public class ArrayListADT {

class Node {

private int data;

private Node next;

public Node(int data, Node next) {

this.data = data;

this.next = next;

}

}

public ArrayListADT() {

head = null;

size = 0;

}

private Node head;

private Node tail;

public int size;

public void addFirst(int number) {

if (head == null) {

head = new Node(number, null);

tail = head;

tail.next = head;

} else {

Node newNode = new Node(number, head);

tail.next = newNode;

head = newNode;

}

size++;

}

public void addLast(int number) {

if (head == null) {

head = new Node(number, null);

tail = head;

tail.next = head;

} else {

Node newNode = new Node(number, head);

tail.next = newNode;

tail = newNode;

}

size++;

}

public void delete() {

if (head == null)

return;

if (head.next == head) {

head = null;

tail = null;

} else {

tail.next = head.next;

head = tail.next;

}

}

public void display() {

if(head != null)

{

Node current = head;

while(current.next != head)

{

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

current = current.next;

}

System.out.println(current.data);

}

}

}

import java.util.Scanner;

public class Test {

public static void main(String[] args) {

ArrayListADT test = new ArrayListADT();

Scanner scan = new Scanner(System.in);

String ans = "y";

int firstLast = 0;

while (ans.equalsIgnoreCase("y")&& (firstLast <= 2 && firstLast >= 0)) {

int number;

System.out.println("Would you like to add a number to the list?");

ans = scan.next();

if(ans.equalsIgnoreCase("y")) {

System.out.println("Please enter the number you would like to enter into the list:");

number = scan.nextInt();

System.out.println("Would you like to add in the front (1) or at the end (2)?");

firstLast = scan.nextInt();

if(firstLast == 1)

test.addFirst(number);

else

test.addLast(number);

test.display();

}

else

{

System.out.println("Would you like to remove a number from the list?");

ans = scan.next();

if(ans.equalsIgnoreCase("y")){

test.delete();

test.display();

}

}

}

}

}

Output:

Would you like to add a number to the list?

y

Please enter the number you would like to enter into the list:

5

Would you like to add in the front (1) or at the end (2)?

1

5

Would you like to add a number to the list?

y

Please enter the number you would like to enter into the list:

8

Would you like to add in the front (1) or at the end (2)?

1

8

5

Would you like to add a number to the list?

y

Please enter the number you would like to enter into the list:

9

Would you like to add in the front (1) or at the end (2)?

2

8

5

9

Would you like to add a number to the list?

y

Please enter the number you would like to enter into the list:

4

Would you like to add in the front (1) or at the end (2)?

2

8

5

9

4

Would you like to add a number to the list?

n

Would you like to remove a number from the list?

y

5

9

4

Would you like to add a number to the list?

n

Would you like to remove a number from the list?

n