

Write a program to check if given linked list has a loop or not.

```
import java.util.*;

public class LinkedList {

    static Node head;

    static class Node {

        int data;

        Node next;

        Node(int d)

        {

            data = d;

            next = null;

        }

    }

    static public void push(int new_data)

    {

        Node new_node = new Node(new_data);

        new_node.next = head;

        head = new_node;

    }

    static boolean detectLoop(Node h)

    {

        HashSet<Node> s = new HashSet<Node>();

        while (h != null) {

            if (s.contains(h))
```

```

        return true;

        s.add(h);

        h = h.next;
    }

    return false;
}

public static void main(String[] args)
{
    LinkedList llist = new LinkedList();

    llist.push(20);

    llist.push(4);

    llist.push(15);

    llist.push(10);

    llist.head.next.next.next.next = llist.head;

    if (detectLoop(head))

        System.out.println("Loop found");

    else

        System.out.println("No Loop");

}
}

```

OUTPUT:

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```
5- static class Node {
6-     int data;
7-     Node next;
8-     Node(int d)
9-     {
10-         data = d;
11-         next = null;
12-     }
13- }
14- static public void push(int new_data)
15- {
16-     Node new_node = new Node(new_data);
17-     new_node.next = head;
18-     head = new_node;
19- }
20- static boolean detectLoop(Node h)
21- {
22-     HashSet<Node> s = new HashSet<Node>();
23-     while (h != null) {
24-         if (s.contains(h))
25-             return true;
26-         s.add(h);
27-         h = h.next;
28-     }
29-     return false;
30- }
31- }
32- }
33- }
34- public static void main(String[] args)
35- {
36-     LinkedList llist = new LinkedList();
37-     llist.push(20);
38-     llist.push(4);
39-     llist.push(15);
40-     llist.push(10);
41-     llist.head.next.next.next.next = llist.head;
42-     if (detectLoop(head))
43-         System.out.println("Loop found");
44-     else
45-         System.out.println("No Loop");
46- }
47- }
48- }
```

Execute Mode, Version, Inputs & Arguments

CommandLine Arguments

JDK 11.0.4

☐ Interactive

[Execute](#) [...](#) [⌵](#)

Result

compiled and executed in 0.959 sec(s)

```
Loop found
```

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