Programming Assignment 3

Submission Deadline: `5/9/2017 11:59 PM`

Programming Assignment 3 asks you to write and submit the following program.

1. Heaps

A C program that takes as input an integer N, followed by N integers in the next line. Then in the next line, input an integer T for the number of test cases/operations to be performed, followed by T integers signifying which operation to be performed.

Types of input are as follows:

0 - Print the max-heap
1 - Heapsort, then print the sorted array
2 [element] - Insert element into max-heap, then print the heap
3 - Remove/extract maximum element in max-heap, then print the heap
4 - Print maximum element of max-heap

Constraints:
```
N <= 50
-10000 <= Integers <= 10000
0 <= T <= 50
```

Sample Input 1	Sample Input 2
5	8
2 4 3 7 1	21 43 1 32 11 29 17 7
6	7
0	2 12
3	2 37
1	3
2 6	3
4	2 0
1	4
	1

Sample Output 1	Sample Output 2
7 4 3 2 1	43 32 29 21 11 1 17 7 12
4 2 3 1	43 37 29 21 32 1 17 7 12 11
1 2 3 4	37 32 29 21 11 1 17 7 12
6 4 3 1 2	32 21 29 12 11 1 17 7

```
6                                      32 21 29 12 11 1 17 7 0
 1 2 3 4 6                             32
                                       0 1 7 11 12 17 21 29 32
```

Note: The assignment submission should be a zip file containing exactly 1 file, in the format <roll_no>_<question_number>_<firstname>.c eg. 2014072_1_palash.c