

Heap sort

```
#include<stdio.h>

void heap_adj(int a[],int n)
{
    int i,j,item;

    j=0;

    item=a[j];

    i=2*j+1;

    while(i<n)
    {
        if((i+1)<=n-1)
        {
            if(a[i]<a[i+1])

                i++;
        }

        if(item<a[i])
        {
            a[j]=a[i];

            j=i;

            i=2*j+1;
        }

        else

            break;
    }
}
```

```

    a[j]=item;
}

void heap_const(int a[],int n)
{
    int i,j,k,item;
    for(k=0;k<n;k++)
    {
        item=a[k];

        i=k;
        j=(i-1)/2;
        while(i>0 && item>a[j])
        {
            a[i]=a[j];

            i=j;
            j=(i-1)/2;
        }
        a[i]=item;
    }
}

void heapsort(int a[],int n)
{
    int i,temp;

    heap_const(a,n);

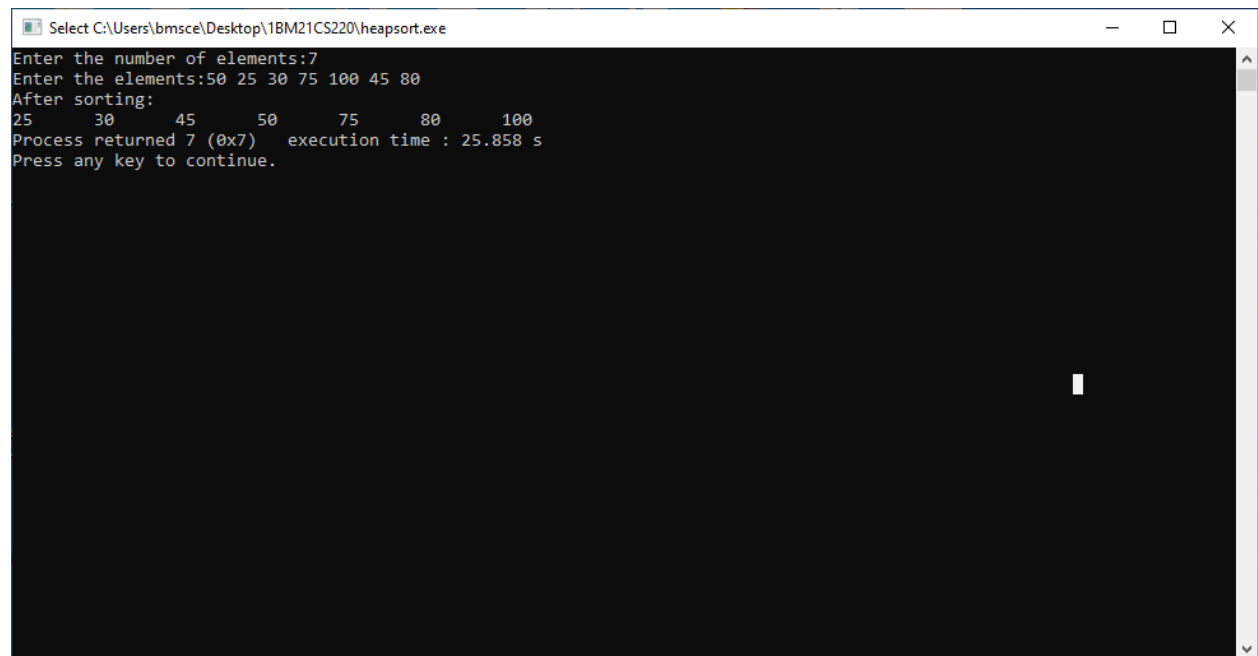
    for(i=n-1;i>0;i--)
    {

```

```
        temp=a[i];
        a[i]=a[0];
        a[0]=temp;
        heap_adj(a,i);
    }
}

void main()
{
    int n,i;
    printf("Enter the number of elements:");
    scanf("%d",&n);
    int a[n];
    printf("Enter the elements:");
    for(i=0;i<n;i++)
        scanf("%d",&a[i]);
    heapsort(a,n);
    printf("After sorting:\n");
    for(i=0;i<n;i++)
        printf("%d\t",a[i]);
```

}



```
Select C:\Users\bmsce\Desktop\1BM21CS220\heapsort.exe
Enter the number of elements:7
Enter the elements:50 25 30 75 100 45 80
After sorting:
25    30    45    50    75    80    100
Process returned 7 (0x7)  execution time : 25.858 s
Press any key to continue.
```