Write a recursive function to print reverse of a Linked List

Note that the question is only about printing the reverse. To reverse the list itself see this

Difficulty Level: Rookie

Algorithm

```
printReverse(head)
  1. call print reverse for hed->next
  2. print head->data
```

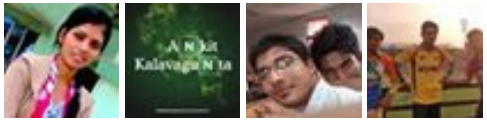
Implementation:

```
#include<stdio.h>
#include<stdlib.h>

/* Link list node */
struct node
{
    int data;
    struct node* next;
};

/* Function to reverse the linked list */
void printReverse(struct node* head)
{
  // Base case
  if(head == NULL)
    return;

  // print the list after head node
```

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```
  printReverse(head->next);

  // After everything else is printed, print head
  printf("%d  ", head->data);
}

/*UTILITY FUNCTIONS*/
/* Push a node to linked list. Note that this function
  changes the head */
void push(struct node** head_ref, char new_data)
{
    /* allocate node */
    struct node* new_node =
            (struct node*) malloc(sizeof(struct node));

    /* put in the data  */
    new_node->data  = new_data;

    /* link the old list off the new node */
    new_node->next = (*head_ref);

    /* move the head to pochar to the new node */
    (*head_ref)    = new_node;
}

/* Drier program to test above function*/
int main()
{

  struct node* head = NULL;

  push(&head, 1);
  push(&head, 2);
  push(&head, 3);
  push(&head, 4);

  printReverse(head);
  getchar();
}
```

Time Complexity: O(n)

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Codeguru • 5 months ago

complete c code to reverse a linked list

```
#include<stdio.h>
#include<malloc.h>

struct node
{
int data;
struct node * link;
};

void insert_beg(struct node ** head,int num)
{
struct node * temp;
temp=(struct node *)malloc(sizeof(struct node));
temp->data=num;
temp->link=*head;
*head=temp;
return;
```

see more

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prathviraj • 10 months ago

Could you give a solution without using recursive function?

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/* ya linklist can be reversed using stack or simply array*/

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list. After theat push element on to the stack, after pushing all the elem
doing this you can pring the linklist in reverse order.
the simple array code is given below

```
i=0;

while(ptr->link!=NULL)
{
arr[i]=ptr->info;
ptr=ptr->link;
i++;

}
for(j=i-1;j>=0;j--)
printf("%d",arr[j]);
```

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Anon ➦ prathviraj · 7 months ago

will be sort of cheating but you can use a stack ;)

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Scholastica Peter · a year ago

so good when using recursive.

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Ashish Singh · a year ago

solve above prblm by using recursive and non recursive function.

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Here it is in C

```
typedef struct node
{
        int data;
        struct node* next;
}NODE,*PNODE;

PNODE reverseLinkList(PNODE head)
{
        PNODE temp ;
        if (!head || !head->next)
                return head;

        temp = reverseLinkList(head->next);
        head->next->next = head;
        head->next = NULL;
        return temp;
}
```


BlackMath • 2 years ago

A java program to actually reverse a linked list by recursion, not only printing it.

```
/* Paste your code here (You may delete these lines if not writing co
class LNode
{
   int value;
   LNode next;

   LNode (int val)
   {
```

```
        value = val;
    }
}

public class ReverseLinkedListByRecursion
{
  public static void printList (LNode head)
```

see more

1 ▲ | ▼ • Reply • Share ›

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