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16. Develop a C program for implementing random access file for processing the employee details.

## **Aim**

To develop a C program to manage employee records using a random access file for adding, viewing, and modifying employee details efficiently.

## **Algorithm**

1. **Start**
2. Define a structure for employee details with fields like ID, name, and salary.
3. Open a binary file in read/write mode.
4. Provide a menu-driven interface:
  - Add a new employee
  - Display employee details
  - Modify employee details
  - Exit
5. For each menu option:
  - **Add:** Append employee details to the file.
  - **View:** Read the file and display all records.
  - **Modify:** Locate the record by ID, update it, and rewrite it in place.
6. Close the file and end the program.

## **Procedure**

1. Start the program and include the necessary header files.
2. Define a structure for employee details.
3. Open the binary file using `fopen()` in read/write mode.
4. Implement menu-driven functionality:
  - Use `fwrite()` for adding records.
  - Use `fread()` to display or locate records.
  - Use `fseek()` to navigate to specific records for modification.
5. Ensure proper file handling and error checking.
6. Run the program and test the menu options.

## **Code:**

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

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

```
#include <string.h>
```

```
struct Employee {  
    int id;  
    char name[50];  
    float salary;  
};
```

```
void addEmployee(FILE *file) {  
    struct Employee emp;  
    printf("Enter ID: ");  
    scanf("%d", &emp.id);  
    printf("Enter Name: ");  
    scanf("%s", emp.name);  
    printf("Enter Salary: ");  
    scanf("%f", &emp.salary);  
    fseek(file, 0, SEEK_END);  
    fwrite(&emp, sizeof(emp), 1, file);  
}
```

```
void displayEmployees(FILE *file) {  
    struct Employee emp;  
    rewind(file);  
    while (fread(&emp, sizeof(emp), 1, file)) {
```

```
        printf("ID: %d, Name: %s, Salary: %.2f\n", emp.id, emp.name, emp.salary);
    }
}
```

```
void modifyEmployee(FILE *file) {
    struct Employee emp;
    int id, found = 0;
    printf("Enter ID to modify: ");
    scanf("%d", &id);
    rewind(file);
    while (fread(&emp, sizeof(emp), 1, file)) {
        if (emp.id == id) {
            found = 1;
            printf("Enter New Name: ");
            scanf("%s", emp.name);
            printf("Enter New Salary: ");
            scanf("%f", &emp.salary);
            fseek(file, -sizeof(emp), SEEK_CUR);
            fwrite(&emp, sizeof(emp), 1, file);
            break;
        }
    }
    if (!found) {
```

```

        printf("Employee with ID %d not found.\n", id);
    }
}

int main() {
    FILE *file = fopen("employees.dat", "rb+");

    if (!file) {
        file = fopen("employees.dat", "wb+");

        if (!file) {
            printf("Error opening file.\n");

            return 1;
        }
    }

    int choice;

    while (1) {
        printf("\n1. Add Employee\n2. Display Employees\n3. Modify Employee\n4. Exit\n");

        printf("Enter your choice: ");

        scanf("%d", &choice);

        switch (choice) {
            case 1: addEmployee(file); break;

            case 2: displayEmployees(file); break;

```

```

        case 3: modifyEmployee(file); break;

        case 4: fclose(file); return 0;

        default: printf("Invalid choice.\n");

    }

}

}

```

## Result

The program successfully implements a random access file for employee details. It allows adding new employee records, displaying all records, and modifying existing records based on their unique ID.

## Output:

```

OnlineGDB
online compiler and debugger for c/c++

Welcome, Revi Thimma Reddy

Create New Project
My Projects
Classroom new
Learn Programming
Programming Questions
Upgrade
Logout

main.c employees.dat
1

1. Add Employee
2. Display Employees
3. Modify Employee
4. Exit
Enter your choice: 5
Invalid choice.

1. Add Employee
2. Display Employees
3. Modify Employee
4. Exit
< Enter your choice: 4

...Program finished with exit code 0
Press ENTER to exit console.

```

