

**Problem Statement :** Insert an element at the beginning of an linked list using Python

**Objective :** Implementation of Inserting an element at the beginning of an linked list using Python

**Source Code :**

```
1 class Node:
2     def __init__(self, value):
3         self.data = value
4         self.next = None
5
6 class LinkedList:
7     def __init__(self):
8         self.head = None
9
10    def insetAtHead(self, value):
11        newNode = Node(value)
12        newNode.next = self.head
13        self.head = newNode
14
15    def display(self):
16        current = self.head
17        while current:
18            print(current.data, end=" -> ")
19            current = current.next
20        print("None")
21
22
23 list = LinkedList()
24 list.insetAtHead(5)
25 list.insetAtHead(7)
26 list.display()
```

**Output :**

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL GITLENS
• SAKIB DS Lab Report 02
  ↳ python -u "c:\PU Projects\PUC Course\Problem01.py"
  7 -> 5 -> None
• SAKIB DS Lab Report 02
  ↳
```

**Problem Statement :** Insert an element at the end of an linked list using Python

**Objective :** Implementation of Inserting an element at the end of an linked list using Python

**Source Code :**

```
1 class Node:
2     def __init__(self, value):
3         self.data = value
4         self.next = None
5
6 class LinkedList:
7     def __init__(self):
8         self.head = None
9
10    def insertAtTail(self, value):
11        newNode = Node(value)
12
13        if self.head is None:
14            self.head = newNode
15            return
16
17        current = self.head
18        while current.next:
19            current = current.next
20        current.next = newNode
21
22    def display(self):
23        current = self.head
24        while current:
25            print(current.data, end=" -> ")
26            current = current.next
27        print("None")
28
29 list = LinkedList()
30 list.insertAtTail(99)
31 list.insertAtTail(100)
32 list.display()
33
34
35
```

**Output :**

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  GITLENS
• SAKIB  DS Lab Report 02
  ↳ python -u "c:\PU Projects\Problem02.py"
  99 -> 100 -> None
◦ SAKIB  DS Lab Report 02
  ↳
```

**Problem Statement :** Insert an element between nodes using Python

**Objective :** Implementation of Inserting an element between nodes of an linked list using Python

**Source Code :**

```
1 class Node:
2     def __init__(self, value):
3         self.data = value
4         self.next = None
5 class LinkedList:
6     def __init__(self):
7         self.head = None
8
9     def insertAtAnyPos(self, pos, value):
10        newNode = Node(value)
11
12        if self.head == None:
13            self.head = newNode
14            return
15
16        if pos == 1:
17            newNode.next = self.head
18            self.head = newNode
19            return
20
21        current = self.head
22        for i in range(pos - 2):
23            current = current.next
24        newNode.next = current.next
25        current.next = newNode
26
27    def display(self):
28        current = self.head
29        while current:
30            print(current.data, end=" -> ")
31            current = current.next
32        print("None")
33
34list = LinkedList()
35list.insertAtAnyPos(3, 25)
36list.insertAtAnyPos(1, 50)
37list.insertAtAnyPos(2, 75)
38list.display()
```

**Output :**

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  GITLENS
• SAKIB  DS Lab Report 02
  ↳ python -U "c:\PU Projects\PUC C
  blem03.py"
50 -> 75 -> 25 -> None
• SAKIB  DS Lab Report 02
  ↳
```