# NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR

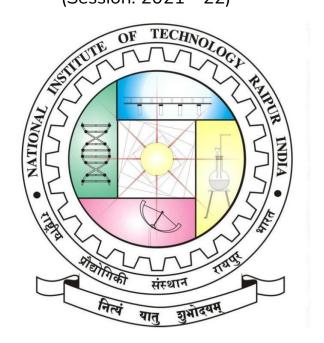
## **DEPARTMENT OF COMPUTER APPLICATIONS**

# **Student Management System**

A term paper was submitted in the fulfilment of the requirement for the award of the degree of  ${\sf MASTER\ OF\ COMPUTER\ APPLICATIONS}$ 

Problem Solving & Programming

(Session: 2021 - 22)



Submitted By:

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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.

## **Implementations**

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**

```
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

```
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

```
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	DepartmentAddress		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>
   float studentCGPA;
void createAccount();
void displayInformation();
void updateInformation();
void deleteInformation();
void searchInformation();
int main()
       system("cls");
       printf("\t\t====== Student Management System NIT Raipur
       printf("\n\t\t1. Create Student Account");
       printf("\n\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\t\t\tEnter Your Option: ");
       scanf(" %c", &option);
           createAccount();
           displayInformation();
```

```
updateInformation();
           deleteInformation();
           searchInformation();
           printf("\n\t\t====== Thank You ======");
           printf("\n\t\tInvalid Option, Please Enter Right Option
void createAccount()
   FILE *fileOne = fopen("studentInfo.bin", "ab+");
   if (fileOne == NULL)
       printf("\n\t\t\tError !\n");
   system("cls");
   printf("\t\t\====== Create Student Account ======\n");
   printf("\n\t\tEnter Student's Name: ");
   getchar();
   gets (stundentInformation.studentName);
   printf("\t\tEnter Student's ID: ");
   gets(stundentInformation.studentID);
   printf("\t\tEnter Student's Department: ");
   gets(stundentInformation.studentDepartment);
   printf("\t\tEnter Student's Address: ");
   gets(stundentInformation.studentAddress);
   printf("\t\tEnter Student's Contact Number: ");
   gets (stundentInformation.studentContactNumber);
   printf("\t\tEnter Student's Current CGPA: ");
```

```
scanf("%f", &stundentInformation.studentCGPA);
    fwrite(&stundentInformation, sizeof(stundentInformation), 1,
fileOne);
   printf("\n\n\t\tInformations have been stored successfully\n");
   printf("\n\n\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\tError !\n");
   Student stundentInformation;
   system("cls");
   printf("\t\t\t===== All Students Information ======\n");
   printf("\n\n\t\t%-20s%-13s%-10s%-25s%-15s%-s\n", "Name", "ID",
"Department", "Address", "Contact", "CGPA");
printf("\t\t-----
   while (fread(&stundentInformation, sizeof(stundentInformation), 1,
fileOne) == 1)
       printf("\n\n\t\t%-20s%-13s%-10s%-25s%-15s%-.2f",
stundentInformation.studentName, stundentInformation.studentID,
stundentInformation.studentDepartment,
stundentInformation.studentAddress,
stundentInformation.studentContactNumber,
stundentInformation.studentCGPA);
   printf("\n\n\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;
   if (fileOne == NULL || temp == NULL)
      printf("\n\t\t\tError !\n");
   system("cls");
   printf("\t\t\t===== Update Students Information =====\n");
   printf("\n\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\tChoose your option:\n\t\t1.Update Student
CPGA");
          printf("\n\n\t\t\tEnter Your Option: ");
          scanf("%d", &choice);
             printf("\n\t\tEnter Student's Name to Update: ");
              getchar();
              gets(tempInformation.studentName);
              strcpy(studentInformation.studentName,
              fwrite(&studentInformation, sizeof(studentInformation),
             printf("\n\n\t\t\tUpdated successfully!\n\n");
             printf("\n\t\tEnter Student's Department to Update:
              getchar();
              gets (tempInformation.studentDepartment);
              strcpy(studentInformation.studentDepartment,
```

```
fwrite(&studentInformation, sizeof(studentInformation),
               printf("\n\n\t\tUpdated successfully!\n\n");
               printf("\n\t\tEnter Student's Address to Update: ");
               getchar();
                gets(tempInformation.studentAddress);
                strcpy(studentInformation.studentAddress,
tempInformation.studentAddress);
                fwrite(&studentInformation, sizeof(studentInformation),
               printf("\n\n\t\t\Updated successfully!\n\n");
               printf("\n\t\tEnter Student's ContactNumber to
Update: ");
               getchar();
                gets(tempInformation.studentContactNumber);
                strcpy(studentInformation.studentContactNumber,
tempInformation.studentContactNumber);
                fwrite(&studentInformation, sizeof(studentInformation),
               printf("\n\n\t\t\tUpdated successfully!\n\n");
               printf("\n\t\tEnter Student's CGPA to Update: ");
                scanf("%f", &tempInformation.studentCGPA);
                studentInformation.studentCGPA =
tempInformation.studentCGPA;
                fwrite(&studentInformation, sizeof(studentInformation),
               printf("\n\n\t\t\tUpdated successfully!\n\n");
               printf("\n\t\t\tInvalid Option.");
                fwrite(&studentInformation, sizeof(studentInformation),
```

```
fwrite(&studentInformation, sizeof(studentInformation), 1,
   fclose(fileOne);
   fclose(temp);
   remove("studentInfo.bin");
   rename("temp.bin", "studentInfo.bin");
       printf("\n\t\t\tStudent Id is not found");
   printf("\n\n\t\tEnter any keys to continue.....");
   getch();
void deleteInformation()
   FILE *fileOne = fopen("studentInfo.bin", "rb");
   FILE *temp = fopen("temp.bin", "wb");
       printf("\n\t\t\tError !\n");
    system("cls");
   printf("\t\t\t===== Delete Student Information ======\n");
   printf("\n\t\tEnter Student's ID: ");
   getchar();
   gets (tempInformation.studentID);
   while (fread(&studentInformation, sizeof(studentInformation), 1,
fileOne) = 1
       if (strcmp(studentInformation.studentID,
tempInformation.studentID) == 0)
```

```
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);
               printf("\n\n\t\t\tInformation has been deleted
successfully!\n\n");
               fwrite(&studentInformation, sizeof(studentInformation),
1, temp);
               printf("\n\t\t\tInvalid Option");
               fwrite(&studentInformation, sizeof(studentInformation),
1, temp);
            fwrite(&studentInformation, sizeof(studentInformation), 1,
   fclose(fileOne);
   fclose(temp);
   remove("studentInfo.bin");
   rename("temp.bin", "studentInfo.bin");
       printf("\n\t\t\student Id is not found");
   printf("\n\n\t\tEnter any keys to continue.....");
   getch();
void searchInformation()
   FILE *fileOne = fopen("studentInfo.bin", "rb");
```

```
printf("\n\t\t\tError !\n");
   system("cls");
   printf("\t\t\t===== Search Student Information ======\n");
   printf("\n\t\tChoose your option:\n\t\t1.Search by Student
ID\n\t\t\t2.Search by Student Department");
   printf("\n\n\t\tEnter Your Option: ");
   scanf("%d", &choice);
       system("cls");
       printf("\t\t\t===== Search Student Information ======\n");
       printf("\n\n\t\t\tEnter Student ID: ");
       getchar();
       gets (studentID);
       while (fread(&studentInformation, sizeof(studentInformation),
1, fileOne) == 1)
           if (strcmp(studentInformation.studentID, studentID) == 0)
               printf("\n\t\t\tStudent Name: %s\n\t\t\tStudent ID:
studentInformation.studentName, studentInformation.studentID,
studentInformation.studentDepartment,
studentInformation.studentAddress,
studentInformation.studentContactNumber,
studentInformation.studentCGPA);
       if (flag == 0)
           printf("\n\t\t\tStudent Id is not found");
       system("cls");
       printf("\t\t\t===== Search Student Information =====\n");
```

```
printf("\n\n\t\t\tEnter Student Department: ");
       getchar();
       gets (studentDepartment);
       printf("\n\n\t\t%-20s%-13s%-10s%-25s%-15s%-s\n", "Name", "ID",
"Department", "Address", "Contact", "CGPA");
printf("\t\t------
       while (fread(&studentInformation, sizeof(studentInformation),
1, fileOne) == 1)
           if (stricmp(studentInformation.studentDepartment,
studentDepartment) == 0)
               printf("\n\n\t\t%-20s%-13s%-10s%-25s%-15s%-.2f",
studentInformation.studentName, studentInformation.studentID,
studentInformation.studentDepartment,
studentInformation.studentAddress,
studentInformation.studentContactNumber,
studentInformation.studentCGPA);
           printf("\n\t\tStudent Id is not found");
       printf("\n\t\tInvalid Option");
    fclose(fileOne);
   printf("\n\n\t\t\tEnter any keys to continue.....");
   getch();
```



#### **PLAGIARISM SCAN REPORT**

		Date	2022-01-09
25% Plagiarised	75% Unique	Words	809
		Characters	12554

#### **Content Checked For Plagiarism**

```
#include
#include
#include
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===== Student Management System NIT Raipur ======\n");
    printf("\n\t\t1. Create Student Account");
    printf("\n\t\t2. Display All Students Information");
    printf("\n\t\t3. Update Student Information");
    printf("\n\t\t4. Delete Student Information");
    printf("\n\t\t\t5. Search Student Information");
    printf("\n\t\t0. Exit");
    printf("\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====== Thank You =======");
    default:
       printf("\n\t\tInvalid Option, Please Enter Right Option !\n");
    }
  }
  return 0;
void createAccount()
  FILE *fileOne = fopen("studentInfo.bin", "ab+");
  if (fileOne == NULL)
    printf("\n\t\tError !\n");
  }
  Student stundentInformation;
  system("cls");
  printf("\t\t====== Create Student Account ======\n");
  printf("\n\t\tEnter Student's Name: ");
  getchar();
  gets(stundentInformation.studentName);
  printf("\t\tEnter Student's ID: ");
  gets (stundent Information. student ID);\\
  printf("\t\tEnter Student's Department: ");
  gets (stundent Information. student Department);\\
  printf("\t\tEnter Student's Address: ");
  gets (stundent Information. student Address);\\
  printf("\t\tEnter Student's Contact Number: ");
  gets(stundentInformation.studentContactNumber);
```

```
printf("\t\tEnter Student's Current CGPA: ");
  scanf("%f", &stundentInformation.studentCGPA);
  fwrite(&stundentInformation, sizeof(stundentInformation), 1, fileOne);
  printf("\n\n\t\t\Informations have been stored successfully\n");
  printf("\n\n\t\tEnter any keys to continue......");
  getch();
  fclose(fileOne);
void displayInformation()
  FILE *fileOne = fopen("studentInfo.bin", "rb");
  if (fileOne == NULL)
    printf("\n\t\t\Error !\n");
  Student stundentInformation;
  system("cls");
  printf("\t\t\t====== All Students Information ======\n");
  printf("\n\n\t\t%-20s%-13s%-10s%-25s%-15s%-s\n", "Name", "ID", "Department", "Address", "Contact", "CGPA");
  printf("\t\t-----");
  while (fread(&stundentInformation, sizeof(stundentInformation), 1, fileOne) == 1)
    printf("\n\n\t\t%-20s%-13s%-10s%-25s%-15s%-.2f", stundentInformation.studentName,
stundentInformation.studentID, stundentInformation.studentDepartment, stundentInformation.studentAddress,
stundent Information. student Contact Number, stundent Information. student CGPA); \\
  }
  printf("\n\n\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\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\tChoose your option:\n\t\t\1.Update Student Name\n\t\t\2.Update Student Department\n\t\t\3.Update
Student Address\n\t\t4.Update Student ContactNumber\n\t\t5.Update Student CPGA");
       printf("\n\n\t\tEnter Your Option: ");
       scanf("%d", &choice);
       if (choice == 1)
         printf("\n\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\tUpdated successfully!\n\n");
       else if (choice == 2)
         printf("\n\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\tUpdated successfully!\n\n");
       else if (choice == 3)
         printf("\n\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\tUpdated successfully!\n\n");
       }
       else if (choice == 4)
         printf("\n\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\tUpdated successfully!\n\n");
       else if (choice == 5)
         printf("\n\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\Updated successfully!\n\n");
       }
       else
         printf("\n\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\tStudent Id is not found");
  printf("\n\n\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\====== Delete Student Information ======\n");
  printf("\n\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++;
      scanf("%d", &choice);
      if (choice == 1)
         printf("\n\n\t\t\Information has been deleted successfully!\n\n");
      else if (choice == 2)
         fwrite(&studentInformation, sizeof(studentInformation), 1, temp);
      else
         printf("\n\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\tStudent Id is not found");
  printf("\n\n\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\Error !\n");
  system("cls");
  printf("\t\t\t===== Search Student Information ======\n");
  printf("\n\t\tChoose your option:\n\t\t1.Search by Student ID\n\t\t2.Search by Student Department");
  printf("\n\n\t\tEnter Your Option: ");
  scanf("%d", &choice);
  if (choice == 1)
    system("cls");
    printf("\t\t\t===== Search Student Information ======\n");
    printf("\n\n\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\Student Name: %s\n\t\t\Student ID: %s\n\t\t\Student Department: %s\n\t\t\Student Address: %s\n\t\t\Student ContactNumber: %s\n\t\t\Student CGPA: %.2f\n", studentInformation.studentName, studentInformation.studentID, studentInformation.studentDepartment, studentInformation.studentAddress, studentInformation.studentContactNumber, studentInformation.studentCGPA);

```
}

if (flag == 0)
{
    printf("\n\t\t\tStudent Id is not found");
}

else if (choice == 2)
{
    system("cls");
    printf("\t\t\t\t===== Search Student Information =====\n");
    printf("\n\n\t\t\tEnter Student Department: ");
    getchar();
    gets(studentDepartment);
    printf("\n\n\t\t\*-20s%-13s%-10s%-25s%-15s%-s\n", "Name", "ID", "Department", "Address", "Contact", "CGPA");
    printf("\t\------");
}
```

```
while (fread(&studentInformation, sizeof(studentInformation), 1, fileOne) == 1)
                    {
                              if (stricmp(studentInformation.studentDepartment, studentDepartment) == 0)
                                         flag++;
                                         printf("\n\n\t\t%-20s%-13s%-10s%-25s%-15s%-.2f", studentInformation.studentName,
student Information. student ID, student Information. student Department, student Information. student Address, and the student Information 
student Information. student Contact Number, \ student Information. student CGPA); \\
                    }
                    if (flag == 0)
                    {
                               printf("\n\t\tStudent Id is not found");
                    }
          }
          else
          {
                     printf("\n\t\tInvalid Option");
          fclose(fileOne);
          printf("\n\n\t\tEnter any keys to continue......");
          getch();
}
```

#### **Matched Source**

### Similarity 15%

#### Title: As an Indian, How was your experience learning ... - Quora

Exam Question: Write a program to print an empty square with side 10 unitsusing \*. Standard Solution (from the manual) - > 1. int main() 2.

https://www.quora.com/As-an-Indian-How-was-your-experience-learning-programming-in-colleges

#### Similarity 24%

Title:Help, urgent.. I don't know why my code doesn't end even I ...

Nov 17, 2021 — ... tempInformation; 459 460 int choice, flag = 0; 461 462 if (fileOne == NULL || temp == NULL) 463 { 464 printf(" $n\times t$ = NULL) 463 } ...

https://www.codeproject.com/Questions/5317863/Help-urgent-l-dont-know-why-my-code-doesnt-end-eve

#### Similarity 5%

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The following are implementation details for these classes (provided when not self-evident): • Student o Constructor signature: Student(String id, String name) ...Can you add an option to search students by their ID number? ... printf("\n Enter the student name : "); char name[50]; scanf("%s", name); printf(" Enter ID ...

https://www.chegg.com/homework-help/questions-and-answers/require-help-creating-activity java-student java-program java-timetable-system-provided-progr-q72005829

