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#include <stdio.h>
#include <string.h>

#define MAX 100
struct Student {
int roll;
char name[50];
float marks[3];
float total;
float average;
};n

struct Student db[MAX];
int count = 0;
// Function Prototypes
void addStudent();
void displayStudents();
void searchStudent();
void modifyStudent();
void sortStudents();

int main() {
int choice;

do {

printf("\n===== Student Result Management System =====\n");
printf("1. Add Student\n");
printf("2. Display Students\n");
printf("3. Search by Roll No\n");
printf("4. Modify Record\n");
printf("5. Sort by Performance\n");
printf("6. Exit\n");
printf("Enter your choice: ");
scanf("%d", &choice);

// Handle user choice
switch (choice) {
case 1: addStudent(); break;
case 2: displayStudents(); break;
case 3: searchStudent(); break;
case 4: modifyStudent(); break;
case 5: sortStudents(); break;
case 6: printf("Exiting program...\n"); break;
default: printf("Invalid choice. Try again.\n");
}
} while (choice != 6);

return 0;
}

// Add Student
void addStudent() {

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if (count >= MAX) {
printf("Database full!\n");
return;
}

printf("Enter roll number: ");
scanf("%d", &db[count].roll);

printf("Enter name: ");
scanf("%[^\n]", db[count].name);

db[count].total = 0;
for (int i = 0; i < 3; i++) {
printf("Enter marks for subject %d: ", i + 1);
scanf("%f", &db[count].marks[i]);
db[count].total += db[count].marks[i];
}

db[count].average = db[count].total / 3.0;
count++;
printf("Student added successfully.\n");
}

void displayStudents() {
if (count == 0) {
printf("No students in database.\n");
return;
}

printf("\n%-5s %-20s %-10s %-10s\n", "Roll", "Name", "Total", "Average");

for (int i = 0; i < count; i++) {
printf("%-5d %-20s %-10.2f %-10.2f\n",
db[i].roll, db[i].name, db[i].total, db[i].average);
}
}

// Search Student
void searchStudent() {
int roll, found = 0;
printf("Enter roll number to search: ");
scanf("%d", &roll);

for (int i = 0; i < count; i++) {
if (db[i].roll == roll) {
printf("Student found:\n");
printf("Name: %s\n", db[i].name);
printf("Total: %.2f\n", db[i].total);
printf("Average: %.2f\n", db[i].average);
found = 1;
break;
}
}
}

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if (!found)
printf("Student not found.\n");
}
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// Modify Student

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void modifyStudent() {
int roll, found = 0;
printf("Enter roll number to modify: ");
scanf("%d", &roll);
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for (int i = 0; i < count; i++) {
if (db[i].roll == roll) {
printf("Enter new name: ");
scanf(" %[^\n]", db[i].name);
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db[i].total = 0;
for (int j = 0; j < 3; j++) {
printf("Enter new marks for subject %d: ", j + 1);
scanf("%f", &db[i].marks[j]);
db[i].total += db[i].marks[j];
}
db[i].average = db[i].total / 3.0;
printf("Record updated.\n");
found = 1;
break;
}
}
```

```
if (!found)
printf("Student not found.\n");
}
```

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void sortStudents() {
struct Student temp;
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for (int i = 0; i < count - 1; i++) {
for (int j = 0; j < count - i - 1; j++) {
if (db[j].total < db[j + 1].total) {
temp = db[j];
db[j] = db[j + 1];
db[j + 1] = temp;
}
}
}
```

```
printf("Records sorted by performance.\n");
}
```