

LINKED LIST MIDDLE ELEMENT

```
package com.wipro;

class ListNode {
    int value;
    ListNode next;

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

public class LinkedListMiddle {
    public static ListNode findMiddle(ListNode head) {
        if (head == null) {
            return null;
        }

        ListNode slow = head;
        ListNode fast = head;

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

        return slow;
    }

    public static void main(String[] args) {
        // Create a linked list 1 -> 2 -> 3 -> 4 -> 5
        ListNode node1 = new ListNode(1);
        ListNode node2 = new ListNode(2);
        ListNode node3 = new ListNode(3);
        ListNode node4 = new ListNode(4);
        ListNode node5 = new ListNode(5);
        node1.next = node2;
        node2.next = node3;
        node3.next = node4;
        node4.next = node5;

        ListNode middle = findMiddle(node1);
        if (middle != null) {
            System.out.println("The middle element is: " + middle.value);
        } else {
            System.out.println("The list is empty.");
        }
    }
}
```

```

1 package com.wipro;
2
3
4 class ListNode {
5     int value;
6     ListNode next;
7
8     ListNode(int value) {
9         this.value = value;
10        this.next = null;
11    }
12 }
13
14 public class LinkedListMiddle {
15     public static ListNode findMiddle(ListNode head) {
16         if (head == null) {
17             return null;
18         }
19
20         ListNode slow = head;
21         ListNode fast = head;
22
23         while (fast != null && fast.next != null) {
24             slow = slow.next;
25             fast = fast.next.next;
26         }
27
28         return slow;
29     }

```

```

com.wipro
└─ ListNode
   ├── value: int
   ├── next: ListNode
   └─ ListNode(int)
└─ LinkedListMiddle
   ├── findMiddle(ListNode): ListN
   └─ main(String[]): void

```

Markers Properties Terminal Console Coverage

:terminated> LinkedListMiddle [Java Application] C:\Users\Nikita\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (Jun 4, 2024)
The middle element is: 3