

A dark blue vertical bar on the left side of the page. A blue arrow points to the right from the bar, containing the date.

9/12/2024

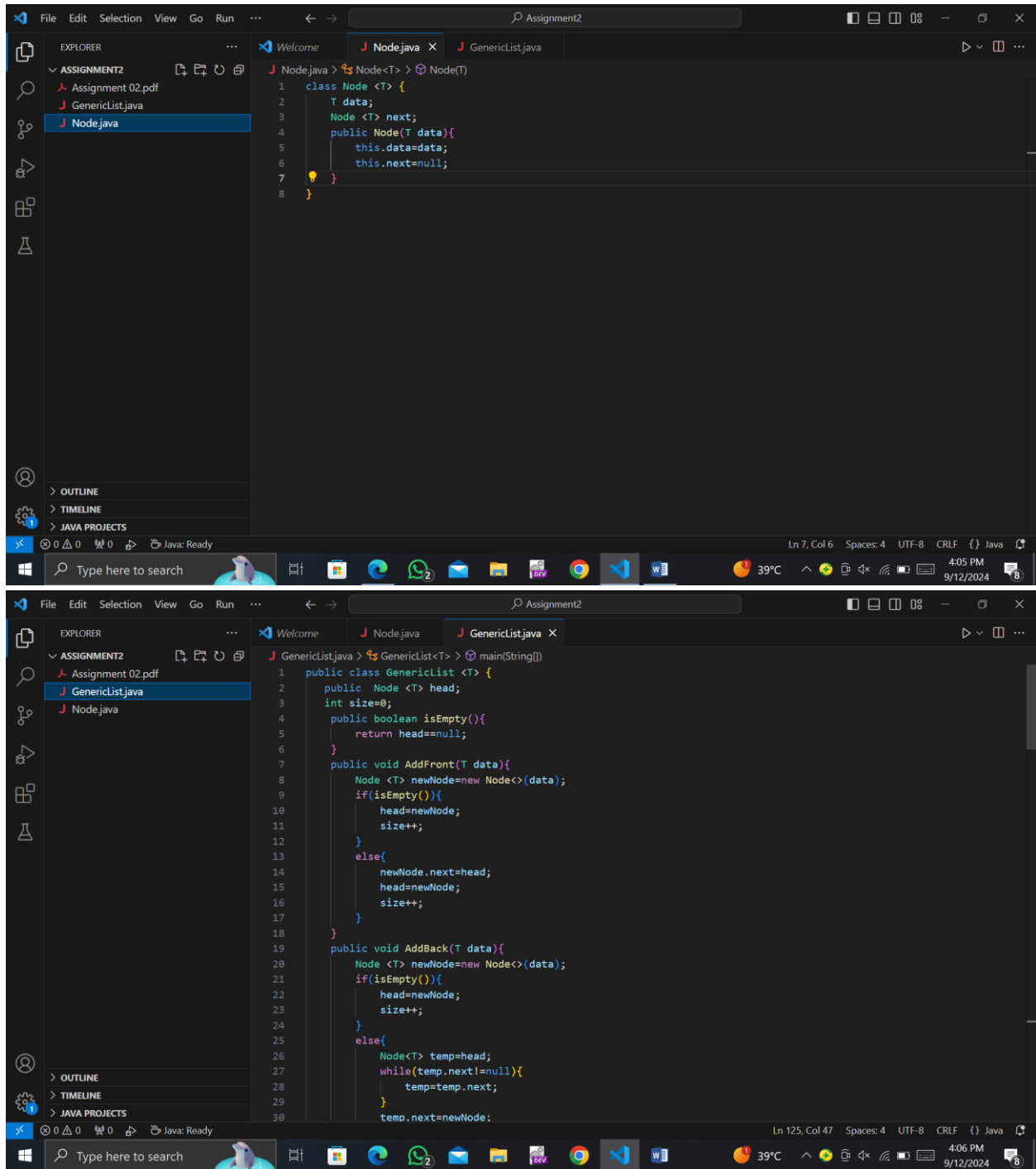
Data Structures

Assignment 2 exercise Solution

Several thin, curved lines in dark blue and light grey originate from the bottom left and curve upwards and to the right.

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Task



This screenshot shows the Visual Studio Code editor with the file `GenericList.java` open. The Explorer sidebar on the left shows the project structure with `Assignment 02.pdf`, `GenericList.java`, and `Node.java`. The main editor window displays the following Java code:

```
31         size++;
32     }
33 }
34 public void AddMiddle(int index,T data){
35     Node<T> newNode=new Node<>(data);
36     if(head==null){
37         head=newNode;
38     }
39     else{
40         Node<T> temp=head;
41         int i=1;
42         while(i<index-1){
43             temp=temp.next;
44             i++;
45         }
46         newNode.next=temp.next;
47         temp.next=newNode;
48     }
49 }
50 public void RemoveFront(){
51     if(head==null){
52         System.out.println(x:"Generic List is empty");
53     }
54     else{
55         head=head.next;
56     }
57 }
58 public void RemoveBack(){
59     if(head==null){
60         System.out.println(x:"Generic List is empty");
```

The status bar at the bottom indicates the cursor is at line 125, column 47, with 4 spaces, UTF-8 encoding, and CRLF line endings. The system tray shows a temperature of 39°C and the date 9/12/2024.

This screenshot shows the Visual Studio Code editor with the file `GenericList.java` open, displaying the continuation of the code from the previous screenshot:

```
62     }
63     else{
64         Node<T> temp=head;
65         while(temp.next.next!=null){
66             temp=temp.next;
67         }
68         temp.next=null;
69     }
70 }
71 public void print(){
72     if(head==null){
73         System.out.println(x:"Generic List is empty");
74     }
75     else{
76         Node<T> temp=head;
77         while(temp!=null){
78             System.out.print(temp.data+" ");
79             temp=temp.next;
80         }
81     }
82 }
83 public void RemoveMiddle(int index){
84     if(head==null){
85         System.out.println(x:"generic list is empty");
86     }
87     else{
88         int i=1;
89         Node<T> temp =head;
90         if(index>size){
91             System.out.println(x:"Index out of bound");
```

The status bar at the bottom indicates the cursor is at line 125, column 47, with 4 spaces, UTF-8 encoding, and CRLF line endings. The system tray shows a temperature of 39°C and the date 9/12/2024.

```
101 }
102
103 Run | Debug
104 public static void main(String[] args) {
105     GenericList<Integer> gl=new GenericList<>();
106     gl.AddBack(data:5);
107     gl.AddFront(data:4);
108     gl.AddBack(data:6);
109     gl.AddFront(data:3);
110     gl.AddFront(data:2);
111     gl.AddFront(data:1);
112     gl.AddBack(data:7);
113     gl.AddMiddle(index:6, data:9);
114     gl.print();
115     System.out.println();
116     System.out.print(s:"Removing From Back : ");
117     gl.RemoveBack();
118     gl.RemoveBack();
119     gl.print();
120     System.out.println();
121 }
```

```
120 System.out.print(s:"Removing From Front : ");
121 gl.RemoveFront();
122 gl.RemoveFront();
123 gl.print();
124 System.out.println();
125 System.out.print(s:"Removing From Middle : ");
126 gl.RemoveMiddle(index:3);
127 gl.print();
128
129 }
130
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Run: GenericList

Windows PowerShell
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS E:\bscs3\DSA lab\Assignment2> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp'
'C:\Users\BOSS\AppData\Roaming\Code\User\workspaceStorage\c3fbf6450e7eadedab3d42fbdadb5231c\redhat.java\jdt_ws\Assignment2_3e36
801e\bin' 'GenericList'
1 2 3 4 5 9 6 7
Removing From Back : 1 2 3 4 5 9
Removing From Front : 3 4 5 9
Removing From Middle : 3 4 9
PS E:\bscs3\DSA lab\Assignment2>
```

THE END