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---------------------------------------------------------------------
Name - Gaurav Ghati
Batch - L10
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#include <stdio.h>
#include <string.h>
#include <fcntl.h>
#include <sys/stat.h>
#include <sys/types.h>
#include <unistd.h>

char filename[100];
struct employee {
        int id;
        char name[15], branch[15];
};

void insert()
{
        struct employee e;
        int n, i = 0;
        int fp = open(filename, O_CREAT, S_IRUSR | S_IWUSR);

        close(fp);
        fp = open(filename, O_WRONLY|O_APPEND, S_IRUSR | S_IWUSR);
        if(fp < 0) {
        printf("\nCouldn't open file!\n");
        return;
        }

        printf("\nEnter number of records to be inserted: ");
        scanf("%d", &n);
        while(i < n) {
        printf("\nEnter information for record %d:", i);
        printf("\nEnter employee ID:\n");
        scanf("%d", &e.id);
        printf("Enter name:\n");
        scanf("%s", e.name);
        printf("Enter branch:\n");
        scanf("%s", e.branch);
        write(fp, &e, sizeof(e));
        i++;
        }
```

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        close(fp);
}

void display()  {
        int fp, rd;
        struct employee e;
        fp = open(filename, O_RDONLY, S_IRUSR);
        read(fp, &e, sizeof(e));
        printf("\nID\tName\tBranch");
        do
        printf("\n%d \t %s \t\t %s", e.id, e.name, e.branch);
        while(read(fp, &e, sizeof(e)) > 0);
}

void modify() {
        int fp1, fp2, rd, wr, r, flag = 0;
        struct employee e;
        fp1 = open(filename, O_EXCL|O_RDONLY);
        fp2 = open("temp.txt", O_CREAT|O_WRONLY);

        printf("\nEnter ID to modify: ");
        scanf("%d", &r);
        read(fp1, &e, sizeof(e));

        do {
        if(e.id == r) {
        flag = 1;
        printf("\nEnter modified name: ");
        scanf("%s", e.name);
        printf("\nEnter modified branch: ");
        scanf("%s", e.branch);
        }
        write(fp2, &e, sizeof(e));
        } while(read(fp1, &e, sizeof(e)) > 0);

        if(flag)
        printf("\nModification was carried out successfully!");
        else
        printf("\nModification was unsuccessful!");

        close(fp1);
        close(fp2);
        remove(filename);
        rename("temp.txt", filename);
```

```
}

void delete() {
        int fp1, fp2, rd, wr, r, flag = 0;
        struct employee e;
        fp1 = open(filename, O_EXCL|O_RDONLY);
        fp2 = open("temp.txt", O_CREAT|O_WRONLY);
        printf("\nEnter ID to delete: ");
        scanf("%d", &r);

        read(fp1, &e, sizeof(e));
        do {
        if(e.id != r) {
        flag = 1;
        write(fp2, &e, sizeof(e));
        }
        } while(read(fp1, &e, sizeof(e)) > 0);

        if(flag)
        printf("\nDeletion was carried out successfully!");
        else
        printf("\nDeletion was unsuccessful!");

        close(fp1);
        close(fp2);
        remove(filename);
        rename("temp.txt", filename);
}

int main() {
        int choice;
        printf("\nEnter filename: ");
        scanf("%s", filename);

        while(1) {
        printf("\nChoose from the following: ");
        printf("\n1. Insert");
        printf("\n2. Display");
        printf("\n3. Modify");
        printf("\n4. Delete");
        printf("\n5. Exit");
        printf("\nEnter your choice: ");
        scanf("%d", &choice);
```

```
        switch(choice) {
        case 1:
                insert();
                break;
        case 2:
                display();
                break;
        case 3:
                modify();
                break;
        case 4:
                delete();
                break;
        case 5:
                return 0;
        default:
                printf("\nEnter valid choice!");
        }
        }
        return 0;
}
```

OUTPUT:

```
gauravghati@gauravghati:~/OS-Programming/assignment9-FileSystem$ gcc 33223_assignment9.c
gauravghati@gauravghati:~/OS-Programming/assignment9-FileSystem$ ./a.out

Enter filename: input.txt

Choose from the following:
1. Insert
2. Display
3. Modify
4. Delete
5. Exit
Enter your choice: 1

Enter number of records to be inserted: 2

Enter information for record 0:
Enter employee ID:
1
Enter name:
gaurav
Enter branch:
cd

Enter information for record 1:
Enter employee ID:
2
Enter name:
puneet
Enter branch:
it

Choose from the following:
1. Insert
2. Display
3. Modify
4. Delete
5. Exit
Enter your choice: 2
```

```
1. Insert
2. Display
3. Modify
4. Delete
5. Exit
Enter your choice: 2

ID      Name    Branch
1        gaurav                 cd
2        puneet                 it
Choose from the following:
1. Insert
2. Display
3. Modify
4. Delete
5. Exit
Enter your choice: 4

Enter ID to delete: 1

Deletion was carried out successfully!
Choose from the following:
1. Insert
2. Display
3. Modify
4. Delete
5. Exit
Enter your choice: 2

ID      Name    Branch
2        puneet                 it
Choose from the following:
1. Insert
2. Display
3. Modify
4. Delete
5. Exit
Enter your choice: 5
gauravghati@gauravghati:~/OS-Programming/assignment9-FileSystem$
```