LAB4:Heap Sort

Lab. Exercises (LE)

LE4.1. Write a program to sort a given set of elements using the heap sort method and determine the time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator.

LE4.2. Write a program to Perform following operations on MAX HEAP and find the time complexity for each of them.

maximum(Arr) : It returns maximum element from the heap.

extract_maximum (Arr) - It removes and return the maximum element from the heap.

increase_val (Arr, i , val) - It increases the key of element stored at index i in heap to new value val.

insert_val (Arr, val) - It inserts the element with value val in heap.

Home Exercises (HE)

HE3.1 Write a program to find the kth minimum and maximum element in Heap.

HE3.2 Write a program to delete kth indexed element in Min heap and Max heap.

HE3.3 Given a string called TEXT with ‘n’ characters and another string called PATTERN with ‘m’ characters(m<=n) .Write a program which implements brute force string matching to search for a given pattern in the text. If thepattern is present then find the position of first occurrences of Pattern in that Text using brute force approach and also find time complexity of the algorithm.