

Program 6 – Doubly Linked Lists

100 points

IMPORTANT

You must write your code while **carefully following the “IT 179 Program Grading Guidelines”** described in the file **posted with Program 1**.

Set-Up

Create a new Java project named: **P6**. Next, inside the created Java project **P6**, create a Java package.

Objective: Practice with doubly linked lists

Important

Please read Section 2.6 - Double-Linked Lists and Circular Lists (pages 84-88 in the 3rd Edition) and watch the videos posted in the folder **Week 6** before you start working on this assignment.

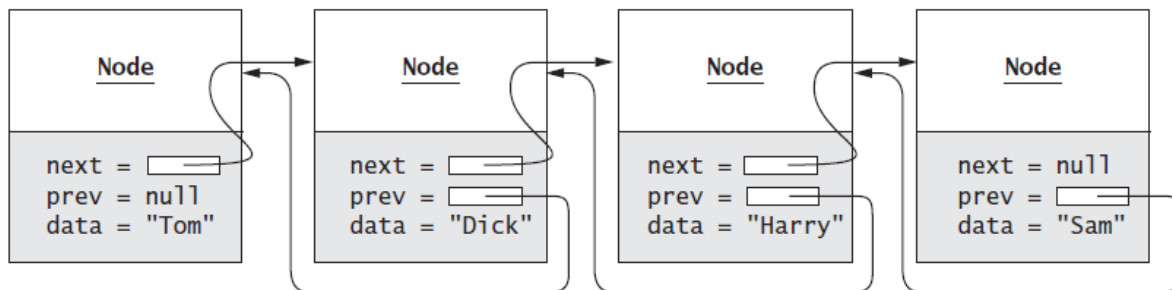


Figure 1

Question 1

For the double-linked list in Figure 1, explain the effect of each statement in the following fragments.

a.

```
Node<String> nodeRef = tail.prev;  
nodeRef.prev.next = tail;  
tail.prev = nodeRef.prev;
```

b.

```
Node<String> nodeRef = head;  
head = new Node<>("Tamika");  
head.next = nodeRef;  
nodeRef.prev = head;
```

c.

```
Node<String> nodeRef = new Node<>("Shakira");  
nodeRef.prev = head;  
nodeRef.next = head.next;  
head.next.prev = nodeRef;  
head.next = nodeRef;
```

Question 2

For the double-linked list shown in Figure 1, assume head references the first list node and tail references the last list node. Write a Java program that does the following:

- a. builds the list shown in Figure 1.
- b. Insert "Bill" before "Tom".
- c. Insert "Sue" before "Sam".
- d. Remove "Bill".
- e. Remove "Sam".

To Be Submitted

Please zip your Java project in a file called P6.zip and submit to ReggieNet before the due date.