

Linked List Coding Questions

You said:



5 most asked coding question on linked list in java and give code

ChatGPT said:



Here are 5 commonly asked Linked List coding questions in Java along with their implementations:

1. Reverse a Linked List

Problem: Reverse a given singly linked list.

java

```
class Node {
    int data;
    Node next;
    Node(int d) {
        data = d;
        next = null;
    }
}

class LinkedList {
    Node head;

    Node reverse(Node head) {
        Node prev = null;
        Node current = head;
        Node next = null;
        while (current != null) {
            next = current.next;
            current.next = prev;
            prev = current;
            current = next;
        }
        head = prev;
        return head;
    }
}
```

2. Detect a Cycle in a Linked List (Floyd's Cycle Detection)

Problem: Check if a linked list contains a cycle.

java

```
class LinkedList {
    Node head;
```

```
boolean hasCycle(Node head) {
    if (head == null || head.next == null) return false;

    Node slow = head;
    Node fast = head;

    while (fast != null && fast.next != null) {
        slow = slow.next;
        fast = fast.next.next;
        if (slow == fast) return true;
    }
    return false;
}
```

3. Merge Two Sorted Linked Lists

Problem: Merge two sorted linked lists into one sorted list.

java

```
class LinkedList {
    Node head;

    Node mergeTwoLists(Node l1, Node l2) {
        if (l1 == null) return l2;
        if (l2 == null) return l1;

        if (l1.data < l2.data) {
            l1.next = mergeTwoLists(l1.next, l2);
            return l1;
        } else {
            l2.next = mergeTwoLists(l1, l2.next);
            return l2;
        }
    }
}
```

4. Find the Middle of a Linked List

Problem: Find the middle node of the linked list.

java

```
class LinkedList {
    Node head;

    Node findMiddle(Node head) {
        if (head == null) return null;

        Node slow = head;
        Node fast = head;

        while (fast != null && fast.next != null) {
            slow = slow.next;
            fast = fast.next.next;
        }

        return slow; // Middle node
    }
}
```

5. Remove Nth Node from End of List

Problem: Remove the Nth node from the end of the list.

```
java
```

```
class LinkedList {
    Node head;

    Node removeNthFromEnd(Node head, int n) {
        Node dummy = new Node(0);
        dummy.next = head;
        Node first = dummy;
        Node second = dummy;

        for (int i = 1; i <= n + 1; i++) {
            first = first.next;
        }

        while (first != null) {
            first = first.next;
            second = second.next;
        }

        second.next = second.next.next;
        return dummy.next;
    }
}
```

These questions cover various concepts such as list traversal, recursion, two-pointer technique, and manipulation of pointers.

ChatGPT can make mistakes. Check important info.