Skill Development Lab-II (2018-2019)

BRACT's

VISHWAKARMA INSTITUTE OF INFORMATION TECHNOLOGY, PUNE – 48

An Autonomous Institute Affiliated to Savitribai Phule Pune University, Pune

SD(LP-II) ASSIGNMENT (S.Y.B. Tech. – DIV: C)

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Assignment 8 :

Aim :

Department maintains a student info. The file contains roll no. , name , division and address. Allow user to add , delete info. Of student. Display info. Of a particular employee. If record of student does not exist in an appropriate message is diaplayed. If it is , then the system displays the student details. Use sequential file to maintain the data.

Objective :

We have to implement this using sequential file organization.

Theory : File is a collection of records related to each other. The file size is limited by the size of memory and storage medium.

File organization ensures that records are available for processing. It is used to determine an efficient file organization for each base relation.

Sequential access file organization:

- Storing and sorting in contiguous block within files on tape or disk is called as **sequential access file organization**.
- In sequential access file organization, all records are stored in a sequential order. The records are arranged in the ascending or descending order of a key field.

- Sequential file search starts from the beginning of the file and the records can be added at the end of the file.
- In sequential file, it is not possible to add a record in the middle of the file without rewriting the file.

Advantages of sequential file :

- It is simple to program and easy to design.
- Sequential file is best use if storage space

ALGORITHM:

1. Take the count of number of students from the user

2. Make an array of object of the student class which stores the information of the students

3. Open a file by using the ofstream object

4. Take the information of the student from the user and write it to the file

5. User can perform 1.Search 2.Delete 3.Display operations

6. For Search 1. Input the Roll number to be searched 2. Open the file using Ifstream object in input mode 3. Read the contents of the file in an object sequentially and check it with the roll number to be searched if found Display found message and the details of the students 4. If not found continue till end of file 5. If eof is reached display the message Not found

7.For Delete 1.Input the roll number to be deleted 2. Open the Main file in input mode and a temporary file in output mode 3.Sequentially search through the main file and copy the contents to the temp file except the roll number to be deleted 4. Delete the contents of the Main file 5. Rename the temp file with the name of the main file

8. For Display 1. Open the file in input mode and display the details of all the students sequentially

Program :

```
#include<iostream>
#include<fstream>
using namespace std;
class student
{
   int roll_num;
   char div;
   string name;
   string address;
public:
   void getdata()
   {
      cout<<"\n Enter the Roll Number";
      cin>>roll_num;
      cout<<"\n Enter the division ";
      cin>>div;
      cout<<"\n Enter the Name";
      fflush(stdin);
      getline(cin,name);
      cout<<"\n Enter the Address";
```

```
    fflush(stdin);
    getline(cin,address);
  }
  void putdata(int n)
  {
    student st[n];
  ifstream infile;
  infile.open("student.dat",ios::binary|ios::in);
  for(int i=0;i<n;i++)
  {
       infile.read((char *)&st[i],sizeof(st[i]));
    cout<<"\n Roll Number: "<<st[i].roll_num;
    cout<<"\n Division:  "<<st[i].div;
    fflush(stdin);
    cout<<"\n Name:  "<<st[i].name;
    fflush(stdin);
    cout<<"\n Address:  "<<st[i].address;
    cout<<"\n _____________________________________________________
\n";
  }
  infile.close();
  }
```

```
void search_(int n)
{
   student st[n];
   ifstream infile;
   cout<<"\n Enter the Roll Number to be searched";
   int r;
   cin>>r;
   infile.open("student.dat",ios::in|ios::binary);
   for(int i=0;i<n;i++)
   {
      infile.read((char *)&st[i],sizeof(st[i]));
      if(st[i].roll_num==r)
      {
         cout<<"\n Found";
         cout<<"\n Details:  "<<endl;
         cout<<"\n Roll Number: "<<st[i].roll_num;
      cout<<"\n Division:  "<<st[i].div;
      fflush(stdin);
      cout<<"\n Name:  "<<st[i].name;
      fflush(stdin);
```

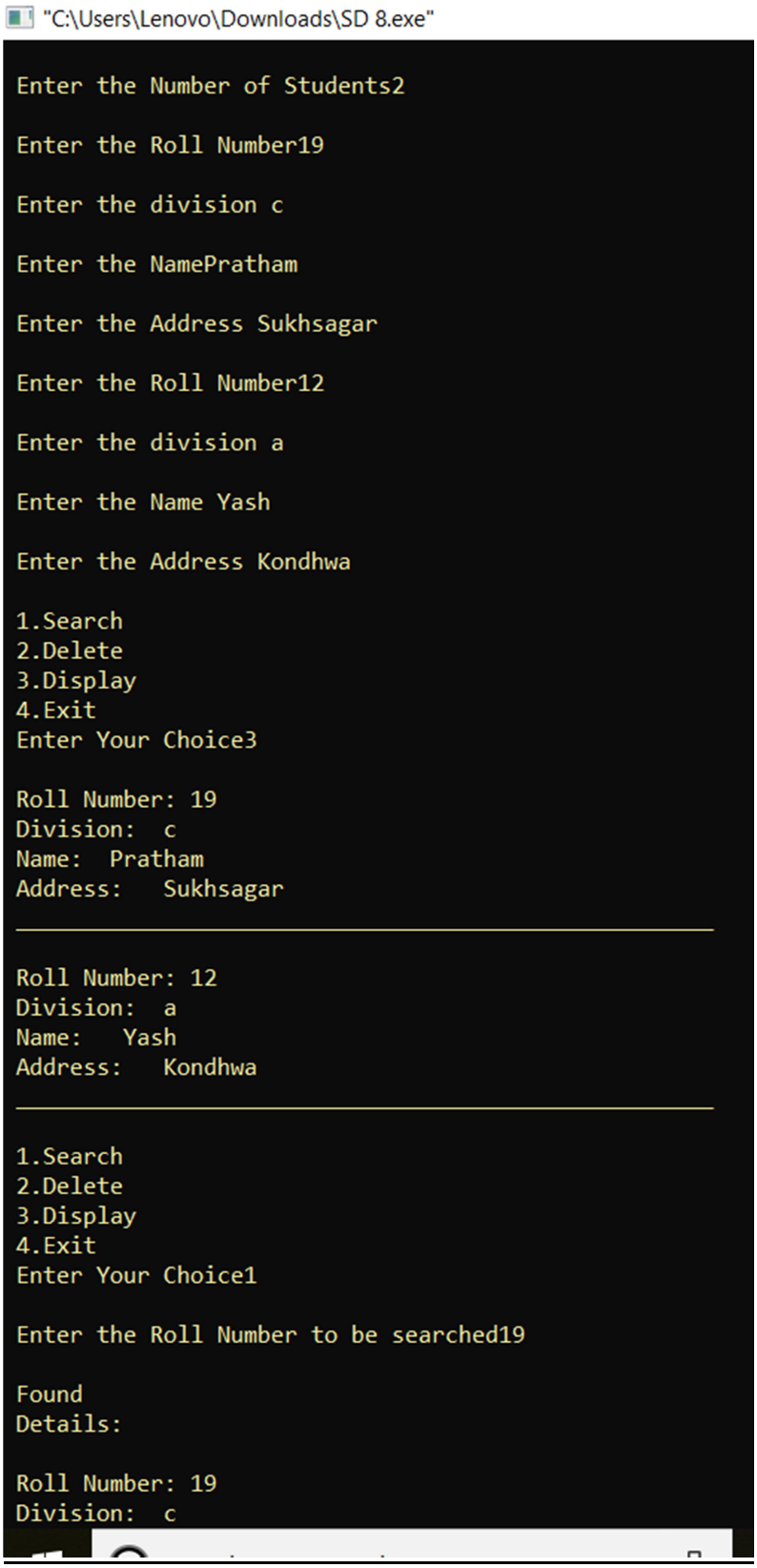
```
      cout<<"\n Address:  "<<st[i].address;
      cout<<"\n ____________________________________________________
\n";
         infile.close();
         return;
      }
   }
   cout<<"\n Not Found";
   infile.close();
}
void del(int n)
{
   student st[n];
   int r;
   cout<<"\n Enter the roll number to be deleted ";
   cin>>r;
   ifstream infile;
   ofstream outfile;
   infile.open("student.dat",ios::binary|ios::in);
   outfile.open("temp.dat",ios::binary|ios::out);
   for(int i=0;i<n;i++)
   {
```

```
        infile.read((char *)&st[i],sizeof(st[i]));
        if(st[i].roll_num==r)
        {
           continue;
        }
        else
        {
           outfile.write((char *)&st[i],sizeof(st[i]));

        }
    }
    outfile.close();
    infile.close();
    remove("student.dat");
    int re=rename("temp.dat","student.dat");

}



};
int main()
{
```

```
int n;
cout<<"\n Enter the Number of Students";
cin>>n;
student s[n];
ofstream outfile;
outfile.open("student.dat",ios::out|ios::binary);
for(int i=0;i<n;i++)
{
   s[i].getdata();
   outfile.write((char *)&s[i],sizeof(s[i]));
}
outfile.close();

int c;
student d;
do
{
   cout<<"\n 1.Search";
   cout<<"\n 2.Delete";
   cout<<"\n 3.Display";
   cout<<"\n 4.Exit";
   cout<<"\n Enter Your Choice";
```

```
        cin>>c;
        switch(c)
           {
           case 1:d.search_(n);break;
           case 2:d.del(n);n=n-1;break;
           case 3:d.putdata(n);break;
           case 4:break;
           }
    }
    while(c!=4);
}
```

Output :


"C:\Users\Lenovo\Downloads\SD 8.exe"
Enter the Number of Students2
Enter the Roll Number19
Enter the division c
Enter the NamePratham
Enter the Address Sukhsagar
Enter the Roll Number12
Enter the division a
Enter the Name Yash
Enter the Address Kondhwa
1.Search
2.Delete
3.Display
4.Exit
Enter Your Choice3
Roll Number: 19
Division: c
Name: Pratham
Address: Sukhsagar
Roll Number: 12
Division: a
Name: Yash
Address: Kondhwa
1.Search
2.Delete
3.Display
4.Exit
Enter Your Choice1
Enter the Roll Number to be searched19
Found
Details:
Roll Number: 19
Division: c

Conclusion :

Thus we implemented this example using sequential file organization.