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

Objective:- To study the different data structure concepts to implement this program.

Theory:-

Input/output formatting

Writing to or reading from a file is similar to writing onto a terminal screen or reading from a keyboard. Differences are:

- File must be opened with an OPEN statement, in which the unit number and (optionally) the filename are given
- Subsequent writes (or reads) must refer to a known unit number (used for open)
- File should be closed at the end

File opening and closing

The syntax is:

```
OPEN([unit=]lunit,file='name' [,options])

CLOSE([unit=]lunit [,options])
```

For example:

```
OPEN(10, file='output.dat', status='new')

CLOSE(unit=10)
```

- The first parameter is the unit number and the keyword unit= can be omitted.
- The unit numbers 0,5 and 6 are predefined.
  - 0 is output for standard (system) error messages

- 5 is for standard (user) input
- 6 is for standard (user) output
- These units are opened by default and should not be re-opened nor closed by users

Some options for opening a file:

- status: existence of the file ('old', 'new', 'replace', 'scratch', 'unknown')
- position: offset, where to start writing ('append')
- action: file operation mode ('write','read','readwrite')
- form: text or binary file ('formatted', 'unformatted')
- access: direct or sequential file access ('direct','sequential','stream')
- iostat: error indicator, (output) integer (non zero only upon an error)
- err: the label number to jump upon error
- recl: record length, (input) integer for direct access files only. Be careful, it can be in bytes or words...

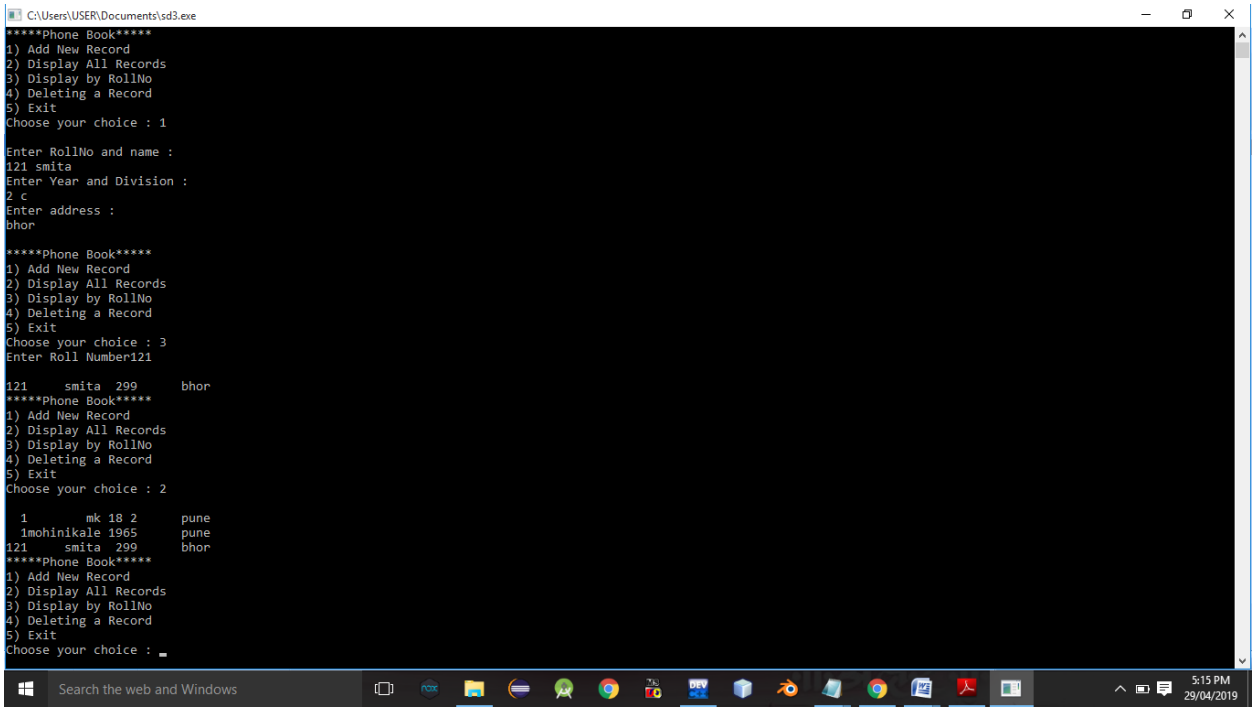
Program Code:-

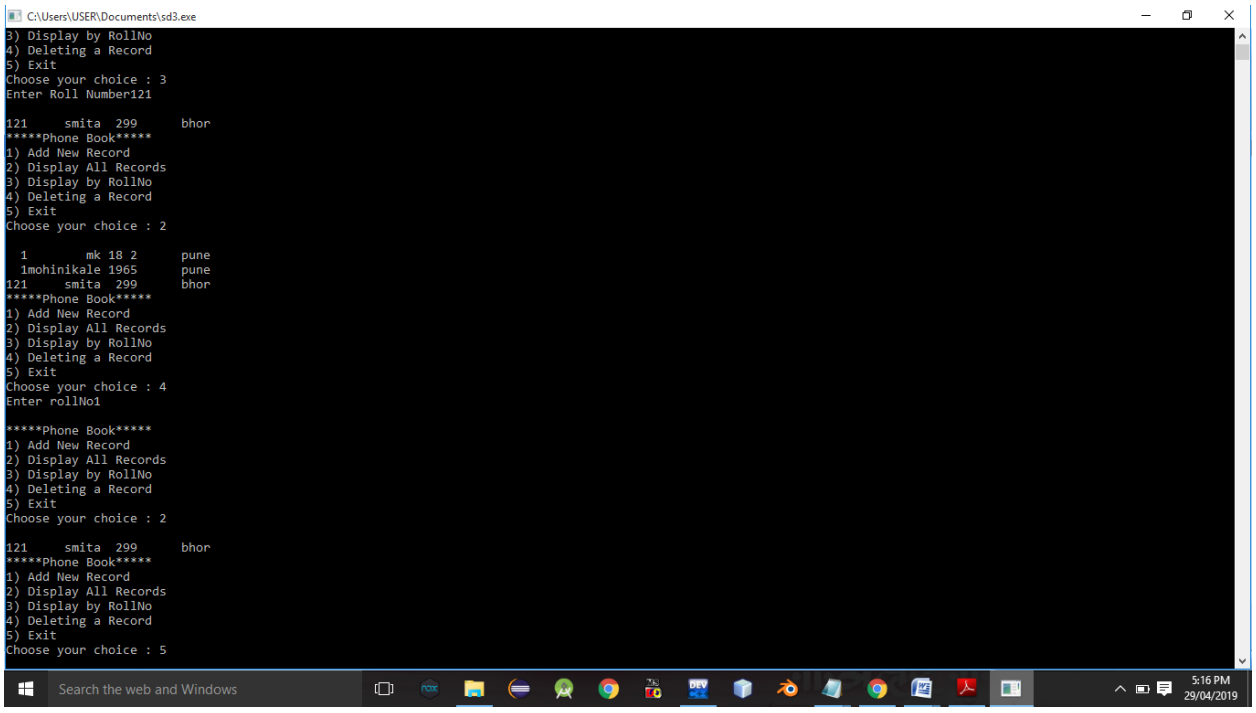
```
#include<iostream>
#include<fstream>
using namespace std;
class Student
{
 int rollno;
 char name[20];
 char Class;
 public:
 void getdata();
 void displayall();
 int getno() {return rollno;}
 int getClass() {return Class;}
}s;

void Student::getdata()
{
    cout<<"Enter Name     : ";
 cin>>name;
cin.getline(name,20);
 cout<<"Enter Roll No. : ";
 cin>>rollno;

// gets(name);
 cout<<"Enter Class    : ";
 cin>>Class;
}

void Student::displayall()
{
```

```
 ifstream fin("stud.dat",ios::in|ios::binary);
 while(fin.read((char*)&s,sizeof(s)))
 {
  cout<<"Name:"<<name<<endl;
  cout<<"Roll no"<<rollno<<endl;
  cout<<"Class:"<<Class<<endl;
 }
 fin.close();
// int x=gcount();
// cout<<"\n"<<x<<" Bytes read from file...\n";
}

//For adding the data into the file.
void add()
{

 char ch='y';
 ofstream fout("stud.dat",ios::out|ios::app|ios::binary);
 while(ch=='y'||ch=='Y')
 {
  s.getdata();
  fout.write((char*)&s,sizeof(s));
  cout<<"\nDo you want to add more : ";
  cin>>ch;
 }
 cout<<"\nData Appended and Transferred to file...\n";
 fout.close();
}



void Delete()
{
 int rno;
 char found='n';
 fstream fio("stud.dat",ios::in|ios::out|ios::binary|ios::app);
 ofstream fout("temp.dat",ios::out|ios::binary|ios::app);
 ofstream out("trash.dat",ios::out|ios::binary|ios::app);

 cout<<"\nEnter the Roll No. whose record is to be deleted: ";
 cin>>rno;

 while(fio.read((char*)&s,sizeof(s)))
 {
  if(s.getno()==rno)
  {
   out.write((char*)&s,sizeof(s));
   found='y';
  }
  else
  {
```

```
   fout.write((char*)&s,sizeof(s));
  }
 }
 if(found=='n') cout<<"\nThe Roll No."<<rno<<" is not in the
file...\n";
 fio.close();
 fout.close();
 remove("stud.dat");
 rename("temp.dat","stud.dat");
}



int main()
{
 int n,rno,i;
 fstream fio("stud.dat",ios::in|ios::out|ios::binary);
 int ch;
 char choice='y';

 while(choice=='y')
 {
     cout<<"\n\t...MENU OF PROGRAM...\n";
 cout<<"\t1. Add the record...\n";
 cout<<"\t2. Display all records...\n";
 cout<<"\t3. Delete the Record...\n";

 cin>>ch;
   switch(ch)
   {
  case 1: add(); break;
  case 2: s.displayall(); break;
  case 3: Delete(); break;
  default: cout<<"Wrong Input please enter the correct value....";
   }
   cout<<"Do you want to continue?(y/n)";
   cin>>choice;
 }
// fio.close();

 return 0;
}
```

Output Screenshots:-





Conclusion:- Thus,this assignment implemented successfully.