1.Write a Java program to implement Circular Linked List Using Array And Class

**package** prog14;

**public** **class** CircularLinkedList {

**public** **int** size =0;

**public** Node head=**null**;

**public** Node tail=**null**;

//add a new node at the start of the linked list

**public** **void** addNodeAtStart(**int** data){

System.***out***.println("Adding node " + data + " at start");

Node n = **new** Node(data);

**if**(size==0){

head = n;

tail = n;

n.next = head;

}**else**{

Node temp = head;

n.next = temp;

head = n;

tail.next = head;

}

size++;

}

**public** **void** addNodeAtEnd(**int** data){

**if**(size==0){

addNodeAtStart(data);

}**else**{

Node n = **new** Node(data);

tail.next =n;

tail=n;

tail.next = head;

size++;

}

System.***out***.println("\nNode " + data + " is added at the end of the list");

}

**public** **void** deleteNodeFromStart(){

**if**(size==0){

System.***out***.println("\nList is Empty");

}**else**{

System.***out***.println("\ndeleting node " + head.data + " from start");

head = head.next;

tail.next=head;

size--;

}

}

**public** **int** elementAt(**int** index){

**if**(index>size){

**return** -1;

}

Node n = head;

**while**(index-1!=0){

n=n.next;

index--;

}

**return** n.data;

}

//print the linked list

**public** **void** print(){

System.***out***.print("Circular Linked List:");

Node temp = head;

**if**(size<=0){

System.***out***.print("List is empty");

}**else**{

**do** {

System.***out***.print(" " + temp.data);

temp = temp.next;

}

**while**(temp!=head);

}

System.***out***.println();

}

//get Size

**public** **int** getSize(){

**return** size;

}

**public** **static** **void** main(String[] args) {

CircularLinkedList c = **new** CircularLinkedList();

c.addNodeAtStart(3);

c.addNodeAtStart(2);

c.addNodeAtStart(1);

c.print();

c.deleteNodeFromStart();

c.print();

c.addNodeAtEnd(4);

c.print();

System.***out***.println("Size of linked list: "+ c.getSize());

System.***out***.println("Element at 2nd position: "+ c.elementAt(2));

}

}

**package** prog14;

**class** Node{

**int** data;

Node next;

**public** Node(**int** data){

**this**.data = data;

}

}

**Output:**

