Write a Java program to create a doubly linked list of n nodes and display it in reverse order

```
public class ReverseList {


  //Represent a node of the doubly linked list


  class Node{
    int data;
    Node previous;
    Node next;


    public Node(int data) {
      this.data = data;
    }
  }


  //Represent the head and tail of the doubly linked list
  Node head, tail = null;


  //addNode() will add a node to the list
  public void addNode(int data) {
    //Create a new node
    Node newNode = new Node(data);


    //If list is empty
    if(head == null) {
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        //Both head and tail will point to newNode
        head = tail = newNode;
        //head's previous will point to null
        head.previous = null;
        //tail's next will point to null, as it is the last node of the list
        tail.next = null;
    }
    else {
        //newNode will be added after tail such that tail's next will point to newNode
        tail.next = newNode;
        //newNode's previous will point to tail
        newNode.previous = tail;
        //newNode will become new tail
        tail = newNode;
        //As it is last node, tail's next will point to null
        tail.next = null;
    }
}

//reverse() will reverse the doubly linked list
public void reverse() {
    //Node current will point to head
    Node current = head, temp = null;

    //Swap the previous and next pointers of each node to reverse the direction of the list
```
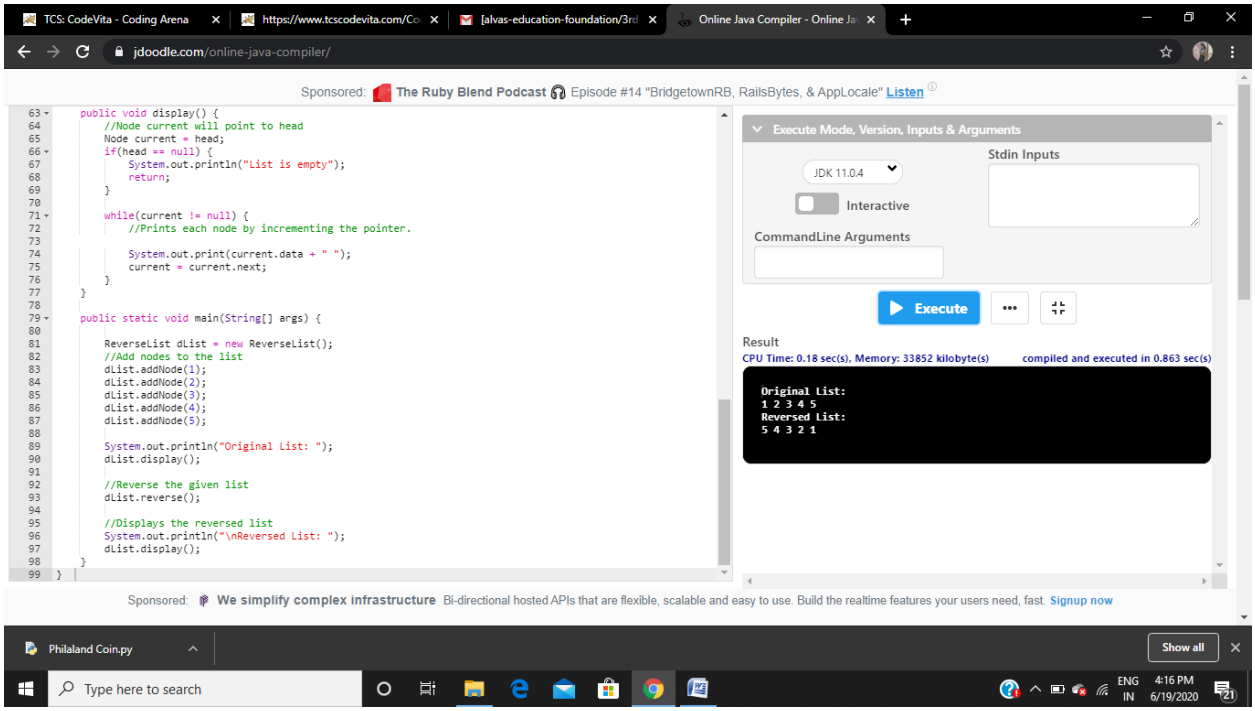

```
    while(current != null) {
        temp = current.next;
        current.next = current.previous;
        current.previous = temp;
        current = current.previous;
    }
    //Swap the head and tail pointers.
    temp = head;
    head = tail;
    tail = temp;
}

//display() will print out the elements of the list
public void display() {
    //Node current will point to head
    Node current = head;
    if(head == null) {
        System.out.println("List is empty");
        return;
    }

    while(current != null) {
        //Prints each node by incrementing the pointer.

        System.out.print(current.data + " ");
```

```
            current = current.next;
        }
    }

    public static void main(String[] args) {

        ReverseList dList = new ReverseList();
        //Add nodes to the list
        dList.addNode(1);
        dList.addNode(2);
        dList.addNode(3);
        dList.addNode(4);
        dList.addNode(5);

        System.out.println("Original List: ");
        dList.display();

        //Reverse the given list
        dList.reverse();

        //Displays the reversed list
        System.out.println("\nReversed List: ");
        dList.display();
    }
}
```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public void display() {
//Node current will point to head
Node current = head;
if(head == null) {
System.out.println("List is empty");
return;
}
while(current != null) {
//Prints each node by incrementing the pointer.
System.out.print(current.data + " ");
current = current.next;
}
}
public static void main(String[] args) {
ReverseList dList = new ReverseList();
//Add nodes to the list
dList.addNode(1);
dList.addNode(2);
dList.addNode(3);
dList.addNode(4);
dList.addNode(5);
System.out.println("Original List: ");
dList.display();
//Reverse the given list
dList.reverse();
//Displays the reversed list
System.out.println("\nReversed List: ");
dList.display();
}
}
Execute Mode, Version, Inputs & Arguments
JDK 11.0.4
Interactive
Stdin Inputs
CommandLine Arguments
Execute
Result
CPU Time: 0.18 sec(s), Memory: 33852 kilobyte(s)
compiled and executed in 0.863 sec(s)
Original List:
1 2 3 4 5
Reversed List:
5 4 3 2 1
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