Rajalakshmi Engineering College

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NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 1_COD_Question 4

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

As part of a programming assignment in a data structures course, students are required to create a program to construct a singly linked list by inserting elements at the beginning.

You are an evaluator of the course and guide the students to complete the task.

Input Format

The first line of input consists of an integer N, which is the number of elements.

The second line consists of N space-separated integers.

Output Format

The output prints the singly linked list elements, after inserting them at the beginning.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5
78 89 34 51 67

Output: 67 51 34 89 78

Answer

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

struct Node {
   int data;
   struct Node* next;
};

// You are using GCC
void insertAtFront(struct Node** head,int newdata)
{
   struct Node* newnode = (struct Node*)malloc(sizeof(struct Node));
   newnode->data=newdata;
   newnode->next= *head;
   *head=newnode;
}

struct Node* reverse(struct Node*head)
{
   struct Node*prev=NULL;
   struct Node*current=head;
   struct Node*next=NULL;

   while(current!=NULL)
   {
      next=current->next;
      current->next=prev;
      prev=current;
```

```
        current=next;
    }

    return prev;
}

void printList(struct Node*node)
{
    while(node!=NULL)
    {
        printf("%d ",node->data);
        node=node->next;
    }
    printf("\n");
}
int main(){
    struct Node* head = NULL;

    int n;
    scanf("%d", &n);

    for (int i = 0; i < n; i++) {
        int activity;
        scanf("%d", &activity);
        insertAtFront(&head, activity);
    }

    printList(head);
    struct Node* current = head;
    while (current != NULL) {
        struct Node* temp = current;
        current = current->next;
        free(temp);
    }

    return 0;
}
```

Status : Correct ***Marks : 10/10***