

LAB#6

Example#1:

Create a singly linked list, which should have the following functions in it:

- Insert_at_start()
 - To add the element at first in the list.
- Isempty()
 - To check either the list is empty or not.
- Insert_at_last()
 - To add the element at the last in the list.
- Insert_after()
 - To add the element after a specific node in the list.
- Print_list()
 - To print all the elements in the list.

Solution:

```
1  class Node:
2      def __init__(self,item=None,next=None):
3          self.item=item
4          self.next=next
5  class SLL:
6      def __init__(self,start=None):
7          self.start=start
8      def insert_at_start(self,item):
9          temp=self.start
10         n=Node(item,temp)
11         self.start=n
12     def isempty(self):
13         return self.start==None
```

```
14         def insert_after(self,sdata,ndata):
15             temp=self.start
16             while temp is not None:
17                 if temp.item == sdata:
18                     n=Node(ndata,temp.next)
19                     temp.next=n
20                     temp=temp.next
21             return None
22
23     def insert_at_last(self,item):
24         temp=self.start
25         n=Node(item)
```

```

26         if self.isempty():
27             |
28             |         self.start=n
29         else:
30             |         while temp.next is not None:
31             |             temp=temp.next
32             |         temp.next=n
33
34     def print_list(self):
35         temp=self.start
36         while temp is not None:

```

```

37             print(temp.item,end=' ')
38             temp=temp.next
39 mylist=SLL()
40 mylist.insert_at_last(100)
41 mylist.insert_at_last(190)
42 mylist.insert_at_start(1)
43 mylist.print_list()
44 print('\n')
45 mylist.insert_after(100,99)
46 mylist.print_list()
47 mylist.insert_after(190,9.66)

```

```

48 print('\n')
49 mylist.print_list()

```

Result:

```

1 100 190

1 100 99 190

1 100 99 190 9.66

```

Class Assignment

Q.1: Add new function `insert_at_second` in the above program LAB6 Example#1 to add the data at the second position in the list.

Q.2: Add new function `insert_at_sec_last` in the above program LAB6 Example#1 to add the data at the second last position in the list.