
CSCI203 Algorithms and Data Structures

Assignment 2

July Session 2019

Objectives

- To write program to enter unique characters of string
- To be able to do permutations
- To practice solving problems using BTrees
- To practice writing solutions to problems in a clear and succinct way

Problem

You are required to construct a program that will perform the following sequence of operations:

- (a) Reads a string and an integer, N, where the value of N is no larger than the number of characters in the string. (You may assume that the characters in the string are not repeated)
- (b) Generate and output all possible N-character permutations of the characters in the string.
- (c) Store the generated permutations, as they are calculated, in a 2-4 tree. Print the inorder traversal of the tree.

E.g.

Input

AbdDC 2

Output

Ab, Ad, AD, AC, bA, bd, bD, bC, dA, db, dD, dC, DA, Db, Dd, DC, CA, Cb, Cd, CD

Submission

Upload **ZIP/RAR** document titled **yourname_W11_A2** into the correct submission folder in **Moodle before 11pm** Malaysian time. Late submission will not be accepted.

Your document should contain your source code, screen shots and other necessary files. Show your code and output during lab to receive your marks.

Marking Criteria

Correctness (4 marks)

Efficiency (2 marks)

Validation (2 marks)

Output presentation (2 marks)