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Class: SE-A

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Practical No. 9

```
import java.util.*;

public class heap
{
 private static int N;
   public static void sort(int arr[]){
  heapMethod(arr);
       for (int i = N; i > 0; i--){
           swap(arr,0, i);
           N = N-1;
           heap(arr, 0);
       }
   }
   public static void heapMethod(int arr[]){
       N = arr.length-1;
       for (int i = N/2; i >= 0; i--)
           heap(arr, i);
   }
   public static void heap(int arr[], int i){
       int left = 2*i ;
       int right = 2*i + 1;
       int max = i;
       if (left <= N && arr[left] > arr[i])
           max = left;
  if (right <= N && arr[right] > arr[max])
           max = right;
       if (max != i){
           swap(arr, i, max);
           heap(arr, max);
       }
   }
   public static void swap(int arr[], int i, int j){
       int tmp = arr[i];
       arr[i] = arr[j];
       arr[j] = tmp;
   }
   public static void main(String[] args) {
       Scanner in = new Scanner( System.in );
       int n;
```

```
        System.out.println("Enter the number of elements to be sorted:");
        n = in.nextInt();
        int arr[] = new int[ n ];
        System.out.println("Enter "+ n +" integer elements");
        for (int i = 0; i < n; i++)
            arr[i] = in.nextInt();
        sort(arr);
        System.out.println("After sorting ");
        for (int i = 0; i < n; i++)
            System.out.println(arr[i]+" ");
        System.out.println();
    }
}
```

Output:

```
Enter the number of elements to be sorted:
5
Enter 5 integer elements
12
10
6
8
23
After sorting
6
8
10
12
23
```