

Find median in a stream

Hard Accuracy: 51.38% Submissions: 12523 Points: 8

Given an input stream of **N** integers. The task is to insert these numbers into a new stream and find the median of the stream formed by each insertion of **X** to the new stream.

Example 1:

Input:

`N = 4`

`X[] = 5,15,1,3`

Output:

5

10

5

4

Explanation:Flow in stream : 5, 15, 1, 3

5 goes to stream --> median 5 (5)

15 goes to stream --> median 10 (5,15)

1 goes to stream --> median 5 (5,15,1)

3 goes to stream --> median 4 (5,15,1 3)

Example 2:

Input:

`N = 3`

`X[] = 5,10,15`

Output:

5

7.5

10

Explanation:Flow in stream : 5, 10, 15

5 goes to stream --> median 5 (5)

10 goes to stream --> median 7.5 (5,10)

15 goes to stream --> median 10 (5,10,15)

Your Task:

You are required to complete the class Solution.

It should have 2 data members to represent 2 heaps.

It should have the following member functions:

1. **insertHeap()** which takes **x** as input and inserts it into the heap, the function should then call **balanceHeaps()** to balance the new heap.
2. **balanceHeaps()** does not take any arguments. It is supposed to balance the two heaps.
3. **getMedian()** does not take any arguments. It should return the current median of the stream.

Expected Time Complexity : $O(n \log n)$

Expected Auxilliary Space : $O(n)$

Constraints:

$1 \leq N \leq 10^6$

$1 \leq x \leq 10^6$

Company Tags



- Adobe
- Amazon
- Apple
- Belzabar
- D-E-Shaw
- Facebook
- Flipkart
- Google
- Intuit
- Microsoft
- Morgan Stanley
- Ola Cabs
- Oracle
- Samsung
- SAP Labs
- Yahoo

Topic Tags



- Heap
- Design-Pattern

Related Courses



- Must Do Interview Preparation
- DSA-Self Paced with Doubt Assistance
- Data Structures and Algorithms
- Amazon SDE Test Series
- Placement 100
- Complete Interview Preparation
- Complete Interview Preparation With Doubt Assistance
- 11 Weeks Workshop on Data Structures and Algorithms
- Microsoft SDE Test Series
- Geeks Classes - Live Session
- Advance DSA Course
- Competitive Programming - Live
- Google Test Series

Related Interview Experiences



- Intuit interview experience set 6
- Intuit interview experience set 7 3 5 years experienced
- Samsung research institute bangalore srib intern
- Google interview experience for sde
- Amazon interview experience for 6 months internship