# Student Record Management System (C Code)

#include <stdio.h>  
#include <stdlib.h>  
#include <string.h>  
  
// Structure to store student details  
struct Student {  
 int rollNo;  
 char name[50];  
 float marks;  
 struct Student \*next;  
};  
  
// Head pointer for linked list  
struct Student \*head = NULL;  
  
// Function to add a student record  
void addStudent(int rollNo, char name[], float marks) {  
 struct Student \*newStudent = (struct Student\*)malloc(sizeof(struct Student));  
 newStudent->rollNo = rollNo;  
 strcpy(newStudent->name, name);  
 newStudent->marks = marks;  
 newStudent->next = head;  
 head = newStudent;  
 printf("\n✅ Record added successfully!\n");  
}  
  
// Function to display all records  
void displayStudents() {  
 struct Student \*temp = head;  
 if (temp == NULL) {  
 printf("\n⚠️ No student records found!\n");  
 return;  
 }  
 printf("\n📘 Student Records:\n");  
 printf("--------------------------------------------\n");  
 printf("%-10s %-20s %-10s\n", "Roll No", "Name", "Marks");  
 printf("--------------------------------------------\n");  
 while (temp != NULL) {  
 printf("%-10d %-20s %-10.2f\n", temp->rollNo, temp->name, temp->marks);  
 temp = temp->next;  
 }  
 printf("--------------------------------------------\n");  
}  
  
// Function to delete a student record  
void deleteStudent(int rollNo) {  
 struct Student \*temp = head, \*prev = NULL;  
 if (temp == NULL) {  
 printf("\n⚠️ No records to delete!\n");  
 return;  
 }  
  
 while (temp != NULL && temp->rollNo != rollNo) {  
 prev = temp;  
 temp = temp->next;  
 }  
  
 if (temp == NULL) {  
 printf("\n❌ Student with Roll No %d not found!\n", rollNo);  
 return;  
 }  
  
 if (prev == NULL)  
 head = temp->next;  
 else  
 prev->next = temp->next;  
  
 free(temp);  
 printf("\n🗑️ Record deleted successfully!\n");  
}  
  
// Function to search for a student  
void searchStudent(int rollNo) {  
 struct Student \*temp = head;  
 while (temp != NULL) {  
 if (temp->rollNo == rollNo) {  
 printf("\n✅ Record Found:\n");  
 printf("Roll No: %d\n", temp->rollNo);  
 printf("Name: %s\n", temp->name);  
 printf("Marks: %.2f\n", temp->marks);  
 return;  
 }  
 temp = temp->next;  
 }  
 printf("\n❌ Student with Roll No %d not found!\n", rollNo);  
}  
  
// Main function  
int main() {  
 int choice, rollNo;  
 char name[50];  
 float marks;  
  
 while (1) {  
 printf("\n==============================");  
 printf("\n Student Record Management ");  
 printf("\n==============================");  
 printf("\n1. Add Student");  
 printf("\n2. Display Students");  
 printf("\n3. Search Student");  
 printf("\n4. Delete Student");  
 printf("\n5. Exit");  
 printf("\nEnter your choice: ");  
 scanf("%d", &choice);  
  
 switch (choice) {  
 case 1:  
 printf("\nEnter Roll No: ");  
 scanf("%d", &rollNo);  
 printf("Enter Name: ");  
 scanf(" %[^  
]s", name);  
 printf("Enter Marks: ");  
 scanf("%f", &marks);  
 addStudent(rollNo, name, marks);  
 break;  
  
 case 2:  
 displayStudents();  
 break;  
  
 case 3:  
 printf("\nEnter Roll No to search: ");  
 scanf("%d", &rollNo);  
 searchStudent(rollNo);  
 break;  
  
 case 4:  
 printf("\nEnter Roll No to delete: ");  
 scanf("%d", &rollNo);  
 deleteStudent(rollNo);  
 break;  
  
 case 5:  
 printf("\n👋 Exiting program... Goodbye!\n");  
 exit(0);  
  
 default:  
 printf("\n⚠️ Invalid choice! Try again.\n");  
 }  
 }  
  
 return 0;  
}