

Heap sort

```
#include <stdio.h>

main()
{
    int a[50],i,n,c,root,t,j;

    printf("Enter total number of elements:");

    scanf("%d", &n);

    printf("Enter the elements:\n");

    for(i = 0; i < n; i++)
        scanf("%d", &a[i]);

    j=n;

    while(j>0)
    {

        for(i=1;i<j;i++)
        {

            c=i;

do
        {
            root=(c-1)/2;
            if(a[root] < a[c])
            {
                t=a[root];
                a[root]= a[c];
                a[c]=t;
            }
            c=root;
        }while(c!=0);
    }
```

```

        printf("The MAX - Heap array:\n");

        for(i = 0; i < j; i++)

            printf("%d\t", a[i]);


t=a[0];
a[0]=a[j-1];
a[j-1]=t;


j--;
}


printf("\nAfter Heap sort:\n");

for(i = 0; i < n; i++)

    printf("%d\t", a[i]);

}

```

Output:

```

C:\Users\91911\OneDrive\Documents\Exams\ptr\heap sort.exe
Enter total number of elements:5
Enter the elements:
3
3
4
1
5
The MAX - Heap array:
5 4 3 3 1 The MAX - Heap array:
4 3 3 1 The MAX - Heap array:
3 1 3 The MAX - Heap array:
3 1 The MAX - Heap array:
1
After Heap sort:
1 3 3 4 5
Process returned 0 (0x0) execution time : 12.879 s
Press any key to continue.

```