Qualification		Module Number and Title
HD in Computing and Software Engineering		CSE 5010 / Data Structures and Algorithms
Student Name & No.		Assessor
		Mr. Sanaka Perera
Hand out date		Submission Date
14.06.2021		**31.07.2021**
Assessment type Coursework	**Duration/Length of Assessment Type** 3000 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

LO 1 Explain the fundamentals of variety of data structures

LO 2 Explain the fundamentals of various common algorithms

LO 3 Evaluate algorithms and data structures in terms of time and space complexity

LO 4 Apply algorithms and data structures to solve programming problems

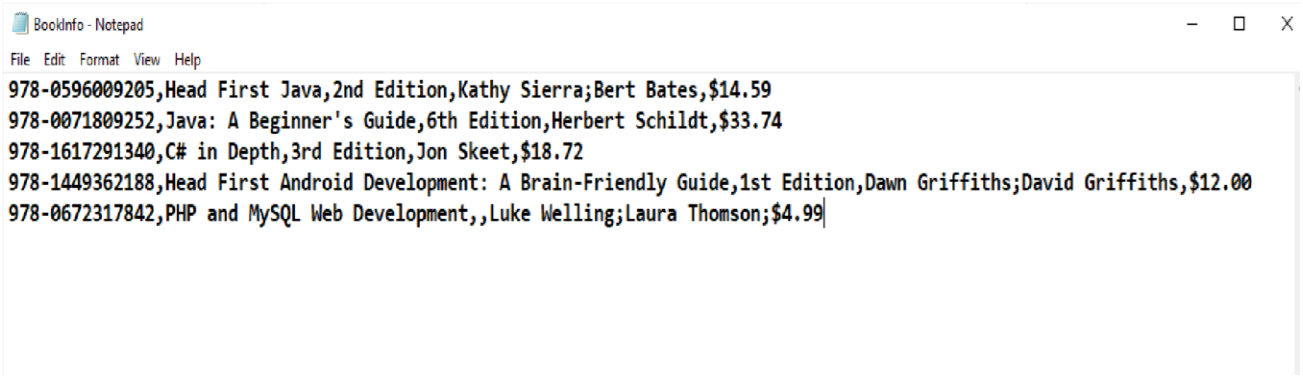
Scenario

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

1. Identify and properly justify the most suitable data structure with their operations for above requirement. (Explain and evaluate the advantages and disadvantages of suitable data structure. And evaluate the suitability of selected algorithm with real-time examples (Marks 30)(LO1)

2. Identify suitable sort operation that can implement to sort the book information and explain the operation. Crate a Program for Sort value in the given book information array. Student can select any Sort algorithm for execute the program. (500 words). (LO 2,LO3) (20 Marks)

3. Identify suitable search operation that can implement to find the book information and explain the operation.
   (500 words). (LO 2, LO3) (20 Marks)

4. To improve the performance of the system memory management recursion algorithms, play big role. (20 Marks) (LO4)

    1. What is recursion in data structure? Identify the advantages and disadvantages of recursion algorithms.
    2. Develop method for recursion algorithm to print factorial value numbers.

5. 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.

Task 1	Out of 30
Poor Poor explanation about suitable data structures	0-12
Basic Basic explanation about suitable data structures Explain with appropriate examples	12-18
Good good explanation about suitable data structures Explain with appropriate examples Identify the most suitable data structures for given requirement	18-21
Excellence good explanation about suitable data structures Explain with appropriate examples Identify the most suitable data structures for given requirement Used proper justification for Identify the most suitable data structures for given requirement	21-30

Task (2) contain 20 marks.

Criteria	**Marks** **Out of 20**	**Marks obtained by the student** **for the answer provided**
Poor Poor explanation of sort Sort/ find algorithm. Basic cording with Class and main method	**0-8**	
Pass Reasonable explanation of selected sort algorithm. Java class with main method Create class variables and Constructors and method for sort	**8-12**	
Good Good explanation of selected Sort algorithm. Efficiency of the selected find algorithms. Java class with main method Create class variables and Constructors and method for sort Create method for print values	**12-14**	
Excellent Excellent explanation of selected Sort algorithm. Efficiency of the selected find algorithms. Necessary diagrams.	**14-20**	

• Appropriate sort method.
  ○ proper method name with array parameter
  ex: ***public static void sort (int arr[]){ }***
  ○ popper search algorithm – method body must include appropriate **variables** declarations, if conditions, **loops** structures, values **swaps/shifting**.
• Appropriate search method.
  ○ Proper method name with array parameter
  ex: ***public static void display (int arr[]){ }***
  ○ Proper display algorithm – method body must include appropriate **variables** declarations, **loop** structure.
• Appropriate main method calling sort and display method.
  ex: ***public static void main (String args[]){ }***		

Task (3) contain 20 marks.

Criteria	**Marks** **Out of 20**	**Marks obtained by the student** **for the answer provided**
Poor Poor explanation of selected Search algorithm.	**0-8**	
Pass Reasonable explanation of selected Search algorithm.	**8-12**	
Good Good explanation of selected Search algorithm. Efficiency of the selected Search algorithm.	**12-14**	
Excellent Excellent explanation of Search sorting algorithm. Efficiency of the selected Search algorithm. Necessary diagrams.	**14-20**	

Task 4	**Out of 20**	
Poor Explain the use of recursive algorithm and poor evaluation of the advantages of recursive algorithm	0-6	
Average Explain the use of recursive algorithm and basic evaluation of the advantages of recursive algorithm. Write a basic method with correct parameters and proper return type	6-10	
Good Explain the use of recursive algorithm and evaluation of the advantages of recursive algorithm. Write a basic method with correct parameters and proper return type. Write a method body with proper cording	10-15	
Excellent, Explain the use of recursive algorithm and proper evaluation of the advantages of recursive algorithm. Write a basic method with correct parameters and proper return type. Write a proper method with appropriate comments in program	15-20	

Task (5) 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**	