Assignment-11

Implement the Heap Sort algorithm in Java to sort an array of integers.

```
public class HeapSortDemo {

	static void heapSort(int arr[]) {
		int N=arr.length;

		for(int i=N/2-1;i>=0;i--) {
			heapify(arr,N,i);
		}

		for(int i=N-1;i>0;i--) {
			int temp=arr[0];
			arr[0]=arr[i];
			arr[i]=temp;
			heapify(arr,i,0);
		}
	}

	private static void heapify(int [] arr,int N, int i) {
		int largest=i;
```

```
        int l=2*i+1;
        int r=2*i+2;

        if(l<N && arr[l]>arr[largest])
                largest=l;

        if(r<N && arr[r]>arr[largest])
                largest=r;

        if(largest!=i) {
                int swap=arr[i];
                arr[i]=arr[largest];
                arr[largest]=swap;
                heapify(arr,N,largest);
        }
}

public static void printArr(int [] arr) {
        for(int i=0;i<arr.length;++i) {
                System.out.print(arr[i]+" ");
        }
        System.out.println();
}
```

```
    public static void main(String[] args) {

        int arr[]= {13,12,14,6,7,8};

        heapSort(arr);
        System.out.println("\n Sorted Array is : ");
        printArr(arr);
    }

}
```