7. Write a program in Java to traverse a doubly linked list in the forward and backward directions

```java
class Node {

    int data;

    Node prev;

    Node next;


    public Node(int data) {

        this.data = data;

        this.prev = null;

        this.next = null;

    }

}


class DoublyLinkedList {

    Node head;


    public void insert(int data) {

        Node newNode = new Node(data);

        if (head == null) {

            head = newNode;

        } else {

            Node current = head;

            while (current.next != null) {

                current = current.next;

            }

            current.next = newNode;

            newNode.prev = current;

        }

    }


    public void traverseForward() {
```

```java
        System.out.println("Traversing in forward direction:");

        Node current = head;

        while (current != null) {

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

            current = current.next;

        }

        System.out.println();

    }


    public void traverseBackward() {

        System.out.println("Traversing in backward direction:");

        Node current = head;

        while (current.next != null) {

            current = current.next;

        }

        while (current != null) {

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

            current = current.prev;

        }

        System.out.println();

    }

}


public class DoublyLinkedListTraversal {

    public static void main(String[] args) {

        DoublyLinkedList dll = new DoublyLinkedList();

        dll.insert(1);

        dll.insert(2);

        dll.insert(3);

        dll.insert(4);

        dll.insert(5);
```

```
        dll.traverseForward();

        dll.traverseBackward();

    }

}
```

OUTPUT:

Traversing in forward direction:

1 2 3 4 5

Traversing in backward direction:

5 4 3 2 1