Program for Intersection of Two Linked Lists

```
class ListNode {
    int val;
    ListNode next;

    ListNode(int val) {
        this.val = val;
        this.next = null;
    }
}

public class IntersectionOfLinkedLists {

    public ListNode getIntersectionNode(ListNode list1, ListNode list2) {
        if (list1 == null || list2 == null) {
            return null;
        }

        ListNode a = list1;
        ListNode b = list2;

        // Traverse both linked lists until they meet or reach the end
        while (a != b) {
            if (a == null) {
                a = list2;
            } else {
                a = a.next;
            }

            if (b == null) {
                b = list1;
            } else {
                b = b.next;
            }
        }

        return a; // Returns the intersection point (or null if no intersection)
    }

    public static void main(String[] args) {
        IntersectionOfLinkedLists ls = new IntersectionOfLinkedLists();

        // Create two linked lists
        ListNode node = new ListNode(8);
        node.next = new ListNode(4);
        node.next.next = new ListNode(5);

        ListNode list1 = new ListNode(9);
        list1.next = new ListNode(1);
        list1.next.next = node;

        ListNode list2 = new ListNode(3);
        list2.next = new ListNode(0);
```

```
        list2.next.next = new ListNode(7);
        list2.next.next.next = node;

        // Find the intersection node
        ListNode result = ls.getIntersectionNode(list1,list2);

        if (result != null) {
            System.out.println("Intersection Node Value: " + result.val);
        } else {
            System.out.println("No Intersection Point Found");
        }
    }
}
```

OUTPUT

Intersection Node Value: 8

Program for Factorial Trailing Zeroes

```java
public class TrailingZeroes {

        // Method to calculate the number of trailing zeroes in n!
        public static int trailingZeroes(int n) {
            int count = 0;
            // Keep dividing n by 5 until n becomes 0
            while (n > 0) {
                n /= 5; // Divide n by 5 to count the number of factors of 5
                if(n == 1)
                {
                    n=0;
                }
                count += n; // Add the count of factors of 5 to the total count
            }
            return count;
        }

        public static void main(String[] args) {
            int n = 30;
            int result =trailingZeroes(n);
            System.out.println("OUTPUT : " + n + "! : " + result);
        }
    }
```

OUTPUT

OUTPUT : 30! : 6