



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

Winter Semester, 2019-20

CSE2003 - Data Structures and Algorithms

Activity I

Devise code in C to

- a. Convert given infix expression to postfix expression using stack.
- b. Perform all possible operations on simple queue of float values.



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Activity II

Devise code in C to perform the following

- a. Create a single linked list containing employee information such as Empid, EmpName, and Age.
- b. Search for a particular employee, if employee information is found, then delete from the list and display the list.



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Activity III

Devise code in C to accept age of n employees and construct a min heap. Then display the employee's ages from highest to smallest. While constructing min heap display each insertion after heapify.



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Mid Term Lab, Winter 2019-2020

CSE2003- Data Structures and Algorithms

Slot: L11+L12

Exam Duration: 90 Minutes

Maximum Marks : 20

1. Inscribe a program to create queue of patients waiting to see the physician in a clinic. Insert patient details one by one into the patient queue in its appropriate position based on the age, irrespective of their arrival time. Patients should be allowed in the order from the oldest to the youngest.
2. Create an unordered linked list to enrol the students who wish to participate for a gaming event by taking details like name, register no., age, and phone number. Ensure that no more than five members are there in the list with same age. Perform insertion () and display () operations on the linked list.
3. Create a binary tree of N nodes and perform preorder and postorder traversal of a created tree recursively.
4. Given a linked list of employee's age, devise a RemoveDup () function which takes a list and deletes any duplicate ages from the list. The list is not sorted.
5. Create Binary Search Tree of type characters and it should perform the following operations
 - a) Insertion of new node into the BST
 - b) Perform In-order traversal on BST to get the sorted list.
6. Given a Linked List of integers, write a function to modify the linked list such that all even numbers appear before all the odd numbers in the modified linked list.
7. Create a heap using a following set of integers 25,57,48,37,12,92,86. The final heap ordering taken as \geq on integers.
8. Inscribe a code to traverse a created directed graph using queue and show the traversal starting from the node numbered 1.
9. Develop a pseudo code to traverse a single linked list and search for a negative value node. If found delete its successor node from the linked list.



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Activity V

Devise code in C to perform the following sorting techniques

- a. Bubble sort
- b. Quick sort