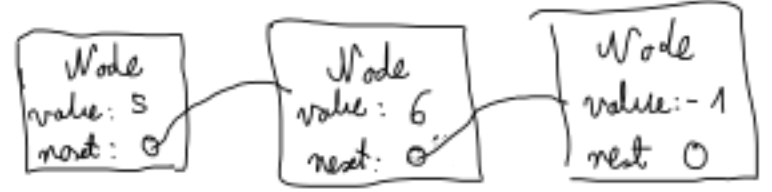


Hallo Konstantin!

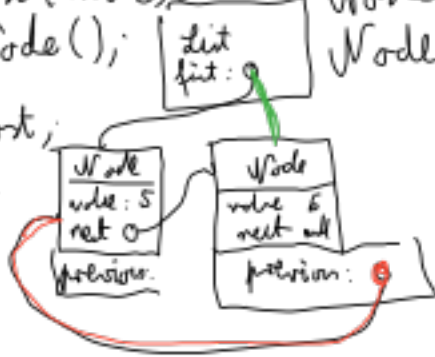
1 | 3 | 4 | -1 | -3

```
public static int[] addElement(int[] a, int e) {
    int[] r = new int[a.length + 1];
    for (int i = 0; i < a.length; i++) {
        r[i] = a[i];
    }
    r[r.length - 1] = e;
    return r;
}
```



```
class List {
    Node first;
    private int size = 0;
    public void addFirst(int e) {
        Node n = new Node();
        n.value = e;
        n.next = this.first;
        this.first.previous = n;
        this.first = n;
        ++size;
    }
}
```

```
public class Node {
    int value;
    Node next;
    Node previous;
}
```



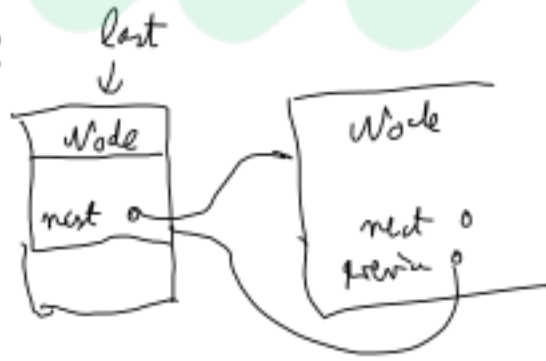
```
public void removeFirst() {
    if (this.first == null) return;
    this.first = this.first.next;
    this.first.previous = null;
    --size;
}
```

```
public int size() {
    int s = 0;
    Node n = this.first;
    while (n != null) {
        n = n.next;
        s++;
    }
    return s;
}
```

```
public boolean contains(int e) {
    Node n = this.first;
    while (n != null) {
        if (n.value == e) return true;
        n = n.next;
    }
    return false;
}
```

```
public void addLast(int e) {
    Node last = getLast();
```

```
Node n = new Node();
n.value = e;
if (last == null) { this.first = n; return; }
last.next = n;
n.previous = last;
++size;
}
```



```
private Node getLast() {
    Node n = this.first;
    while (n != null && n.next != null)
        n = n.next;
    return n;
}
```

```
public void removeLast() {
    Node last = getLast();
    if (last == null) return;
    if (last.previous == null) {
        this.first = null;
        size = 0; return;
    }
    last.previous.next = null;
    size--;
}
```

```
public void addElementAt(int i, int e) {
    // ...
}
```

```
public int getElement(int i) {
    Node n = this.first; int k = 0;
    while (n != null && k < i) {
        n = n.next;
        k++;
    }
    return n.value;
}
```

