File - C:\Users\Andrea D'Agg\CLionProjects\heapSort\main.c

```c
#include<stdio.h>
void create(int []);
void down_adjust(int [], int);
int main() {
    int heap[30], n, i, last, temp;

    printf("Enter no. of elements:");
    scanf("%d", &n);

    printf("\nEnter elements:");
    for (i = 1; i <= n; i++)
        scanf("%d", &heap[i]);

    //create a heap
    heap[0] = n;
    create(heap);

    //sorting
    while (heap[0] > 1) {
        //swap heap[1] and heap[last]
        last = heap[0];
        temp = heap[1];
        heap[1] = heap[last];
        heap[last] = temp;
        heap[0]--;
        down_adjust(heap, 1);
    }

    //print sorted data
    printf("\nArray after sorting:\n");
    for (i = 1; i <= n; i++)
        printf("%d ", heap[i]);
    return 0;
}

void create(int heap[]) {
    int i, n;
    n = heap[0]; //no. of elements

    for (i = n / 2; i >= 1; i--)
        down_adjust(heap, i);
}

void down_adjust(int heap[], int i) {
    int j, temp, n, flag = 1;
    n = heap[0];

    while (2 * i <= n && flag == 1) {
        j = 2 * i;    //j points to left child
        if (j + 1 <= n && heap[j + 1] > heap[j])
            j = j + 1;
        if (heap[i] > heap[j])
            flag = 0;
        else {
            temp = heap[i];
            heap[i] = heap[j];
            heap[j] = temp;
            i = j;
        }
    }
}
```