DS WEEK 11 LAB RECORD

1)
AIM: To develop an application to implement heap sort to sort data in ascending order

CODE:
```
def heapify(arr, n, i):
        largest = i
        l = 2 * i + 1
        r = 2 * i + 2
        if l < n and arr[i] < arr[l]:
                largest = l
        if r < n and arr[largest] < arr[r]:
                largest = r
        if largest != i:
                arr[i],arr[largest] = arr[largest],arr[i]
                heapify(arr, n, largest)
def heapSort(arr):
        n = len(arr)
        for i in range(n // 2 - 1, -1, -1):
                heapify(arr, n, i)
        for i in range(n-1, 0, -1):
                arr[i], arr[0] = arr[0], arr[i]
                heapify(arr, i, 0)
arr = [int(i) for i in  input("Enter the element").split()]
heapSort(arr)
n = len(arr)
print ("Sorted array is")
for i in range(n):
        print ("%d" %arr[i])
```

OUTPUT:

```
Enter the elements 12 98 42 10 6 33 100
Sorted array is
6
10
12
33
42
98
100


...Program finished with exit code 0
Press ENTER to exit console.
```