Phase-1 Practice Project: Assisted Practice

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

source code:

```
public class Doublelink {


                Node head;
        class Node
        {
                        int data;
                        Node prev;
                        Node next;
        Node(int d)
        {
        data = d;
        }
                }
        public void push(int new_data)
                {
        Node new_Node = new Node(new_data);
        new_Node.next = head;
                        new_Node.prev = null;
        if (head != null)
                                                head.prev = new_Node;
        head = new_Node;
                }
        public void InsertAfter(Node prev_Node, int new_data)
                {
        if (prev_Node == null)
```

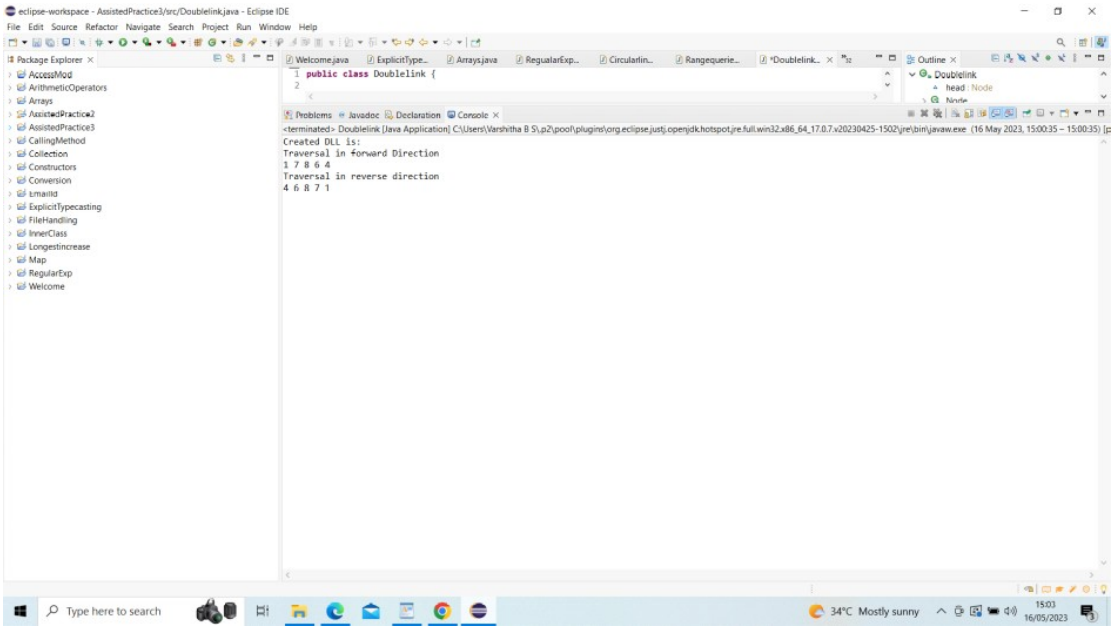
```
        {
                                                System.out.println("The given
previous node cannot be NULL ");
                                                return;
                                }
        Node new_node = new Node(new_data);
        new_node.next = prev_Node.next;
        prev_Node.next = new_node;
        new_node.prev = prev_Node;
        if (new_node.next != null)
                                                new_node.next.prev = new_node;
                }
                void append(int new_data)
                {
        Node new_node = new Node(new_data);
                        Node last = head;
        new_node.next = null;
        if (head == null)
        {
                                                new_node.prev = null;
                                                head = new_node;
                                                return;
                                }
        while (last.next != null)
                                                last = last.next;
        last.next = new_node;
        new_node.prev = last;
                }
```

```
public void printlist(Node node)
          {
                    Node last = null;
                    System.out.println("Traversal in forward Direction");
                    while (node != null)
{
                                        System.out.print(node.data + " ");
                                        last = node;
                                        node = node.next;
                    }
                    System.out.println();
                    System.out.println("Traversal in reverse direction");
                    while (last != null)
{
                                        System.out.print(last.data + " ");
                                        last = last.prev;
                    }
          }
public static void main(String[] args)
          {
Doublelink dll = new Doublelink();
dll.append(6);
dll.push(7);
dll.push(1);
dll.append(4);
dll.InsertAfter(dll.head.next, 8);
                    System.out.println("Created DLL is: ");
                    dll.printlist(dll.head);
```

```
                    }

            }
```

output:


eclipse-workspace - AssistedPractice3/src/Doublelink.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
AccessMod
ArithmeticOperators
Arrays
AssistedPractice2
AssistedPractice3
CallingMethod
Collection
Constructors
Conversion
Emailid
ExplicitTypecasting
FileHandling
InnerClass
Longestincrease
Map
RegularExp
Welcome
Welcome.java
ExplicitType...
Arrays.java
RegularExp...
Circularlin...
Rangequerie...
*Doublelink...
1 public class Doublelink {
2
Outline
Doublelink
head : Node
Problems
Javadoc
Declaration
Console
<terminated> Doublelink [Java Application] C:\Users\Varshitha B S\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (16 May 2023, 15:00:35 – 15:00:35)
Created DLL is:
Traversal in forward Direction
1 7 8 6 4
Traversal in reverse direction
4 6 8 7 1
Type here to search
34°C Mostly sunny
15:03
16/05/2023