National University of Computer and Emerging Sciences, Lahore Campus

Course	Data Structure	Course Code	
Program	BSCS	Semester	4th
		Section	4A
Name	[illegible]	Time	25 mins
Registration #		Assessment	Quiz 2

Q1 Reverse a linked list from position m to n. Note: 1 ≤ m ≤ n ≤ length of list

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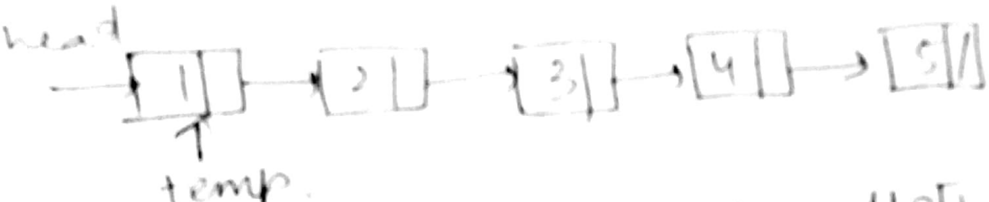
Example:

Input: 1->2->3->4->5->NULL, m = 2, n = 4
Output: 1->4->3->2->5->NULL

a. Write down an algorithm for the aforementioned problem (Use any combination of your own imagination)
b. Write down code in C++ to accomplish the aforementioned task



→ loop will run until it gets nullptr
→ It checks in every iteration the value of m and n
→ If temp = ~~head~~(m) and temp2 = n then it swaps their values.
→ update values of m and n so that [illegible]
→ [illegible]

```
void reverse( int m, int n)
{   Node *temp= ~~new Node()~~ head;
    Node *temp2 = ~~new Node()~~ temp->next;
    int t3 = 0;
for ( temp= head && temp2 = temp->next ; temp1 = null
    ; temp = temp->next )
{  if ((temp == m) && (temp2 == n))
   {   t3 = temp->data;
       temp->data = temp2->data;
       temp2->data = t3;
   }
}
}
```

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```
Node * temp = head;
Node * temp2 = temp->next;
int t3 = 0;
while( temp != nullptr)
{
    if((temp == m) && (temp2 == n))
    {
        t3 = temp->data;
        temp->data = temp2->data;
        temp2->data = t3;
    }
    else
    {
        temp = temp->next;
        temp2 = temp->next;
    }
}
```

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National University of Computer and Emerging Sciences, Lahore Campus

	Course:	Data Structure	Course Code:	
	Program:	BSCS	Semester:	4th
			Section:	4A
	Name:	Sana	Time:	20 mins
	Registration #:	L19-1333	Assessment	Quiz 2

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Q1: Reverse a linked list from position m to n. Note: $1 \leq m \leq n \leq$ length of list.

Example:

Input: 1->2->3->4->5->NULL, m = 2, n = 4
Output: 1->4->3->2->5->NULL

a. Write down an algorithm for the aforementioned problem (Use any combination of your own imagination)
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) Make two linklists, assume that we have functions of insertathead() and insertattail() - From m to n, store in a auxillary created list using insertathead() it will store 4 3 2 in aux list - Then using insertattail() insert elements from original linklist till (m-1) Then from first auxillary list till null and then from original list from n+1. Assume print() and length() are available.

```
d reverse (linklist obj, int m, int n)
{
    if (m<n and n<=length())  // length() is a function
    {
        int a=m, b=n;
        linklist aux1;
        linklist aux2;
        node *p = obj.head;  // assuming node is class with data and to next
        int c=0;
        while (c != m-1)
        {
            p = p->next;
        }
        while (c != n)
        {
            aux1.insertathead(p->data); // storing 4 3 2
            p = p->next;
        }
```

```
int n1=0;                nude *q= obj.head,
While (n1 != m-1)
{
  aux2.insertat tail(q->data);
}
// Now n1 = m          node * r = aux1.head,
while ( r != Null)
{  aux2.insertattail (r->data);
   r = r->next;
}
node * newnode = obj.head;
int d = 0;
While ( d != n )
{ newnode = newnode->next;
}
While (newnode != NULL)
{
  aux2.insertattail(newnode->data)
}
aux2.prin() ;
```

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```
// assume print()
{
}
else
{
  cout << "values of m and n are not right ";
}
```

m n
2 4

1 2 3 4 5

if (m < n is n < length())

link

4 3 2

insert in a new link list

insert till m-1 the first original list
insert at tail

while m

insert the created linklist till n

Then insert the original

after ending n

	Course:	Data Structure	Course Code:	
	Program:	BSCS	Semester:	4th
			Section:	4A
	Name:	M-Haseeb-ur-Rehman	Time:	20 mins
	Registration #:	18L 1222	Assessment	Quiz 2

Zero / 10

Q1: Reverse a linked list from position m to n. Note: $1 \leq m \leq n \leq$ length of list.

Example:

Input: 1->2->3->4->5->NULL, m = 2, n = 4
Output: 1->4->3->2->5->NULL

a. Write down an algorithm for the aforementioned problem (Use any combination of your own imagination)
b. Write down code in C++ to accomplish the aforementioned task