Search in a Linked List (Iterative and Recursive)

Write a function that searches a given key 'x' in a given singly linked list.

Iterative Solution:

| C++ | Java |

```java
import java.util.*;
import java.io.*;
import java.lang.*;

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

class Test {

    public static void main(String args[])
    {
        Node head=new Node(10);
        head.next=new Node(20);
        head.next.next=new Node(30);
        printlist(head);
        System.out.println("Position of element in Linked List: "+search(

    }

    static int search(Node head, int x){
        int pos=1;
        Node curr=head;
```

```java
            return pos;
```

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```java
            }
        }
        return -1;
    }
    public static void printlist(Node head){
        Node curr=head;
        while(curr!=null){
        System.out.print(curr.data+" ");
        curr=curr.next;
    }System.out.println();
    }
}
```

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Output

```
10 20 30
Position of element in Linked List: 2
```

Recursive Solution:

C++ **Java**

```java
 import java.util.*;
import java.io.*;
import java.lang.*;

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

Menu

```java
        public static void main(String args[])

            head.next.next=new Node(30);
            printlist(head);
            System.out.println("Position of element in Linked List: "+search(

        }

        static int search(Node head, int x){
            if(head==null)return -1;
            if(head.data==x)return 1;
            else{
                int res=search(head.next,x);
                if(res==-1)return -1;
                else return res+1;
            }
        }
        public static void printlist(Node head){
            Node curr=head;
            while(curr!=null){
            System.out.print(curr.data+" ");
            curr=curr.next;
        }System.out.println();
        }
    }
```

Output

```
10 20 30
Position of element in Linked List: 2
```

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25 of **132** Complete. (19%)

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