3 Lecture - CS301

Important Mcqs

- 1. In a linked list, each node contains:
 - a. A value and a pointer to the previous node
 - b. A value and a pointer to the next node
 - c. A key and a value
 - d. A key and a pointer to the next node

Answer: b

- 2. The first node in a linked list is called the:
 - a. Head
 - b. Tail
 - c. Root
 - d. Leaf

Answer: a

- 3. In computer memory, each node in a linked list is typically represented as:
 - a. A block of memory that contains the value and a pointer to the previous node
 - b. A block of memory that contains the value and a pointer to the next node
 - c. A hash table that contains the key and the value
 - d. An array that contains the key and a pointer to the next node

Answer: b

- 4. What is the time complexity of inserting a node at the beginning of a linked list?
 - a. O(1)
 - b. O(n)
 - c. O(log n)
 - d. O(n log n)

Answer: a

- 5. What is the time complexity of inserting a node at the end of a linked list?
 - a. O(1)
 - b. O(n)
 - c. O(log n)
 - d. O(n log n)

Answer: b

- 6. Deleting a node from a linked list requires updating the:
 - a. Previous node's pointer to the next node
 - b. Next node's pointer to the previous node
 - c. Current node's value to NULL
 - d. None of the above

Answer: a

- 7. Traversing a linked list means:
 - a. Deleting a node from the list

- b. Inserting a node into the list
- c. Moving through the list from the head to the tail
- d. Sorting the list in ascending order

Answer: c

8. Which of the following is a disadvantage of linked lists compared to arrays?

- a. Linked lists allow for efficient insertion and deletion of nodes
- b. Linked lists use memory flexibly
- c. Linked lists can grow dynamically
- d. Linked lists have slow access times for specific nodes

Answer: d

9. Which of the following operations can be performed in constant time on a linked list?

- a. Finding the maximum value in the list
- b. Inserting a node at the end of the list
- c. Removing the head node from the list
- d. Sorting the list in descending order

Answer: c

10. What is the space complexity of a linked list?

- a. O(n)
- b. O(log n)
- c. O(1)
- d. O(n log n)

Answer: a