

**DATA STRUCTURES LAB**

**WEEK-2**

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**ROLL NO : 19R21A05C2**

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**PROBLEM STATEMENT:**

Write a C program that uses functions to perform the following:

(a)Create a doubly linked list of integers.

(b)Delete a node for a given element

(c)Display the contents of above lists

**CODE:**

#include <stdio.h>

#include <stdlib.h>

struct node

{

int data;

struct node \*next;

struct node \*prev;

}\*head=NULL,\*last,\*n,\*temp,\*prev1;

Void create();

Void delete();

Void traversal();

int ch;

int main()

{

printf("\n1.create\n2.del\n3.traversal\n");

do

{

printf("\nEnter choice\n");

scanf("%d",&ch);

switch(ch)

{

case 1: create();break;

case 2: del();break;

case 3: traversal();break;

}

}while(ch<=3);

}

void create()

{

n=(struct node\*)malloc(sizeof(struct node));

printf("Enter data\n");

scanf("%d",&n->data);

n->next=NULL;

n->prev=NULL;

if(head==NULL)

{

head=n;

last=n;

}

else

{

last->next=n;

n->prev=last;

last=n;

}

}

void del()

{

int key;

printf("Enter the node you want to delete\n");

scanf("%d",&key);

temp=head;

while(temp!=NULL)

{

if(temp->data==key)

break;

else{

prev1=temp;

temp=temp->next;

}

}

prev1->next=temp->next;

(temp->next)->prev=prev1;

free(temp);

}

void traversal()

{

temp=head;

while(temp!=NULL)

{

printf("%d->",temp->data);

temp=temp->next;

}

printf("\n");

temp=last;

while(temp!=NULL)

{

printf("%d->",temp->data);

temp=temp->prev;

}

}

**OUTPUT:**

