REPORT ON LINKEDLIST OPERATIONS

Advanced Implementation Assignment – SP1

Abstract

A brief report on some operations on linked list and their solutions

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Question 1

Given two linked lists implementing sorted sets, write functions for union, intersection, and set difference of the sets.

Compiling & Running Instructions

Compiling - **javac listmerge.java**
Running - **java listmerge**
1 2 3 4 5
6 7 8 9 10
(Or)
java listmerge input_lmerge.txt
Output - **output_lmerge.txt**

Question 4

Implement a recursive algorithm without recursion, by using a stack to simulate recursion. You may work on any recursive algorithm that has multiple recursive calls such as Merge Sort, Binary tree traversals, Quick sort, or, Linear-time median.

Compiling & Running Instructions

Compiling – **javac SimulatRecursion.java**
Running - **java SimulateRecursion <size>**
java SimulateRecursion 1000000

Question 5

Extend the "unzip" algorithm discussed in class to "multiUnzip" on the SinglyLinkedList class

Compiling & Running Instructions

Compiling - **javac Zipper.java**
Running - **java Zipper <positions> <size>**
java Zipper 3 1000000

Question 6

Write recursive and non-recursive functions for the following tasks:

(i) Reverse the order of elements of the SinglyLinkedList class

(ii) Print the elements of the SinglyLinkedList class, in reverse order.

Compiling & Running Instructions

Compiling - **javac ReverseList.java**
Running – **java ReverseList <options> <size>**
java ReverseList 1 1000000

In running instructions – Options are as follows:
1. Reverse List Recursively
2. Reverse List Non-Recursively
3. Print List in Reverse Order Recursively
4. Print List in Reverse Order Non-Recursively