Data Structures and Algorithms

Comp 200

Fall 2022

Department of Computer Science

Forman Christian College University

Lab 5
Recursion

DESCRIPTION	MARKS ALLOCATED
Attendance	25%
Task Completion	35%
Viva	35%
Submission	15%

Marks will be deducted in case if students have not completed the assigned task.

Note that these marks are max in each category. We may assign less than the given percentage of marks in case students have not successfully completed all the requirements.

This lab is time constrained. Please note that you must finish and submit your work within given time.

Question 1: [Weightage: 20%]

Given the array of integers `a` and an integer `n`, verify whether `n` appears in `a`. Also compute time complexity.

Question 2: [Weightage: 20%]

Given an array of integers `a` and an integer `n`, returns the number of occurrences of `n` in `a`. Also compute time complexity.

Question 3: [Weightage: 20%]

Given an array of integers `a`, returns a new array obtained from a by replacing each negative integer with 0. Also compute time complexity.

For example, the call `negativesToZero({1,-2, 3, 4, -5})`, should return the array {1, 0, 3, 4, 0}.

Question 4: [Weightage: 20%]

Given an array of integers `a`, inverts the positions of its elements. Also compute time complexity.

For example, the call `invert(a)`, where a is a reference to the array {1, 2, 3, 4}, should modify the array in such a way that a refers to {4, 3, 2, 1}.

Question 5: [Weightage: 20%]

Given an array of integers `a`, returns the boolean value `true` if the sequence of elements of `a` coincides with the same sequence in inverse order, `false` otherwise. Also compute time complexity.