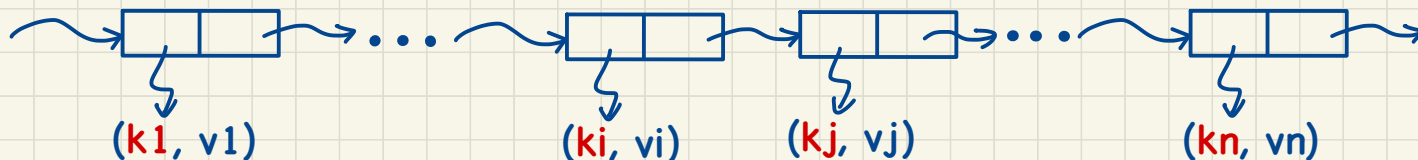


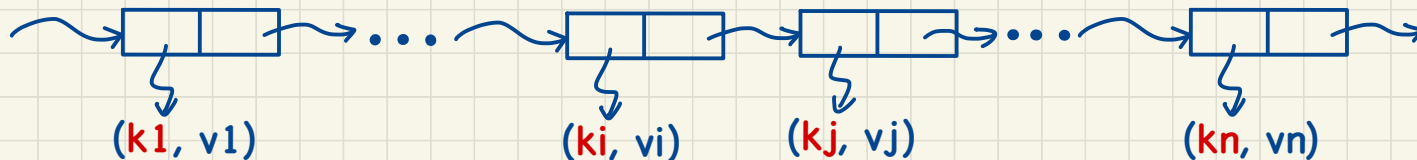
List-Based Implementations of Priority Queue (PQ)

PQ Method	List Method	
	SORTED LIST	UNSORTED LIST
size	list.size	
isEmpty	list.isEmpty	
min	list.first	search min
insert	insert to "right" spot	insert to front
removeMin	list.removeFirst	search min and remove

Approach 1: Sorted List

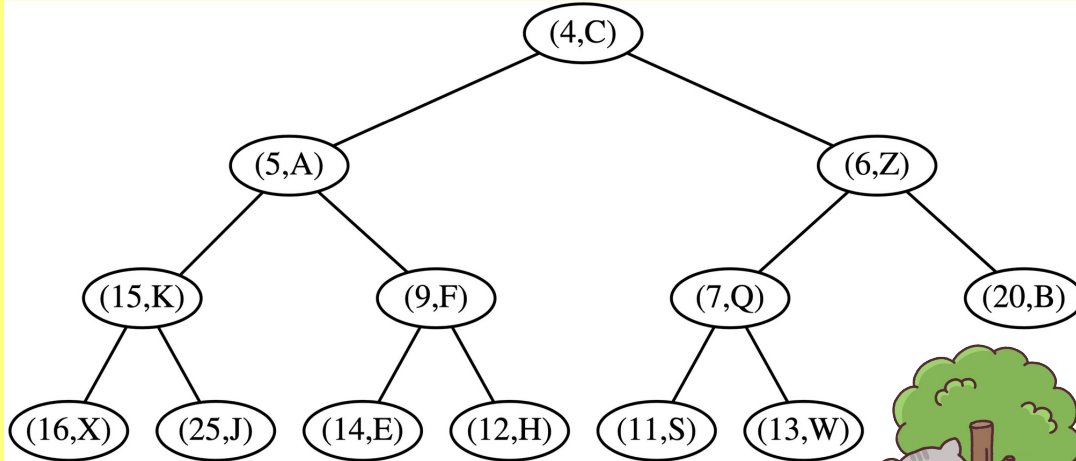


Approach 2: Unsorted List



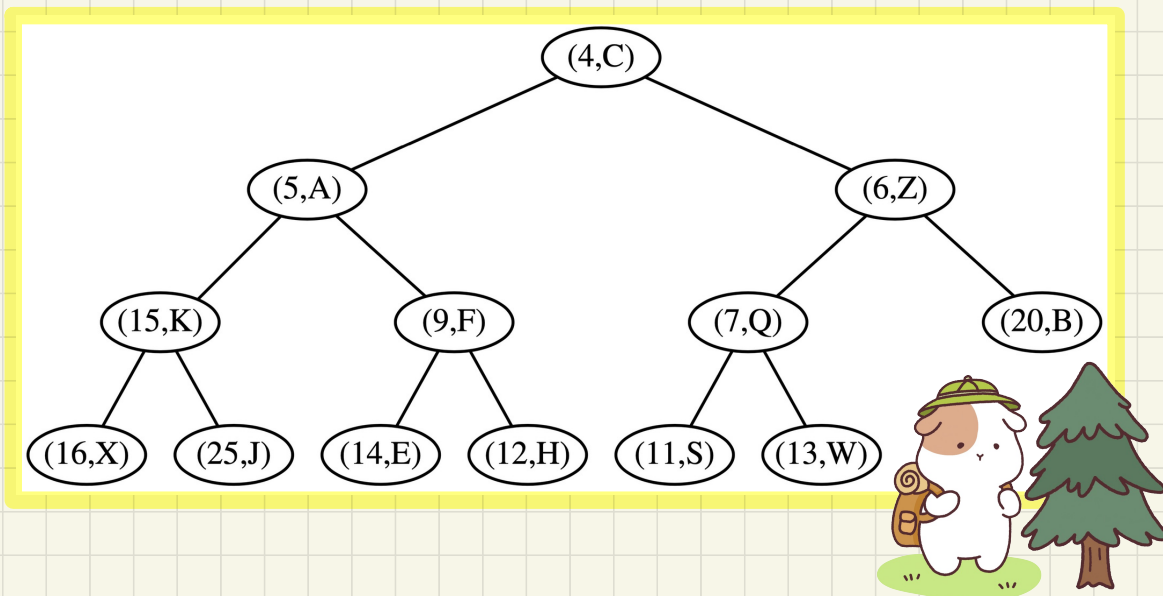
Heaps: Structural Properties of Nodes

Property: The tree is a complete Binary Tree



Heaps: Relational Properties of Keys

Property: Each non-root node n is s.t. $\text{key}(n) \geq \text{key}(\text{parent}(n))$

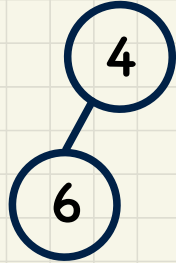


Example **Heaps**

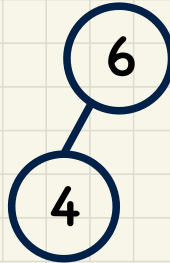
Example 1



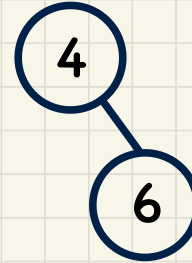
Example 2



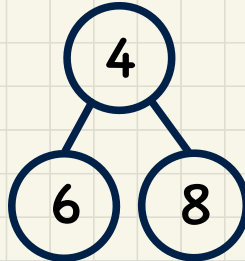
Example 3



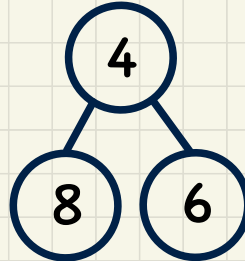
Example 4



Example 5

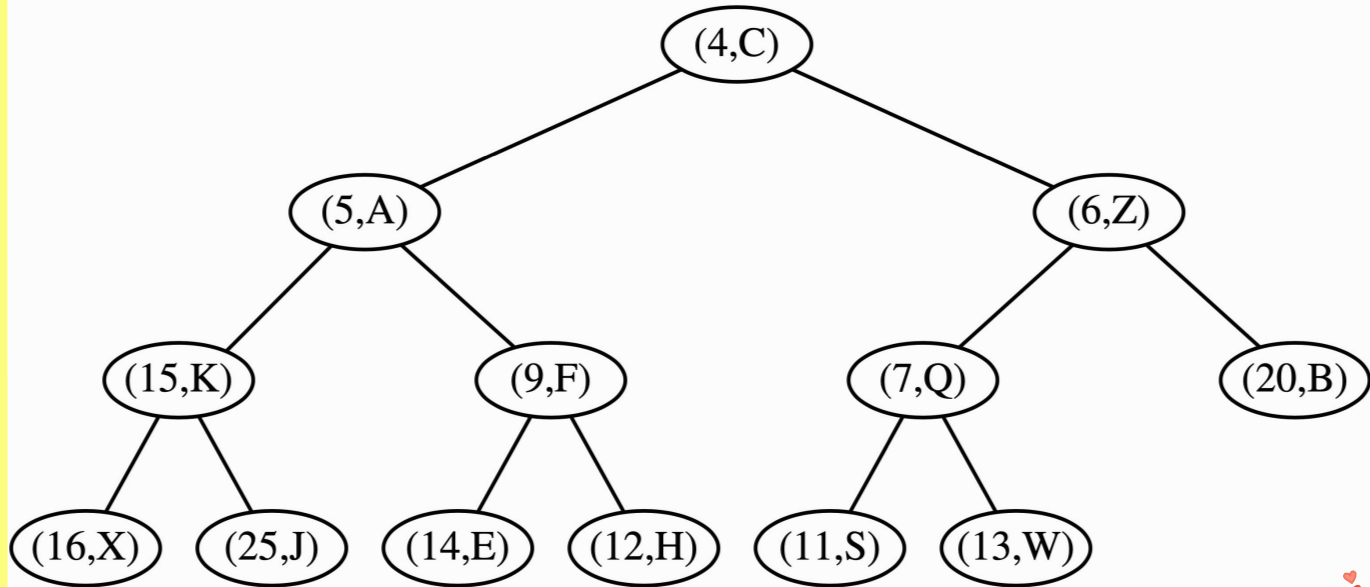


Example 6



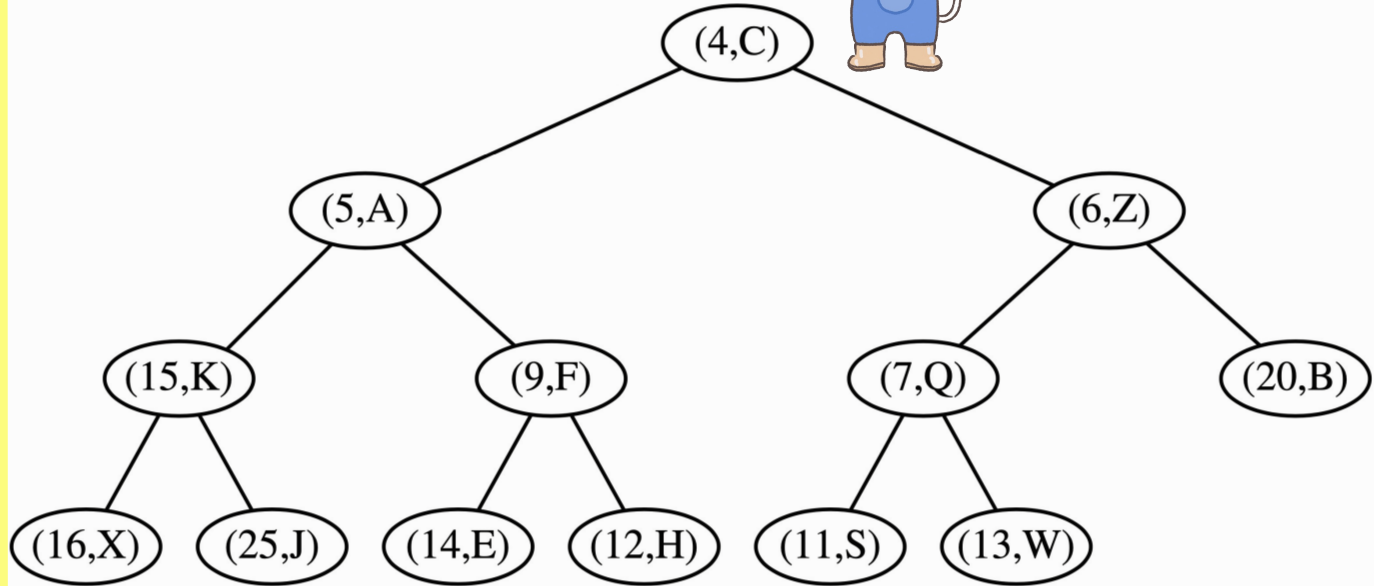
Heap Operations: Insertion

Insert a **new entry** (2, T)



Heap Operations: Deletion

Delete the root/minimum



Heap Sort: Ideas

