Assignment 7

**Question 1:** Write a menu-driven program to implement the various insert, delete and display functions of a linked list in JAVA.

**Code:**

import java.util.\*;

class Node

{

int data;

Node next;

Node(int n, Node ptr)

{

data = n;

next = ptr;

}

}

class List

{

Node head;

void insert(int n, int pos)

{

if(head == null)

{

head = new Node(n, null);

}

else

{

if(pos==1)

{

Node tmp = new Node(n, head);

head = tmp;

}

else

{

int i = 1;

Node tmp;

for(tmp = head; i < pos - 1; i++, tmp = tmp.next);

if(tmp.next == null)

{

Node tmp1 = new Node(n, null);

tmp.next = tmp1;

}

else

{

Node tmp1 = new Node(n, tmp.next);

tmp.next = tmp1;

}

}

}

}

void delete(int pos)

{

if(head == null)

return;

if(pos == 1)

{

Node tmp = head;

head = head.next;

tmp = null;

}

else

{

Node tmp; int i = 1;

for(tmp = head; i < pos - 1; i++, tmp = tmp.next);

if(tmp.next.next == null)

tmp.next = null;

else

{

Node tmp1 = tmp.next;

tmp.next = tmp.next.next;

tmp1 = null;

}

}

}

void display()

{

System.out.print("Current list: ");

Node tmp = head;

while(tmp != null)

{

System.out.print(tmp.data+" ");

tmp = tmp.next;

}

System.out.println();

}

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

List obj = new List();

int ch;

do{

System.out.println("1-Insert\n2-Delete\n3-Display\n4-Exit");

System.out.println("Input choice (1/2/3/4)");

int pos, val;

ch = sc.nextInt();

switch(ch)

{

case 1: System.out.println("Enter position and value");

pos = sc.nextInt();

val = sc.nextInt();

obj.insert(val, pos);

break;

case 2: System.out.println("Enter position of deletion");

pos = sc.nextInt();

obj.delete(pos);

break;

case 3: obj.display();

break;

case 4: break;

}

}while(ch!=4);

obj.display();

}

}

**Output:**

