#include<stdio.h>

#include<stdlib.h>

#include<string.h>

int count=0;

struct node

{

int sem,phno;

char name[20],branch[10],usn[20];

struct node \*next;

} \*first=NULL,\*last=NULL,\*temp=NULL,\*temp1;

void create()

{

int semester,phoneno;

char sname[20],sbranch[10],susn[20];

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

printf("\n Enter usn,name, branch, sem, phno of student : ");

scanf("%s %s %s %d %d", susn, sname,sbranch, &semester,&phoneno);

strcpy(temp->usn,susn);

strcpy(temp->name,sname);

strcpy(temp->branch,sbranch);

temp->sem = semester;

temp->phno = phoneno;

temp->next=NULL;

count++;

}

void insert\_atfirst()

{

if (first == NULL)

{

create();

first = temp;

last = first;

}

else

{

create();

temp->next = first;

first = temp;

}

}

void insert\_atlast()

{

if(first==NULL)

{

create();

first = temp;

last = first;

}

else

{

create();

last->next = temp;

last = temp;

}

}

void display()

{

temp1=first;

if(temp1 == NULL)

{

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

return;

}

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

while (temp1!= NULL)

{

printf("%s %s %s %d %d\n", temp1->usn, temp1->name,temp1->branch,

temp1->sem,temp1->phno );

temp1 = temp1->next;

}

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

}

int deleteend()

{

struct node \*temp;

temp=first;

if(temp->next==NULL)

{

free(temp);

first=NULL;

}

else

{

while(temp->next!=last)

temp=temp->next;

printf("%s %s %s %d %d\n", last->usn, last->name,last->branch, last->sem,

last->phno );

free(last);

temp->next=NULL;

last=temp;

}

count--;

return 0;

}

int deletefront()

{

struct node \*temp;

temp=first;

if(temp->next==NULL)

{

free(temp);

first=NULL;

return 0;

}

else

{

first=temp->next;

printf("%s %s %s %d %d", temp->usn, temp->name,temp->branch,temp->sem,

temp->phno );

free(temp);

}

count--;

return 0;

}

void main()

{

int ch,n,i;

first=NULL;

temp = temp1 = NULL;

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

printf("\n 1- create a SLL 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 students : ");

scanf("%d", &n);

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

insert\_atfirst();

break;

case 2:

display();

break;

case 3:

insert\_atlast();

break;

case 4:

deleteend();

break;

case 5:

insert\_atfirst();

break;

case 6:

deletefront();

break;

case 7:

exit(0);

default:

printf("wrong choice\n");

}

}

}