**8. Design, Develop and Implement a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: *SSN, Name, Dept, Designation, Sal, PhNo***

**a. Create a DLL of N Employees Data by using *end insertion*.**

**b. Display the status of DLL and count the number of nodes in it**

**c. Perform Insertion and Deletion at End of DLL**

**d. Perform Insertion and Deletion at Front of DLL**

**e. Demonstrate how this DLL can be used as Double Ended Queue**

**f. Exit**

#include<string.h>

int count=0;

struct node

{

struct node \*prev;

int ssn,phno;

float sal;

char name[20],dept[10],desg[20];

struct node \*next;

}\*h,\*temp,\*temp1,\*temp2,\*temp4;

void create()

{

int ssn,phno;

float sal;

char name[20],dept[10],desg[20];

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

temp->prev = NULL;

temp->next = NULL;

printf("\n Enter ssn,name,department, designation, salary and phno of employee : ");

scanf("%d %s %s %s %f %d", &ssn, name,dept,desg,&sal, &phno);

temp->ssn = ssn;

strcpy(temp->name,name);

strcpy(temp->dept,dept);

strcpy(temp->desg,desg);

temp->sal = sal;

temp->phno = phno;

count++;

}

void insertbeg()

{

if (h == NULL)

{

create();

h = temp;

temp1 = h;

}

else

{

create();

temp->next = h;

h->prev = temp;

h = temp;

}

}

void insertend()

{

if(h==NULL)

{

create();

h = temp;

temp1 = h;

}

else

{

create();

temp1->next = temp;

temp->prev = temp1;

temp1 = temp;

}

}

void displaybeg()

{

temp2 =h;

if(temp2 == NULL)

{

printf("List empty to display \n");

return;

}

printf("\n Linked list elements from begining : \n");

while (temp2!= NULL)

{

printf("%d %s %s %s %f %d\n", temp2->ssn, temp2->name,temp2->dept,temp2->desg,

temp2->sal, temp2->phno );

temp2 = temp2->next;

}

printf(" No of employees = %d ", count);

}

int deleteend()

{

struct node \*temp;

temp=h;

if(temp->next==NULL)

{

free(temp);

h=NULL;

return 0;

}

else

{

temp2=temp1->prev;

temp2->next=NULL;

printf("%d %s %s %s %f %d\n", temp1->ssn, temp1->name,temp1->dept,

temp1->desg,temp1->sal, temp1->phno );

free(temp1);

}

count--;

return 0;

}

int deletebeg()

{

struct node \*temp;

temp=h;

if(temp->next==NULL)

{

free(temp);

h=NULL;

}

else

{

h=h->next;

printf("%d %s %s %s %f %d", temp->ssn, temp->name,temp->dept, temp->desg, temp->sal, temp->phno );

free(temp);

}

count--;

return 0;

}

void main()

{

int ch,n,i;

h=NULL;

temp = temp1 = NULL;

printf("-----------------MENU--------------------\n");

printf("\n 1 â€“ create a DLL of n emp");

printf("\n 2 - Display from beginning");

printf("\n 3 - Insert at end");

printf("\n 4 - delete at end");

printf("\n 5 - Insert at beg");

printf("\n 6 - delete at beg");

printf("\n 7 - exit\n");

printf("------------------------------------------\n");

while (1)

{

printf("\n Enter choice : ");

scanf("%d", &ch);

switch (ch)

{

case 1:

printf("\n Enter no of employees : ");

scanf("%d", &n);

for(i=0;i<n;i++)

insertend();

break;

case 2: displaybeg();

break;

case 3: insertend();

break;

case 4: deleteend();

break;

case 5: insertbeg();

break;

case 6: deletebeg();

break;

case 7: exit(0);

default: printf("wrong choice\n");

}

}

}

**Output:**

root:~/dslab #gedit dlink.c

root:~/dslab #cc dlink.c

root:~/dslab # ./a.out

-----------------MENU--------------------

1 –Create a DLL of n emp

2 - Display from beginning

3 - Insert at end

4 - Delete at end

5 - Insert at beg

6 - Delete at beg

7 - exit

------------------------------------------

Enter choice : 1

Enter no of employees : 2

Enter ssn,name,department, designation, salary and phno of employee :

1 RAJ SALES MANAGER 15000 911

Enter ssn,name,department, designation, salary and phno of employee :

2 RAVI HR ASST 10000 123

Enter choice : 2

Linked list elements from begining :

1 RAJ SALES MANAGER 15000.000000 911

2 RAVI HR ASST 10000.000000 123

No of employees = 2

Enter choice : 3

Enter ssn,name,department, designation, salary and phno of employee :

3 RAM MARKET MANAGER 50000 111

Enter choice : 2

Linked list elements from begining :

1 RAJ SALES MANAGER 15000.000000 911

2 RAVI HR ASST 10000.000000 123

3 RAM MARKET MANAGER 50000.000000 111

No of employees = 3

Enter choice : 4

3 RAM MARKET MANAGER 50000.000000 111

Enter choice : 2

Linked list elements from begining :

1 RAJ SALES MANAGER 15000.000000 911

2 RAVI HR ASST 10000.000000 123

No of employees = 2

Enter choice : 5

Enter ssn,name,department, designation, salary and phno of employee :

0 RAGHU EXE TRAINEE 2000 133

Enter choice : 2

Linked list elements from begining :

0 RAGHU EXE TRAINEE 2000.000000 133

1 RAJ SALES MANAGER 15000.000000 911

2 RAVI HR ASST 10000.000000 123

No of employees = 3

Enter choice : 6

0 RAGHU EXE TRAINEE 2000.000000 133

Enter choice : 2

Linked list elements from begining :

1 RAJ SALES MANAGER 15000.000000 911

2 RAVI HR ASST 10000.000000 123

No of employees = 2

Enter choice : 7

Exit