**

	Out of 10	**for the answer provided**
Poor standard of documentation with poor explanations	**0-4**	
Acceptable standard of documentation with poor explanations	**4-6**	
High standard of documentation with screen shots & average explanations	**6-7**	
Professional standard of documentation with screen shots & good explanation	**7-10**	

Total Marks	**Out of 100**	