

Day – 5 : Linked List -I

Problem 1: Given the *head* of a singly linked list, write a program to reverse the linked list, and return *the head pointer to the reversed list*.

```
class ListNode:
    def __init__(self, val=0, next=None):
        self.val = val
        self.next = next
```

```
def reverseLinkedList(head):
    prev = None
    current = head
```

```
    while current is not None:
        next_node = current.next
        current.next = prev
        prev = current
        current = next_node
```

```
    return prev
```

Test the program

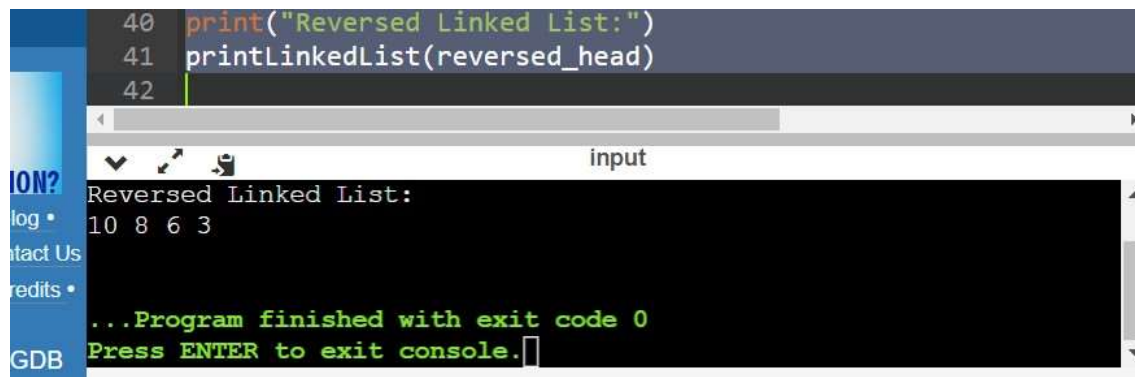
```
def createLinkedList(arr):
    head = ListNode(arr[0])
    current = head
    for i in range(1, len(arr)):
        current.next = ListNode(arr[i])
        current = current.next
    return head
```

```
def printLinkedList(head):
    current = head
```

```
while current is not None:
    print(current.val, end=" ")
    current = current.next
print()
```

```
arr = [3, 6, 8, 10]
head = createLinkedList(arr)
print("Original Linked List:")
printLinkedList(head)
```

```
reversed_head = reverseLinkedList(head)
print("Reversed Linked List:")
printLinkedList(reversed_head)
```



The screenshot shows a code editor with three lines of Python code: line 40 has `print("Reversed Linked List:")`, line 41 has `printLinkedList(reversed_head)`, and line 42 is empty. Below the code editor is a terminal window. The terminal has a title bar with a checkmark, a cursor icon, and a trash icon, and the text "input". The terminal output shows "Reversed Linked List:" followed by "10 8 6 3" on the next line. Below that, it says "...Program finished with exit code 0" and "Press ENTER to exit console." with a cursor at the end.

```
40 print("Reversed Linked List:")
41 printLinkedList(reversed_head)
42
Reversed Linked List:
10 8 6 3
...Program finished with exit code 0
Press ENTER to exit console.
```