Rajalakshmi Engineering College

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NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 1_PAH_modified

Attempt : 2
Total Mark : 5
Marks Obtained : 3

Section 1 : Coding

1. Problem Statement

Bharath is very good at numbers. As he is piled up with many works, he decides to develop programs for a few concepts to simplify his work. As a first step, he tries to arrange even and odd numbers using a linked list. He stores his values in a singly-linked list.

Now he has to write a program such that all the even numbers appear before the odd numbers. Finally, the list is printed in such a way that all even numbers come before odd numbers. Additionally, the even numbers should be in reverse order, while the odd numbers should maintain their original order.

Example Input:

6
3 1 0 4 30 12

Output: 12 30 4 0 3

1

Explanation:

Even elements: 0 4
30 12

Reversed Even elements: 12 30 4 0

Odd elements: 3 1

So the final list becomes: 12 30 4 0 3 1

Input Format

The first line consists of an integer n representing the size of the linked list.

The second line consists of n integers representing the elements separated by space.

Output Format

The output prints the rearranged list separated by a space.

The list is printed in such a way that all even numbers come before odd numbers and the even numbers should be in reverse order, while the odd numbers should maintain their original order.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 6
3 1 0 4 30 12
Output: 12 30 4 0 3 1

Answer

```
// You are using GCC
#include<stdio.h>
#include<stdlib.h>
struct node{
    int data;
```

```
   struct node *next;
};struct

node*ptr,*newnode,*head=NULL,*last=NULL; int main()
{int a;

   scanf("%d",&a);    int even[a],odd[a],n=0,m=0;
for(int i=0;i<a;i++)
   {newnode=(struct node*)malloc(sizeof(struct node));
scanf("%d",&newnode->data); newnode->next=NULL;
if(head==NULL)       {head=newnode;}
      else
      {last->next=newnode;}       last=newnode;
}ptr=head;    while(ptr!=NULL)    {if((ptr->data)
%2==0)
{even[n++]=ptr->data;}
   else
   {odd[m++]=ptr->data;}
      ptr=ptr->next;
   }

   for(int i=n-1;i>=0;i--)
{printf("%d ",even[i]);}
for(int i=0;i<m;i++)    {printf("%d ",odd[i]);}    return 0; }
```

Status : Correct *Marks : 1/1*