

Problem No: 15

Problem Name: Write a C program to store information of student by handling files and modifying data.

Input

Menu:

1. Add student
2. Display all students
3. Modify student data
4. Exit

Enter your choice:

Ouput

Enter your choice: 1

Enter student name: rahat

Enter roll number: 1045

Enter marks: 60

Student record added successfully.

Source Code:

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
struct Student {
```

```
    char name[50];
```

```
    int rollNumber;
```

```
    float marks;
```

```
};
```

```
void addStudent(FILE *file) {
```

```

    struct Student newStudent;

    printf("Enter student name: ");
    scanf("%s", newStudent.name);


    printf("Enter roll number: ");
    scanf("%d", &newStudent.rollNumber);


    printf("Enter marks: ");
    scanf("%f", &newStudent.marks);
    fwrite(&newStudent, sizeof(struct Student), 1, file);


    printf("Student record added successfully.\n");
}

void displayStudents(FILE *file) {
    struct Student currentStudent;
    rewind(file);
    while (fread(&currentStudent, sizeof(struct Student), 1, file) == 1) {
        printf("Name: %s\n", currentStudent.name);
        printf("Roll Number: %d\n", currentStudent.rollNumber);
        printf("Marks: %.2f\n", currentStudent.marks);
        printf("\n");
    }
}

void modifyStudent(FILE *file, int rollNumber) {
    struct Student currentStudent;
    long int position;
    rewind(file);

```

```

while (fread(&currentStudent, sizeof(struct Student), 1, file) == 1) {
    if (currentStudent.rollNumber == rollNumber) {
        position = ftell(file) - sizeof(struct Student);
        break;
    }
}

if (feof(file)) {
    printf("Student with roll number %d not found.\n", rollNumber);
    return;
}

printf("Enter new name: ");
scanf("%s", currentStudent.name);

printf("Enter new marks: ");
scanf("%f", &currentStudent.marks);
fseek(file, position, SEEK_SET);
fwrite(&currentStudent, sizeof(struct Student), 1, file);

printf("Student record modified successfully.\n");
}

int main() {
    FILE *file;

    int choice, rollNumber;

    file = fopen("student_records.dat", "rb+");

    if (file == NULL) {
        file = fopen("student_records.dat", "wb+");
    }
}

```

```
}
```

```
do {
```

```
    printf("\nMenu:\n");
```

```
    printf("1. Add student\n");
```

```
    printf("2. Display all students\n");
```

```
    printf("3. Modify student data\n");
```

```
    printf("4. Exit\n");
```

```
    printf("Enter your choice: ");
```

```
    scanf("%d", &choice);
```

```
switch (choice) {
```

```
    case 1:
```

```
        addStudent(file);
```

```
        break;
```

```
    case 2:
```

```
        displayStudents(file);
```

```
        break;
```

```
    case 3:
```

```
        printf("Enter the roll number of the student to modify: ");
```

```
        scanf("%d", &rollNumber);
```

```
        modifyStudent(file, rollNumber);
```

```
        break;
```

```
    case 4:
```

```
        printf("Exiting program.\n");
```

```
        break;
```

```
    default:
```

```
        printf("Invalid choice. Please enter a valid option.\n");
```

```
    }  
} while (choice != 4);  
  
fclose(file);  
  
return 0;  
}
```

Result and Analysis:

This program uses structure to add student information. It uses file to point for arguments. The rewind function is used for indicating the pointer to the beginning of a file. It uses fread to re-read the file and fseek to re seek the file and creates a menu folder to make choice for the user.