32 Lecture - CS301

Important Subjective

- 1. What is the purpose of the percolateDown method in a heap data structure?

 Answer: The percolateDown method is used to maintain the heap property after removing the root element from a heap data structure.
- 2. What is the time complexity of the percolateDown method?

 Answer: The time complexity of the percolateDown method is O(log n), where n is the number of elements in the heap.
- 3. How does the percolateDown method work?

 Answer: The percolateDown method works by swapping the root element with its larger child until the heap property is restored.
- 4. What happens if the root element has no children in the percolateDown method? Answer: If the root element has no children in the percolateDown method, the heap is left unchanged.
- 5. **Is the percolateDown method used in the HeapSort algorithm?**Answer: Yes, the percolateDown method is used in the HeapSort algorithm to sort the elements in a heap data structure.
- 6. **Is the percolateDown method a recursive algorithm?**Answer: Yes, the percolateDown method is typically implemented as a recursive algorithm.
- 7. How many elements are swapped at most in the percolateDown method?

 Answer: At most, two elements are swapped in the percolateDown method.
- 8. Can the percolateDown method be used in both min and max heaps?
 Answer: Yes, the percolateDown method can be used in both min and max heaps.
- Does the percolateDown method modify the size of the heap data structure?
 Answer: Yes, the percolateDown method can modify the size of the heap data structure by removing the root element.
- 10. What is the worst-case time complexity of the percolateDown method?

 Answer: The worst-case time complexity of the percolateDown method is O(log n), where n is the number of elements in the heap.