Roll NO:27

NAME : Mali Anjali Prakash

DIV: FYMCA-A

Assignment no -10

#include <stdio.h>

#include <string.h>

#define MAX\_STUDENTS 100

// Define a structure to store student information

typedef struct {

    int rollNo;

    char name[50];

    float percentage;

} Student;

// Function to swap two students

void swap(Student \*a, Student \*b) {

    Student temp = \*a;

    \*a = \*b;

    \*b = temp;

}

// Bubble sort function to sort students based on percentage in descending order

void bubbleSort(Student students[], int n) {

    for (int i = 0; i < n - 1; i++) {

        for (int j = 0; j < n - 1 - i; j++) {

            if (students[j].percentage < students[j + 1].percentage) {

                swap(&students[j], &students[j + 1]);

            }

        }

    }

}

int main() {

    int n;

    // Input the number of students

    printf("Enter number of students: ");

    scanf("%d", &n);

    // Ensure there are enough students to find the top 10

    if (n < 10) {

        printf("There are fewer than 10 students. Please input at least 10 students.\n");

        return 1;

    }

    Student students[MAX\_STUDENTS];

    // Input student data

    for (int i = 0; i < n; i++) {

        printf("\nEnter details for student %d:\n", i + 1);

        printf("Roll No: ");

        scanf("%d", &students[i].rollNo);

        getchar();  // Consume the newline character left by scanf

        printf("Name: ");

        fgets(students[i].name, 50, stdin);

        students[i].name[strcspn(students[i].name, "\n")] = '\0';  // Remove the trailing newl12ine

        printf("Percentage: ");

        scanf("%f", &students[i].percentage);

    }

    // Sort the students by percentage using Bubble Sort

    bubbleSort(students, n);

    // Display the top 10 students

    printf("\nTop 10 Toppers:\n");

    for (int i = 0; i < 10 && i < n; i++) {

        printf("\nRank %d:\n", i + 1);

        printf("Roll No: %d\n", students[i].rollNo);

        printf("Name: %s\n", students[i].name);

        printf("Percentage: %.2f\n", students[i].percentage);

    }

    return 0;

}







