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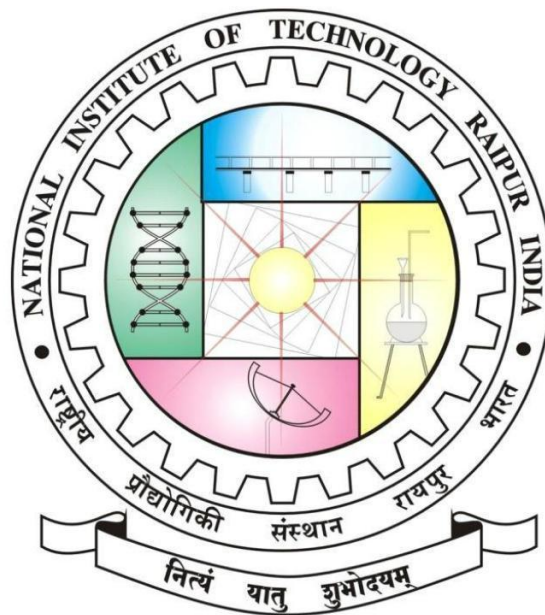
DEPARTMENT OF COMPUTER APPLICATIONS

Student Management System

A term paper was submitted in the fulfilment of the requirement for the award of the
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Report

Simple student management system in C with File I/O

This is a simple student database management system in a C programme. In this mini-project users can

- Create a student account
- Display all students information
- Update a student's information
- Delete a student's account
- Search a student's information
- Search department wise students information.

I have divided the whole program into five functions:

```
void createAccount(): Called when we have to create an account

void displayInformation(): Displays the Information which is
stored

void updateInformation(): Update the Information

void deleteInformation(): Delete a particular student
Information

void searchInformation(): Searches By Department or by Student
ID
```

void: non-return type.

Here I'm using structure variables to fetch the data from a file named studentInfo.bin and displaying it on screen.

Output

```
===== Student Management System NIT Raipur =====

    1. Create Student Account
    2. Display All Students Information
    3. Update Student Information
    4. Delete Student Information
    5. Search Student Information
    0. Exit

Enter Your Option:
```

Entered 1

```
===== Create Student Account =====

Enter Student's Name: Dummy Name
Enter Student's ID: 5424456
Enter Student's Department: MCA
Enter Student's Address: Dummy Address
Enter Student's Contact Number: 1234567890
Enter Student's Current CGPA: 9.8

Informations have been stored successfully

Enter any keys to continue.....
```

Press any key and then enter 2

```
===== All Students Information =====

Name                ID          DepartmentAddress                Contact          CGPA
-----
Dummy Name          5424456      MCA          Dummy Address                1234567890      9.80

Enter any keys to continue.....
```

Press any key and then enter 5

```
===== Search Student Information =====

Choose your option:
1.Search by Student ID
2.Search by Student Department

Enter Your Option:
```

Enter 2

===== Search Student Information =====

Enter Student Department: MCA

Name	ID	Department	Address	Contact	CGPA

Dummy Name	5424456	MCA	Dummy Address	1234567890	9.80

Enter any keys to continue.....

Enter MCA

Code

```
#include <stdio.h>
#include <string.h>
#include <conio.h>
typedef struct Student
{
    char studentName[50];
    char studentID[15];
    char studentDepartment[10];
    char studentAddress[100];
    char studentContactNumber[15];
    float studentCGPA;
} Student;

void createAccount();
void displayInformation();
void updateInformation();
void deleteInformation();
void searchInformation();

int main()
{
    char option;
    while (option != '0')
    {
        system("cls");
        printf("\t\t\t==== Student Management System NIT Raipur\n");

        printf("\n\t\t\t1. Create Student Account");
        printf("\n\t\t\t2. Display All Students Information");
        printf("\n\t\t\t3. Update Student Information");
        printf("\n\t\t\t4. Delete Student Information");
        printf("\n\t\t\t5. Search Student Information");
        printf("\n\t\t\t0. Exit");
        printf("\n\n\n\t\t\tEnter Your Option: ");
        scanf(" %c", &option);
        switch (option)
        {
            case '1':
                createAccount();
                break;
            case '2':
                displayInformation();
```

```

        break;
    case '3':
        updateInformation();
        break;
    case '4':
        deleteInformation();
        break;
    case '5':
        searchInformation();
        break;
    case '0':
        printf("\n\t\t\t\t===== Thank You =====");
        break;
    default:
        printf("\n\t\t\t\tInvalid Option, Please Enter Right Option
!\n");
    }
}
return 0;
}

```

```

void createAccount()
{
    FILE *fileOne = fopen("studentInfo.bin", "ab+");
    if (fileOne == NULL)
    {
        printf("\n\t\t\t\tError !\n");
    }
    Student stundentInformation;
    system("cls");
    printf("\t\t\t\t===== Create Student Account =====\n");
    printf("\n\t\t\t\tEnter Student's Name: ");
    getchar();
    gets(stundentInformation.studentName);
    printf("\t\t\t\tEnter Student's ID: ");
    gets(stundentInformation.studentID);
    printf("\t\t\t\tEnter Student's Department: ");
    gets(stundentInformation.studentDepartment);
    printf("\t\t\t\tEnter Student's Address: ");
    gets(stundentInformation.studentAddress);
    printf("\t\t\t\tEnter Student's Contact Number: ");
    gets(stundentInformation.studentContactNumber);
    printf("\t\t\t\tEnter Student's Current CGPA: ");
}

```

```
scanf("%f", &studentInformation.studentCGPA);  
fwrite(&studentInformation, sizeof(studentInformation), 1,  
fileOne);  
  
printf("\n\n\t\t\t\t\tInformations have been stored successfully\n");  
printf("\n\n\t\t\t\t\tEnter any keys to continue.....");  
getch();  
fclose(fileOne);  
}  
  
void displayInformation()  
{  
    FILE *fileOne = fopen("studentInfo.bin", "rb");  
    if (fileOne == NULL)  
    {  
        printf("\n\t\t\t\t\tError !\n");  
    }  
    Student studentInformation;  
    system("cls");  
    printf("\t\t\t\t\t===== All Students Information =====\n");  
    printf("\n\n\t\t\t%-20s%-13s%-10s%-25s%-15s%-s\n", "Name", "ID",  
"Department", "Address", "Contact", "CGPA");  
  
printf("\t\t\t-----  
-----");  
    while (fread(&studentInformation, sizeof(studentInformation), 1,  
fileOne) == 1)  
    {  
        printf("\n\n\t\t\t%-20s%-13s%-10s%-25s%-15s%-.2f",  
studentInformation.studentName, studentInformation.studentID,  
studentInformation.studentDepartment,  
studentInformation.studentAddress,  
studentInformation.studentContactNumber,  
studentInformation.studentCGPA);  
    }  
    printf("\n\n\t\t\tEnter any keys to continue.....");  
    getch();  
    fclose(fileOne);  
}  
  
void updateInformation()  
{  
    FILE *fileOne = fopen("studentInfo.bin", "rb");  
    FILE *temp = fopen("temp.bin", "wb");
```

```

Student studentInformation, tempInformation;
int choice, flag = 0;
if (fileOne == NULL || temp == NULL)
{
    printf("\n\t\t\tError !\n");
}
system("cls");
printf("\t\t\t==== Update Students Information =====\n");
printf("\n\t\t\tEnter Student's ID: ");
getchar();
gets(tempInformation.studentID);
while (fread(&studentInformation, sizeof(studentInformation), 1,
fileOne) == 1)
{
    if (strcmp(studentInformation.studentID,
tempInformation.studentID) == 0)
    {
        flag++;
        printf("\n\t\t\tChoose your option:\n\t\t\t1.Update Student
Name\n\t\t\t2.Update Student Department\n\t\t\t3.Update Student
Address\n\t\t\t4.Update Student ContactNumber\n\t\t\t5.Update Student
CPGA");

        printf("\n\n\t\t\tEnter Your Option: ");
        scanf("%d", &choice);
        if (choice == 1)
        {
            printf("\n\t\t\tEnter Student's Name to Update: ");
            getchar();
            gets(tempInformation.studentName);
            strcpy(studentInformation.studentName,
tempInformation.studentName);
            fwrite(&studentInformation, sizeof(studentInformation),
1, temp);

            printf("\n\n\t\t\tUpdated successfully!\n\n");
        }
        else if (choice == 2)
        {
            printf("\n\t\t\tEnter Student's Department to Update:
");

            getchar();
            gets(tempInformation.studentDepartment);
            strcpy(studentInformation.studentDepartment,
tempInformation.studentDepartment);

```



```

        fwrite(&studentInformation, sizeof(studentInformation),
1, temp);

        printf("\n\n\t\t\tUpdated successfully!\n\n");
    }
    else if (choice == 3)
    {
        printf("\n\t\t\tEnter Student's Address to Update: ");
        getchar();
        gets(tempInformation.studentAddress);
        strcpy(studentInformation.studentAddress,
tempInformation.studentAddress);
        fwrite(&studentInformation, sizeof(studentInformation),
1, temp);

        printf("\n\n\t\t\tUpdated successfully!\n\n");
    }
    else if (choice == 4)
    {
        printf("\n\t\t\tEnter Student's ContactNumber to
Update: ");

        getchar();
        gets(tempInformation.studentContactNumber);
        strcpy(studentInformation.studentContactNumber,
tempInformation.studentContactNumber);
        fwrite(&studentInformation, sizeof(studentInformation),
1, temp);

        printf("\n\n\t\t\tUpdated successfully!\n\n");
    }
    else if (choice == 5)
    {
        printf("\n\t\t\tEnter Student's CGPA to Update: ");
        scanf("%f", &tempInformation.studentCGPA);
        studentInformation.studentCGPA =
tempInformation.studentCGPA;
        fwrite(&studentInformation, sizeof(studentInformation),
1, temp);

        printf("\n\n\t\t\tUpdated successfully!\n\n");
    }
    else
    {
        printf("\n\t\t\tInvalid Option.");
        fwrite(&studentInformation, sizeof(studentInformation),
1, temp);
    }
}

```

```

        }
        else
        {
            fwrite(&studentInformation, sizeof(studentInformation), 1,
temp);
        }
    }

fclose(fileOne);
fclose(temp);
remove("studentInfo.bin");
rename("temp.bin", "studentInfo.bin");
if (flag == 0)
{
    printf("\n\t\t\tStudent Id is not found");
}
printf("\n\n\t\t\tEnter any keys to continue.....");
getch();
}

void deleteInformation()
{
    FILE *fileOne = fopen("studentInfo.bin", "rb");
    FILE *temp = fopen("temp.bin", "wb");
    Student studentInformation, tempInformation;
    int choice, flag = 0;
    if (fileOne == NULL || temp == NULL)
    {
        printf("\n\t\t\tError !\n");
    }
    system("cls");
    printf("\t\t\t\t==== Delete Student Information =====\n");
    printf("\n\t\t\tEnter Student's ID: ");
    getchar();
    gets(tempInformation.studentID);
    while (fread(&studentInformation, sizeof(studentInformation), 1,
fileOne) == 1)
    {
        if (strcmp(studentInformation.studentID,
tempInformation.studentID) == 0)
        {
            flag++;

```

```

        printf("\n\t\t\tAre you sure to delete
??\n\t\t\t1.Yes\n\t\t\t2.Back\n\t\t\tEnter Your Option: ");
        scanf("%d", &choice);
        if (choice == 1)
        {
            printf("\n\n\t\t\tInformation has been deleted
successfully!\n\n");
        }
        else if (choice == 2)
        {
            fwrite(&studentInformation, sizeof(studentInformation),
1, temp);
        }
        else
        {
            printf("\n\t\t\tInvalid Option");
            fwrite(&studentInformation, sizeof(studentInformation),
1, temp);
        }
    }
    else
    {
        fwrite(&studentInformation, sizeof(studentInformation), 1,
temp);
    }
}
fclose(fileOne);
fclose(temp);
remove("studentInfo.bin");
rename("temp.bin", "studentInfo.bin");
if (flag == 0)
{
    printf("\n\t\t\tStudent Id is not found");
}
printf("\n\n\t\t\tEnter any keys to continue.....");
getch();
}

void searchInformation()
{
    FILE *fileOne = fopen("studentInfo.bin", "rb");
    Student studentInformation;
    int choice, flag = 0;

```

```

char studentID[20], studentDepartment[10];
if (fileOne == NULL)
{
    printf("\n\t\t\t\tError !\n");
}
system("cls");
printf("\t\t\t\t\t==== Search Student Information =====\n");
printf("\n\t\t\t\tChoose your option:\n\t\t\t\t1.Search by Student
ID\n\t\t\t\t2.Search by Student Department");
printf("\n\n\t\t\t\tEnter Your Option: ");
scanf("%d", &choice);
if (choice == 1)
{
    system("cls");
    printf("\t\t\t\t\t==== Search Student Information =====\n");
    printf("\n\n\t\t\t\tEnter Student ID: ");
    getchar();
    gets(studentID);
    while (fread(&studentInformation, sizeof(studentInformation),
1, fileOne) == 1)
    {
        if (strcmp(studentInformation.studentID, studentID) == 0)
        {
            flag++;
            printf("\n\t\t\t\tStudent Name: %s\n\t\t\t\tStudent ID:
%s\n\t\t\t\tStudent Department: %s\n\t\t\t\tStudent Address:
%s\n\t\t\t\tStudent ContactNumber: %s\n\t\t\t\tStudent CGPA: %.2f\n",
studentInformation.studentName, studentInformation.studentID,
studentInformation.studentDepartment,
studentInformation.studentAddress,
studentInformation.studentContactNumber,
studentInformation.studentCGPA);
        }
    }
    if (flag == 0)
    {
        printf("\n\t\t\t\tStudent Id is not found");
    }
}
else if (choice == 2)
{
    system("cls");
    printf("\t\t\t\t\t==== Search Student Information =====\n");

```

```

        printf("\n\n\t\t\tEnter Student Department: ");
        getchar();
        gets(studentDepartment);
        printf("\n\n\t\t\t%-20s%-13s%-10s%-25s%-15s%-s\n", "Name", "ID",
"Department", "Address", "Contact", "CGPA");

printf("\t\t\t-----
-----");

        while (fread(&studentInformation, sizeof(studentInformation),
1, fileOne) == 1)
        {
            if (strcmp(studentInformation.studentDepartment,
studentDepartment) == 0)
            {
                flag++;
                printf("\n\n\t\t\t%-20s%-13s%-10s%-25s%-15s%-.2f",
studentInformation.studentName, studentInformation.studentID,
studentInformation.studentDepartment,
studentInformation.studentAddress,
studentInformation.studentContactNumber,
studentInformation.studentCGPA);
            }
        }
        if (flag == 0)
        {
            printf("\n\t\t\t\tStudent Id is not found");
        }
    }
    else
    {
        printf("\n\t\t\t\tInvalid Option");
    }
    fclose(fileOne);
    printf("\n\n\n\t\t\tEnter any keys to continue.....");
    getch();
}

```