



CL-2001 Data Structures

Objectives:

- Binary Heap
- Max, Min Heap
- Heapify
- Heap Sort

Note: Carefully read the following instructions (*Each instruction contains a weightage*)

1. There must be a block of comments at start of every question's code by students; the block should contain brief description about functionality of code.
2. Comment on every function and about its functionality.
3. Mention comments where necessary such as comments with variables, loop, classes etc to increase code understandability.
4. Use understandable name of variables.
5. Proper indentation of code is essential.
6. Write a code in C++ language.
7. Make a Microsoft Word file and paste all of your C++ code with all possible screenshots of every task **outputs in Microsoft Word and submit word file. submit .cpp file.**
8. First think about statement problems and then write/draw your logic on copy.
9. After copy pencil work, code the problem statement on MS Studio C++ compiler.
10. At the end when you done your tasks, attached C++ created files in MS word file and make your submission on Google Classroom. (Make sure your submission is completed).
11. Please submit your file in this format **19F1234_L8**.
12. Do not submit your assignment after deadline. Late and email submission is not accepted.
13. Do not copy code from any source otherwise you will be penalized with negative marks.

Lab # 10 Task(2-weightages)

Problem: 1 | K largest (or smallest) elements in an array (Using Pointer) 10 Marks

Write an efficient program for printing k largest elements in an array. Elements in array can be in any order.

For example, if given array is [1, 23, 12, 9, 30, 2, 50] and you are asked for the largest 3 elements i.e., k = 3 then your program should print 50, 30 and 23.

Note pass array to function as parameter. Perform this task using pointer

Lab # 11 Task (3 weightages)

Problem: 2 | Write the code for Min heap 10 marks

Update the code given for Max Heap, convert this code for Max Heap.

Lab # 12 Task(2-weightages)

Problem: 3 | In Order Traversal in Max heap 10 marks

Write the code of in order traversal in Max heap (Array) using Recursion

😊 Best of luck