Sort a linked list

Description

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2. Implement the linked list with the struct.

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Please write a sort program that can organize a given series of scores and output them in descending order.

For example, if the scores are `2 14 5 90 2 40 0`, please output `90 40 14 5 2 2`.

In the problem,you have to implement the add_num() function by using a linked list to insert the number.

Your program initially sets the list empty and performs many add_num() operations for each number until it finds 0.

After reading the scores, let's sort the linked list.

Here is a linked list sort example:

(You can use any algorithm to sort. This is just an example.)

Step 1: `2 -> 14 -> 5 -> 90 -> 2 -> 40`. Find the max value of the first `6` elements `90`, delete `90`, and push `90` to the tail of the linked list => `2 -> 14 -> 5 -> 2 -> 40 -> 90`

Step 2: `2 -> 14 -> 5 -> 2 -> 40 -> 90`. Find the max value of the first `5` elements `40`, delete `40`, and push `40` to the tail of the linked list => `2 -> 14 -> 5 -> 2 -> 90 -> 40`

Step 3: `2 -> 14 -> 5 -> 90 -> 2 -> 40`. Find the max value of the first `4` elements `14`, delete `14`, and push `14` to the tail of the linked list => `2 -> 5 -> 2 -> 90 -> 40 -> 14`

Step 4: `2 -> 5 -> 2 -> 90 -> 40 -> 14`. Find the max value of the first `3` elements `5`, delete `5`, and push `5` to the tail of the linked list => `2 -> 2 -> 90 -> 40 -> 14 -> 5`

Step 5: `2 -> 2 -> 90 -> 40 -> 14 -> 5`. Find the max value of the first `2` elements `2`, delete `2`, and push `2` to the tail of the linked list => `2 -> 90 -> 40 -> 14 -> 5 -> 2`

Step 6: `2 -> 90 -> 40 -> 14 -> 5 -> 2`. Find the max value of the first `1` elements `2`, delete `2`, and push `2` to the tail of the linked list => `90 -> 40 -> 14 -> 5 -> 2 -> 2`

After the operations, you get the sorted linked list. Please output it.

Input

Each case has a line, which contains `N` integers `a_i` and ends with `0`.

Constraints:

- 0 <= `N` <= 1000
- 1 <= `a_i` <= 1000000

Output

Please output the sorted array in descending order, separating the array elements by spaces.

Note: there is no space after the last element.

Sample Input 1

```
2 14 5 90 2 40 0
```

Sample Output 1

```
90 40 14 5 2 2
```

Hint

```
# include <stdio.h>
# include <stdlib.h>

typedef struct node{
    int data;
    struct node* next;
} Node;

Node *head = NULL;
Node *tail = NULL;

void add_num(int d){
        // TODO
}

void printList(){
        // TODO
}

int main(){
        // Read input to linked list

        // Sort the linked list

        // Output the linked list
        printList();
    return 0;
}
```


Information

ID	final_4
Time Limit	1000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	aster
Level	Low
Score	100
Tags	Show

Statistic Details