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**GitHub link :https://github.com/vivekreddy4512**

1. **Explain the problem in terms of operating system concept? (Max 200 word)**

Ans**:**

They are collection of items same as stacks and queues The difference is in which item to be removed

In stacks Its the most recently added item, while in queues, it’s the first added item.

In priority queues we insert but, when we delete we delete items with the highest priority

It supports two operations insert and remove the maximum

There are a lot of applications of priority queue such as

Event-driven Simulation.

Data compression using Huffman coding.

Statistics (maintain the largest M values in a sequence).

We will start by the priority queue class We will construct a maximum priority queue where the item

with maximum value has the highest priority

The priority queue class has an array of generic type and an integer N that

represents the number of items in the array

Insert to the end and whenever you want the max item you need to scan all the elements.

**2.Write the algorithm for proposed solution of the assigned problem**?

Ans:

**Algorithm:**

heapify(array)

Root = array[0]

Largest = largest( array[0] , array [2\*0 + 1]. array[2\*0+2])

if(Root != Largest)

Swap(Root, Largest)

**3.Calculate complexity of implemented algorithm. (Student must specify complexity of each line of code along with overall complexity) Description (purpose of use):**

Ans:

**complexity:**

Unordered O(1) for inserting

O(M) for deleting

space complexity O(M)

Ordered:

O(M) for inserting

O(1) for deleting

space complexity O(M)

**Total time O(M \* N)**

**4.Explain all the constraints given in the problem. Attach the code snippet of the implemented constraint?**

**Ans:**

**5.** **If you have implemented any additional algorithm to support the solution, explain the need and usage of the same ?**

**Ans:**

**6.Explain the boundary conditions of the implemented code?**

**Ans:**

**7.Explain all the test cases applied on the solution of assigned problem?**

**Ans:**

**8.Have you made minimum 5 revisions of solution on GitHub?**

**Ans:**

**GitHub Profile Link:** https://github.com/vivekreddy4512

**GitHub Repository Link:** https://github.com/vivekreddy4512/OS-PROJECT/tree/master