#include<stdio.h>

#include<stdlib.h>

#include<string.h>

struct student {

char usn[20];

char name[50];

char programme[20];

int sem;

char phNo[15];

struct student \*next;

};

struct student \*head = NULL;

void insertFront() {

struct student \*newStudent = (struct student\*)malloc(sizeof(struct student));

printf("Enter USN: ");

scanf("%s", newStudent->usn);

printf("Enter Name: ");

scanf("%s", newStudent->name);

printf("Enter Programme: ");

scanf("%s", newStudent->programme);

printf("Enter Semester: ");

scanf("%d", &newStudent->sem);

printf("Enter Phone Number: ");

scanf("%s", newStudent->phNo);

newStudent->next = head;

head = newStudent;

}

void display() {

struct student \*temp = head;

int count = 0;

printf("\nUSN\tName\tProgramme\tSemester\tPhone Number\n");

while(temp != NULL) {

printf("%s\t%s\t%s\t\t%d\t\t%s\n", temp->usn, temp->name, temp->programme, temp->sem, temp->phNo);

temp = temp->next;

count++;

}

printf("\nNumber of students: %d\n", count);

}

void insertEnd() {

struct student \*newStudent = (struct student\*)malloc(sizeof(struct student));

printf("Enter USN: ");

scanf("%s", newStudent->usn);

printf("Enter Name: ");

scanf("%s", newStudent->name);

printf("Enter Programme: ");

scanf("%s", newStudent->programme);

printf("Enter Semester: ");

scanf("%d", &newStudent->sem);

printf("Enter Phone Number: ");

scanf("%s", newStudent->phNo);

newStudent->next = NULL;

if (head == NULL) {

head = newStudent;

} else {

struct student \*temp = head;

while (temp->next != NULL) {

temp = temp->next;

}

temp->next = newStudent;

}

}

void deleteFront() {

if (head == NULL) {

printf("List is empty\n");

} else {

struct student \*temp = head;

head = head->next;

free(temp);

}

}

void deleteEnd() {

if (head == NULL) {

printf("List is empty\n");

} else {

struct student \*temp = head;

struct student \*prev = NULL;

while (temp->next != NULL) {

prev = temp;

temp = temp->next;

}

if (prev == NULL) {

head = NULL;

} else {

prev->next = NULL;

}

free(temp);

}

}

int main() {

int choice;

do {

printf("\nMenu:\n");

printf("1. Insert at Front\n");

printf("2. Display\n");

printf("3. Insert at End\n");

printf("4. Delete from Front\n");

printf("5. Delete from End\n");

printf("6. Exit\n");

printf("Enter your choice: ");

scanf("%d", &choice);

switch(choice) {

case 1:

insertFront();

break;

case 2:

display();

break;

case 3:

insertEnd();

break;

case 4:

deleteFront();

break;

case 5:

deleteEnd();

break;

case 6:

printf("Exiting program\n");

break;

default:

printf("Invalid choice\n");

}

} while (choice != 6);

return 0;

}