

Department of Computer Science

Lecture Outline

Data Structures – 4th CSE

Lecture- 17: Heaps

All Programming to be done in C language.

Classroom Lectures:

Lecture 17 - Binary Heaps

<https://youtu.be/dDRGupSVVHE>

1. Heaps	<ul style="list-style-type: none">• Heap Definition• Heap Structure Property• Heap Order Property (Min Heap, Max Heap)• Terminology (Percolate up and Percolate down)
2. Implementation	<ul style="list-style-type: none">• Array Implementation• Insert in a Heap (Percolate up)• Deletion in a Heap (Percolate down)
3. Applications of Heap	<ul style="list-style-type: none">• Priority Queue• Heap Sort• Implementing Priority Queue in graph Algorithms like Prim's and Dijkstra's Algorithm
4. Resource Links	<ul style="list-style-type: none">• https://www.geeksforgeeks.org/heap-data-structure/• https://www.geeksforgeeks.org/applications-of-heap-data-structure/• https://www.hackerearth.com/practice/data-structures/trees/heapspriority-queues/tutorial/• https://www.sanfoundry.com/c-program-implement-heap/• https://www.geeksforgeeks.org/binary-heap/