Week-14

Objective: Students will learn Linked List.

1) Create a singly linked list. Write functions for the following.

a) Display

b) Insert at the front

c) Insert at the end

a) Sum of the alternate nodes

b) Sum of the nodes

c) Sum of even and odd nodes

Input and Output1:

Enter the no. of nodes to be inserted in the linked list

4

Enter the Data for node no.1 :7

Enter the Data for node no.2 :3

Enter the Data for node no.3 :9

Enter the Data for node no.4 :11

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 1

List elements are

7

3

9

11

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 2

Enter value of element

1

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 1

List elements are

1

7

3

9

11

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 3

Enter value of element

5

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 1

List elements are

1

7

3

9

11

5

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 4

sum of alternate node is=15

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 5

sum of nodes is 36

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 6

Even node sum is 0

Odd node sum is 36

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 7

Input and Output2:

Enter the no. of nodes to be inserted in the linked list

0

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 1

Linked list is empty.

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 2

Enter value of element

10

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 1

List elements are

10

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 3

Enter value of element

17

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 1

List elements are

10

17

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 3

Enter value of element

33

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 3

Enter value of element

38

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 3

Enter value of element

73

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 1

List elements are

10

17

33

38

73

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 4

sum of alternate node is=116

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 5

sum of nodes is 171

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 6

Even node sum is 48

Odd node sum is 123

1. Display

2. Insert at the front

3. Insert at the end

4. Sum of alternate node elements

5. Sum of all the elements in the list

6. Sum of even and odd node elements in the list

7. Exit

Enter your choice: 7

Practise programs

1) Create a linked list. Write functions for the following.

i)delete at the front

ii)delete at the end

iii)display

iv)Search an element

ii)Product of the nodes of a linked list which are divisible by given number.