

DBMS LAB ASSIGNMENT 2

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1. Store student records (fields: rollno, Name, branch, age) in a data file and perform linear search in the data file by reading rollno as input and then display the student details and display the time required to do this operation.

A. Code:

```
#include <stdio.h>
#include <string.h>
#include <conio.h>
#include <time.h>
typedef struct Student
{
    char name[50];
    char rollNo[15];
    char branch[10];
    float age;
}Student;

void createAccount();
void displayInfo();
void searchInfo();

int main()
{
    clock_t t;
    char option;
    while (option != '0')
    {
```

```

system("cls");
printf("\t\t===== Student Management Database System =====\n");
printf("\n\t\t\t1. Add Student Account");
printf("\n\t\t\t2. Display All Students Information");
printf("\n\t\t\t3. Search Student Information Using Linear Search");
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':
    displayInfo();
    break;
case '3':
    t = clock();
    searchInfo();
    t = clock() - t;
    double time_taken = ((double)t)/CLOCKS_PER_SEC; // in seconds
    printf("\n\n\t\t\tsearchInfo() operation took %f seconds to execute \n",
time_taken);
    printf("\n\n\n\t\t\tEnter any keys to continue.....");
    getch();
    break;
case '0':
    printf("\n\t\t\t===== Thank You =====");
    break;
default:
    printf("\n\t\t\tInvalid Option, Please Enter Right Option !\n");
}
}
return 0;
}

void createAccount()
{

```

```
if (fileOne == NULL)
{
    printf("\n\t\t\tError !\n");
}
```

```
system("cls");
```

```
printf("\n\t\t\tEnter Student's Name : ");  
getchar();  
gets(stuInfo.name);  
printf("\t\t\tEnter Student's ID : ");  
gets(stuInfo.rollNo);  
printf("\t\t\tEnter Student's Department : ");  
gets(stuInfo.branch);  
printf("\t\t\tEnter Student's Current age : ");  
scanf("%f", &stuInfo.age);  
fwrite(&stuInfo, sizeof(stuInfo), 1, fileOne);  
printf("\n\n\t\t\t\t\tInformations have been stored sucessfully\n");  
printf("\n\n\t\t\t\t\tEnter any keys to continue.....");  
getch();  
fclose(fileOne);
```

```
void displayInfo()
{
    FILE *fileOne = fopen("studInfoFile.bin", "rb");

    if (fileOne == NULL)
    {
        printf("\n\t\t\tError !\n");
    }

    Student stuInfo;
```

```

system("cls");

printf("\t\t\t\t==== All Students Information =====\n");
printf("\n\n\t\t%-20s%-13s%-10s%-15s\n", "Name", "ID", "Dept.", "AGE");
printf("\t\t-----");

while (fread(&stuInfo, sizeof(stuInfo), 1, fileOne) == 1)
{
    printf("\n\n\t\t%-20s%-13s%-10s%-.2f", stuInfo.name, stuInfo.rollNo,
stuInfo.branch, stuInfo.age);
}

printf("\n\n\t\tEnter any keys to continue.....");
getch();

fclose(fileOne);
}

void searchInfo()
{
    FILE *fileOne = fopen("studInfoFile.bin", "rb");

    Student studentInformation;

    int choice, flag = 0;
    char rollNo[20], branch[10];

    if (fileOne == NULL)
    {
        printf("\n\t\t\t\tError !\n");
    }

    system("cls");
    printf("\t\t\t\t==== Search Student Information =====\n");
    printf("\n\n\t\t\t\tEnter Student ID : ");
    getchar();
    gets(rollNo);
    while (fread(&studentInformation, sizeof(studentInformation), 1, fileOne) == 1)
    {

```

```

        if (strcmp(studentInformation.rollNo, rollNo) == 0)
        {
            flag++;
            printf("\n\t\t\tStudent Name : %s\n\t\t\tStudent ID : %s\n\t\t\tStudent Dept. : %s\n\t\t\tStudent AGE : %.2f\n", studentInformation.name, studentInformation.rollNo, studentInformation.branch, studentInformation.age);
        }
    }
    if (flag == 0)
    {
        printf("\n\t\t\tStudent Id is not found");
    }

    fclose(fileOne);
}

```

OUTPUT:

```

===== Student Management Database System =====

```

1. Add Student Account
2. Display All Students Information
3. Search Student Information Using Linear Search
0. Exit

```

Enter Your Option: 1

```

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

```
Enter Student's Name : Lohith  
Enter Student's ID : 161  
Enter Student's Department : CSE  
Enter Student's Current age : 19
```

```
Informations have been stored sucessfully
```

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

```
===== Student Management Database System =====
```

1. Add Student Account
2. Display All Students Information
3. Search Student Information Using Linear Search
0. Exit

```
Enter Your Option: 1
```

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

```
Enter Student's Name : Surya  
Enter Student's ID : 876  
Enter Student's Department : CSE  
Enter Student's Current age : 19
```

```
Informations have been stored sucessfully
```

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

```
===== Student Management Database System =====
```

1. Add Student Account
2. Display All Students Information
3. Search Student Information Using Linear Search
0. Exit

Enter Your Option: 1

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

Enter Student's Name : Singh

Enter Student's ID : 761

Enter Student's Department : CSE

Enter Student's Current age : 19

Informations have been stored sucessfully

Enter any keys to continue.....

```
===== Student Management Database System =====
```

1. Add Student Account
2. Display All Students Information
3. Search Student Information Using Linear Search
0. Exit

Enter Your Option: 2

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

Name	ID	Dept.	AGE

Lohith	161	CSE	19.00
Ravi	876	CSE	19.00
Surya	906	CSE	19.00

Enter any keys to continue.....■

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

Enter Student ID : 161

Student Name : Lohith

Student ID : 161

Student Dept. : CSE

Student AGE : 19.00

searchInfo() operation took 2.511000 seconds to execute

Enter any keys to continue.....