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 the 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 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 $1 \rightarrow 2 \rightarrow 3$

$data = 4$

$position = 2$

Insert a node at position 2 with $data = 4$. The new list is $1 \rightarrow 2 \rightarrow 4 \rightarrow 3$

Function Description Complete the function insertNodeAtPosition in the editor below. It must return a reference to the head node of your finished list.

insertNodeAtPosition has the following parameters:

- head: a SinglyLinkedListNode pointer to the head of the list
- data: an integer value to insert as data in your 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

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

Sample Input

```
3
16
13
7
1
2
```

Sample Output

```
16 13 1 7
```

Explanation

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

Change Theme C++

```
71  SinglyLinkedListNode* insertNodeAtPosition(SinglyLinkedListNode* head, int data, int
    position) {
72          SinglyLinkedListNode* node = new SinglyLinkedListNode(data);
73          if(!head){      //if list is empty return newly created node
74              return node;    }
75          SinglyLinkedListNode* temp = head;    //temp points to header so that we can
    traverse using twmp
76          SinglyLinkedListNode* prev_node;
77          int pos=0;
78          while (temp != nullptr){            //traversing till we reach position
79              if(pos==position) break;
80              prev_node = temp;               //prev_node is used to insert the new node
    betweeen prev_node and temp https://www.youtube.com/watch?v=-4K4n7l9gMg&t=37s&
    ab_channel=nexTRIE
81              temp=temp->next;
82              pos++;
83          }
84          prev_node->next = node;
85          node->next = temp;
86          return head;
87      }
```

Line: 72 Col: 69

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45% 325/475

Problem Solving ★★★

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Next Challenge

Test case 0

Test case 1

Test case 2

Compiler Message

Success

Input (stdin) Download

```
1 3
```

Test case 3

Test case 4

Test case 5

Test case 6

```
16
13
7
1
2
```

Expected Output

Download

```
16 13 1 7
```