Learn Heap

locked

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Problem Submissions Leaderboard Discussions

Create Min Heap data strucutre that supports following operations.

1) INSERT key

Insert the given key(integer value) into Min Heap and heapify(i.e, move it to the correct position) if required.

2) EXTRACT_MIN

Delete the current minimum element from your Min Heap and print it in new line. Heap contains atleast one element when this command asked.

3) LEVEL_ORDER

Print the level order traversal of Min Heap. Heap contains atleast one element when this command asked.

Input Format

First Line contains integer N as number of total commands. Next N subsequent lines contains any of the above three commands in the below format
1) INSERT key
2) EXTRACT_MIN
3) LEVEL_ORDER

Constraints

1 <= N <= 20,000
1 <= key <= 10^5

Output Format

For INSERT key command do not print anything.
For EXTRACT_MIN command print extracted minimum element from the heap in new line.
For LEVEL_ORDER command print all elements in the heap level by level with tab as delimiter.
Note : Every command output should start in new line.

Sample Input 0

```
7
INSERT 93
INSERT 21
INSERT 23
INSERT 85
EXTRACT_MIN
INSERT 43
LEVEL_ORDER
```

Sample Output 0

```
21
23 43 93 85
```

Explanation 0

First four INSERT commands insert given keys into Min Heap. After each and every command your data strucuture should abey Min Heap property(i.e., parent is less than all nodes in its left and right subtrees)

EXTRACT_MIN command deletes minimum element from heap and prints in the new line. As 21 is the minimum element, output in the first line is 21.

INSERT 43 command inserts 43 in to heap.

LEVEL_ORDER command prints all elements in the heap level by level with space as delimiter.

Submissions: 65
Max Score: 10
Difficulty: Medium

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Current Buffer (saved locally, editable) C++

```
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code