PRIORITY QUEUES WITH BINARY HEAPS

Priority Queues with Binary Heaps

- One important variation of a queue is called a **priority queue**.
- A priority queue acts like a queue in that you dequeue an item by removing it from the front.
- However, in a priority queue the logical order of items inside a queue is determined by their priority.

Priority Queues with Binary Heaps

- The highest priority items are at the front of the queue and the lowest priority items are at the back.
- When you enqueue an item on a priority queue, the new item may move all the way to the front.

Binary Heaps

- The classic way to implement a priority queue is using a data structure called a **binary heap**.
- A binary heap will allow us both enqueue and dequeue items in O(log**n**).

Binary Heaps

- The binary heap has two common variations: the **min heap**, in which the smallest key is always at the front, and the **max heap**, in which the largest key value is always at the front.
- In this section we will implement the min heap.

Binary Heaps

- In the next lecture we will discuss the implementation and then have a Jupyter Notebook as a resource.