



# Insert a node at a specific position in a linked list ★

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This challenge is part of a tutorial track by [MyCodeSchool](#) and is accompanied by a video lesson.

Given a pointer to the head node of a linked list and an integer to insert at a certain position, create a new node with the given integer as its **data** attribute, insert this node at the desired position, and return the head node.

A position of 0 indicates the head, a position of 1 indicates one node away from the head, and so on. The head pointer given may be null, meaning that the initial list is empty.

## Example

**head** refers to the first node in the list **1 → 2 → 3**

**data** = 4

**position** = 2

Insert a node at position **2** with **data** = 4. The new list is **1 → 2 → 4 → 3**

## Function Description

Complete the function **insertNodeAtPosition** with the following parameters:

- **SinglyLinkedListNode pointer llist**: a reference to the head of the list
- **data**: an integer value to insert as data in the new node
- **position**: an integer position to insert the new node, zero-based indexing

## Returns

- **SinglyLinkedListNode pointer**: a reference to the head of the revised list

## Input Format

The first line contains an integer **n**, the number of elements in the linked list.

Each of the next **n** lines contains an integer `SinglyLinkedListNode[i].data`.

The next line contains an integer **data**, the data of the node that is to be inserted.

The last line contains an integer **position**.

## Constraints

- $1 \leq n \leq 1000$
- $1 \leq \text{SinglyLinkedListNode}[i].\text{data} \leq 1000$ , where **SinglyLinkedListNode[i]** is the  $i^{\text{th}}$  element of the linked list.
- $0 \leq \text{position} \leq n$ .

## Sample Input

```
STDIN      Function
-----
3          n = 3
16         llist = 16->13->7
```

```
13
7
1    data = 1
2    position = 2
```

### Sample Output

```
16 13 1 7
```

### Explanation

The initial linked list is **16 → 13 → 7**. Insert **1** at the position **2** which currently has **7** in it. The updated linked list is **16 → 13 → 1 → 7**.

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```
40 # Complete the 'insertNodeAtPosition' function below.
41 #
42 # The function is expected to return an INTEGER_SINGLY_LINKED_LIST.
43 # The function accepts following parameters:
44 # 1. INTEGER_SINGLY_LINKED_LIST llist
45 # 2. INTEGER data
46 # 3. INTEGER position
47 #
48
49 #
50 # For your reference:
51 #
52 # SinglyLinkedListNode:
53 #     int data
54 #     SinglyLinkedListNode next
55 #
56 #
57
58 def insertNodeAtPosition(llist, data, position):
59     # Write your code here
60     if not llist:
61         return SinglyLinkedListNode(data)
62
63     cur = llist
64     pre = None
65     for _ in range(position):
66         pre = cur
67         cur = cur.next
68     new_node = SinglyLinkedListNode(data)
69     pre.next = new_node
70     new_node.next = cur
71     return llist
72
73 if name == 'main':...
```

EMACS

Line: 48 Col: 1

Upload Code as File

☐ Test against custom input

Run Code

Submit Code

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96%

196/200



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✔ Test case 0

Compiler Message

✔ Test case 1

Success

✔ Test case 2

Input (stdin)

Download

1

3

✔ Test case 3

2

16

3

13

✔ Test case 4

4

7

5

1

✔ Test case 5

6

2

✔ Test case 6

Expected Output

Download

1

16 13 1 7