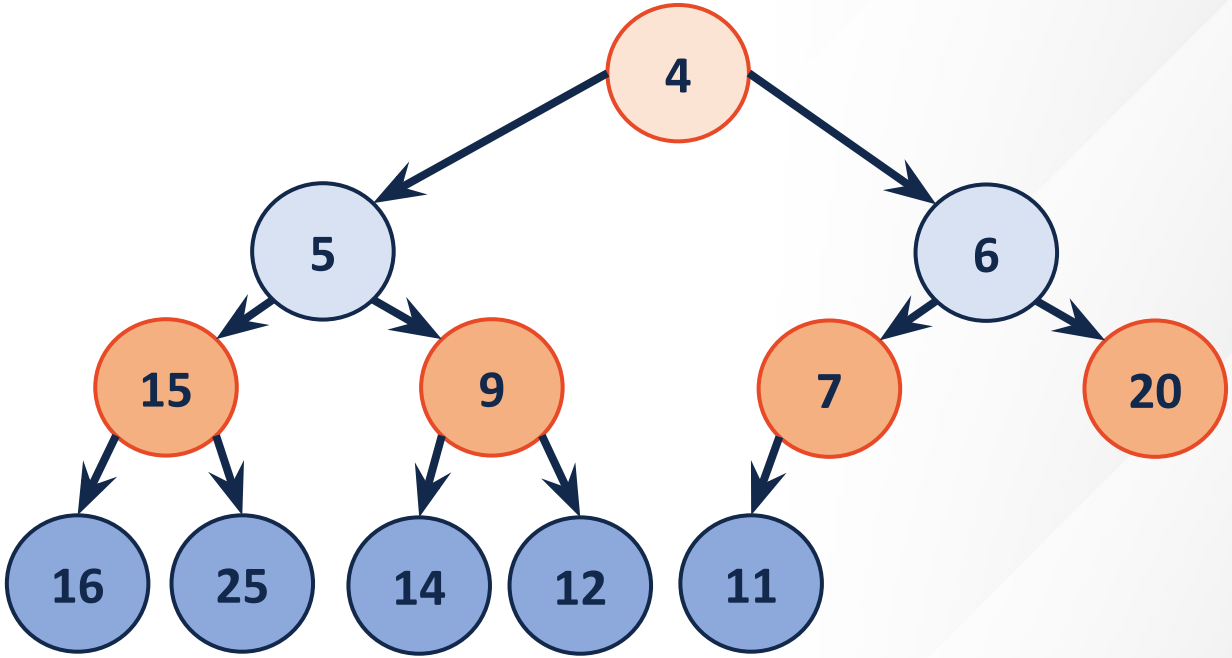
ILLINOIS

Heap

Learning Objectives

1. Understand what a heap is
2. Compute the child and parent for every element in a heap for both 0 and 1 index

Heap Example



Min-Heap Definition

A complete binary tree T is a min-heap if:

- **T = {}** or

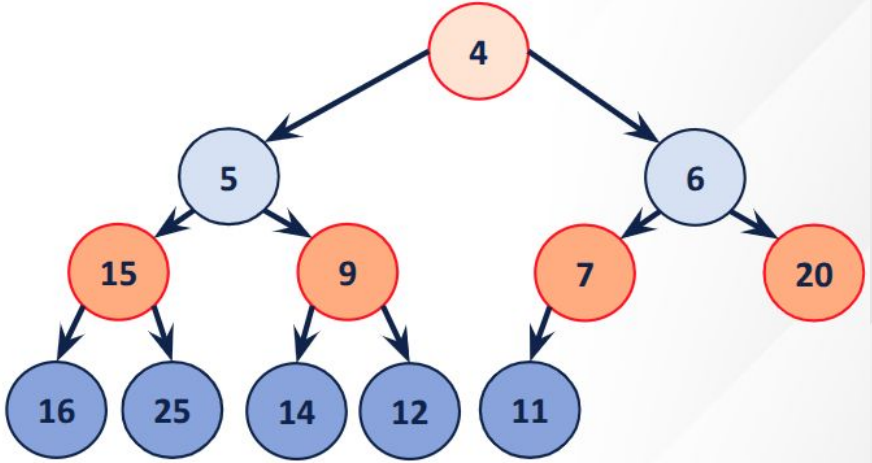
- **T = {r, T_L, T_R}**, where

  r is less than the

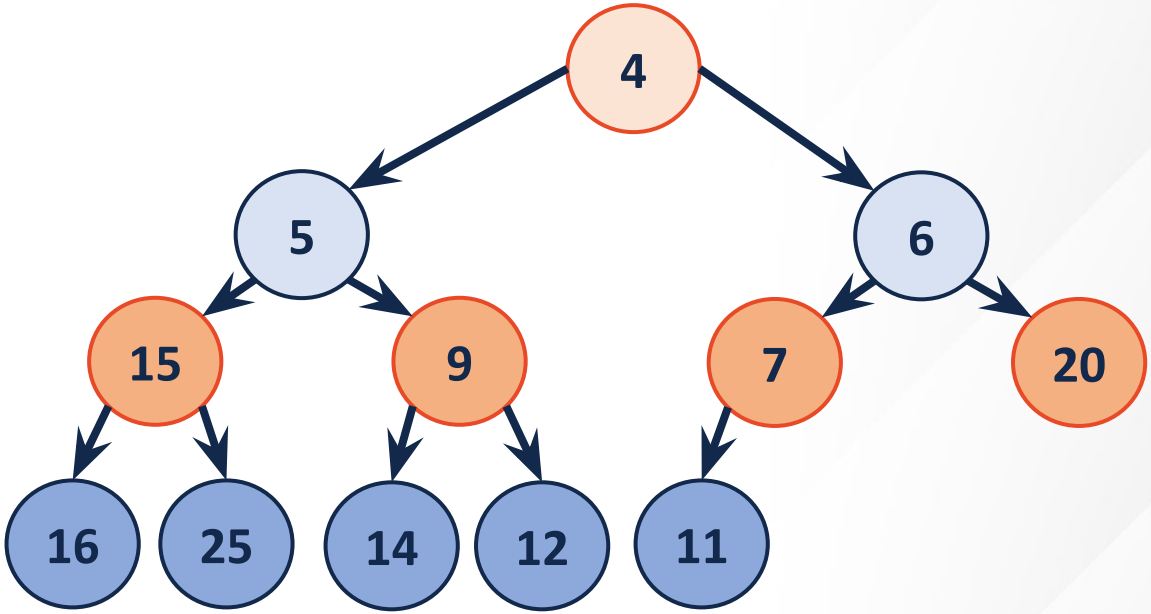
  roots of {T_L, T_R} and

  {T_L, T_R} are

  min-heaps.

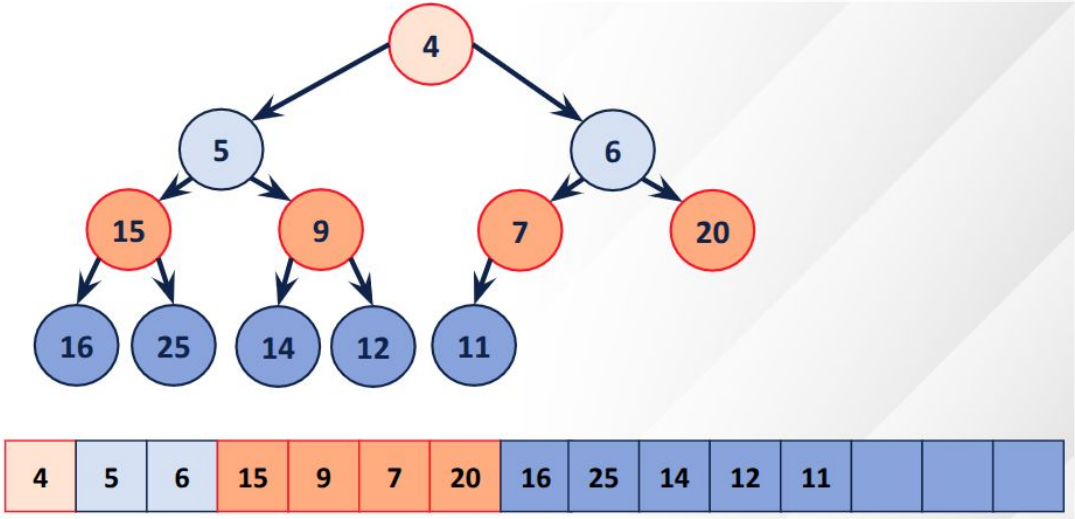


Min Heap Implementation



4	5	6	15	9	7	20	16	25	14	12	11			

Traversing a Heap: 1-index



Traversing a Heap: 0-index