ASSIGNMENT NO.8.

Aim:

Department maintains a student information. The file contains roll number, name, division and address.

Allow user to add, delete information of student. Display information of particular employee. If record of

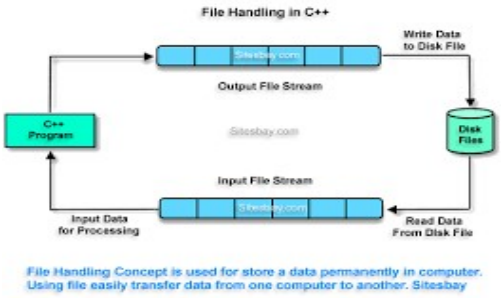
student does not exist an appropriate message is displayed. If it is, then the system displays the student details Use Sequential file to maintain data

Objective:

Understand the concepts of sequential file handling

Theory:

A file is a collection of related data stored in a particular area on the disk



A File can be opened in the following ways

File mode para meter	Meaning
ios::app	Append to end of file
ios::ate	go to end of file on opening
ios::binary	file open in binary mode
ios::in	open file for reading only

ios::out	open file for writing only
ios::nocreate	open fails if the file does not e xist
ios::noreplace	open fails if the file already exi st
ios::trunc	delete the contents of the file i f it exist

When we want to move file pointer to desired position then use these function to manage the file pointers.

Seekg () = moves get pointer (input) to a specified location

Seekp () = moves put pointer (output) to a specified location

tellg () = gives the current position of the get pointer

tellp () = gives the current position of the put pointer

```
file . read ((char *)&V , sizeof (V));
file . Write ((char *)&V , sizeof (V));
```

These function take two arguments. The first is the address of the variable V , and the second is the length of that variable in bytes . The address of variable must be cast to type char * (i.e pointer to character type) .

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

C++ Code:

```
#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;
```

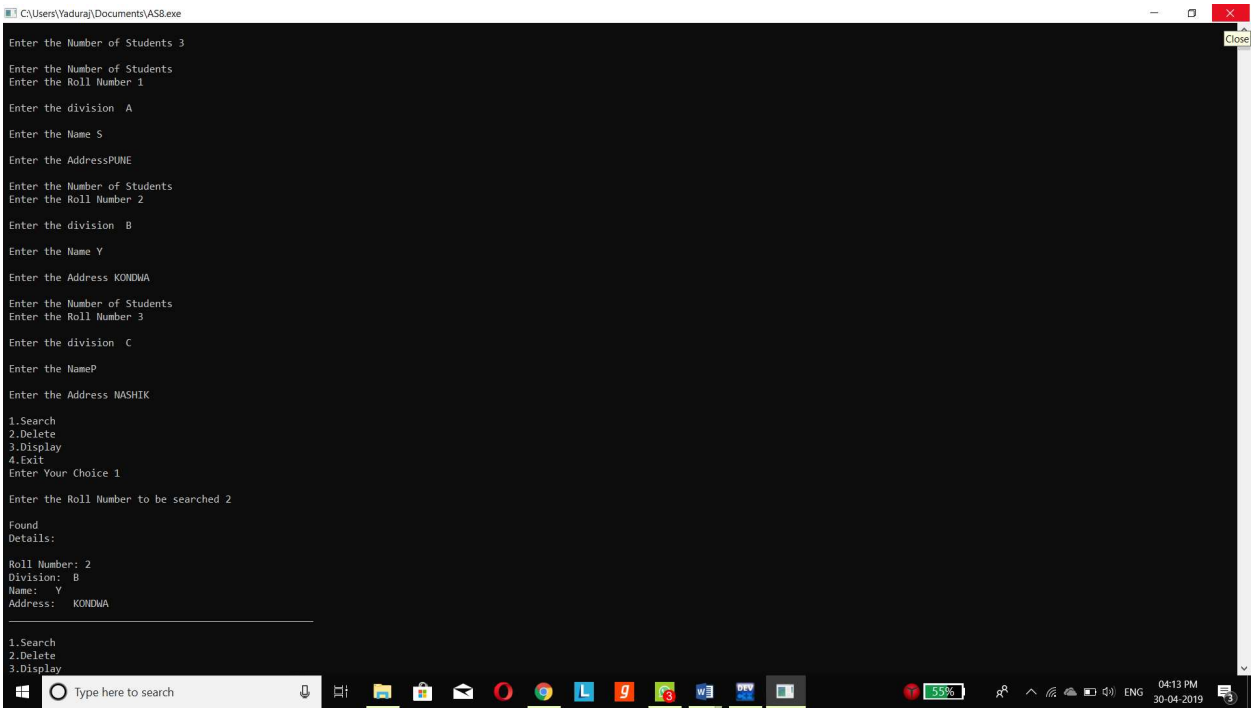
```
cout<<"\n Enter the Roll Number to be searched";
int r;
cin>>r;
infile.open("student.dat",ios::in|ios::binary);
for(int i=0;i<n;i++)
{
   infile.read((char *)&st[i],sizeof(st[i]));
   if(st[i].roll_num==r)
   {
      cout<<"\n Found";
      cout<<"\n Details:  "<<endl;
      cout<<"\n Roll Number: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



Conclusion:

Through this assignment ,we learned and performed how to store information in a sequential file and perform various operations on the file like search,delete etc.