```cpp
EXPERIMRNT NO:13
#include <iostream>
#include<fstream>
#include<cstring>
#include<iomanip>
using namespace std;
const int MAX=20;
class Employee
{
 int empid;
 char name[20];
 char role;
 int salary;
public:
 Employee()
{
  strcpy(name,"");

  empid=salary=role=0;
}
 Employee(int empid,char name[MAX],int salary,char role)
 {
  strcpy(this->name,name);

  this->empid=empid;
  this->salary=salary;
  this->role=role;
 }
 int getRollNo()
 {
  return empid;
 }
 void displayRecord()
 {

  cout<<endl<<setw(5)<<empid<<setw(10)<<name<<setw(10)<<salary<<setw(10)<<role<<setw(10);
 }
};
//==========File Operations ===========
class FileOperations
{
 fstream file;
public:
 FileOperations(char* filename)
{
file.open(filename,ios::in|ios::out|ios::ate|ios::binary);
}
 void insertRecord(int empid, char name[MAX],int salary, char role)
 {
  Employee e1(empid,name,salary,role);
  file.seekp(0,ios::end);
  file.write((char *)&e1,sizeof(Employee));
  file.clear();
 }
 void displayAll()
```

```cpp
{
 Employee e1;
 file.seekg(0,ios::beg);
 while(file.read((char *)&e1, sizeof(Employee)))
 {
  e1.displayRecord();
 }
 file.clear();
}
void displayRecord(int empid)
{
 Employee e1;
 file.seekg(0,ios::beg);
 bool flag=false;
 while(file.read((char*)&e1,sizeof(Employee)))
 {
  if(e1.getRollNo()==empid)
  {
   e1.displayRecord();
   flag=true;
   break;
  }
 }
 if(flag==false)
 {
  cout<<"\nRecord of "<<empid<<"is not present.";
 }
 file.clear();
}
void deleteRecord(int empid)
{
 ofstream outFile("new.dat",ios::binary);
 file.seekg(0,ios::beg);
 bool flag=false;
 Employee e1;

 while(file.read((char *)&e1, sizeof(Employee)))
 {
  if(e1.getRollNo()==empid)
  {
   flag=true;
   continue;
  }
  outFile.write((char *)&e1, sizeof(Employee));
 }
 if(!flag)
 {
  cout<<"\nRecord of "<<empid<<" is not present.";
 }
 file.close();
 outFile.close();
 remove("Employee.dat");
 rename("new.dat","Employee.dat");
 file.open("Employee.dat",ios::in|ios::out|ios::ate|ios::binary);
}
```

```cpp
 ~FileOperations()
 {
  file.close();
  cout<<"\nFile Closed.";
 }
};
int main() {
 ofstream newFile("Employee.dat",ios::app|ios::binary);
  newFile.close();
  FileOperations file((char*)"Employee.dat");
      int empid,salary,choice=0;
      char role;
      char name[MAX];
      while(choice!=5)
      {
          //clrscr();
          cout<<"\n*****Employee Database*****\n";
          cout<<"1) Add New Record\n";
          cout<<"2) Display All Records\n";
          cout<<"3) Display by Employee ID\n";
          cout<<"4) Deleting a Record\n";
          cout<<"5) Exit\n";
          cout<<"Choose your choice : ";
          cin>>choice;
          switch(choice)
          {
              case 1 : //New Record
                cout<<endl<<"Enter Employee ID and name : \n";
                cin>>empid>>name;
                cout<<"Enter Salary and role : \n";
                cin>>salary>>role;

                file.insertRecord(empid,name,salary,role);
                cout<<"\nRecord Inserted.";
                break;
              case 2 :

cout<<endl<<setw(5)<<"ID"<<setw(10)<<"NAME"<<setw(10)<<"SALARY"<<setw(10)<<"ROLE";
                file.displayAll();
                break;
              case 3 :
                cout<<"Enter Employee ID";
                cin>>empid;
                 file.displayRecord(empid);

                break;
              case 4:
                cout<<"Enter Employee ID";
                cin>>empid;
                file.deleteRecord(empid);
                break;
            case 5 :break;
          }

      }
```

```
 return 0;
}
```
OUTPUT:
*****Employee Database*****
1) Add New Record
2) Display All Records
3) Display by Employee ID
4) Deleting a Record
5) Exit
Choose your choice : 1

Enter Employee ID and name :
1
aaa
Enter Salary and role :
200000
h

Record Inserted.
*****Employee Database*****
1) Add New Record
2) Display All Records
3) Display by Employee ID
4) Deleting a Record
5) Exit
Choose your choice : 2

    ID   NAME   SALARY   ROLE
     1   aaa   200000   h
*****Employee Database*****
1) Add New Record
2) Display All Records
3) Display by Employee ID
4) Deleting a Record
5) Exit
Choose your choice : 3
Enter Employee ID 1

     1   aaa   200000   h
*****Employee Database*****
1) Add New Record
2) Display All Records
3) Display by Employee ID
4) Deleting a Record
5) Exit
Choose your choice : 4
Enter Employee ID1

*****Employee Database*****
1) Add New Record
2) Display All Records
3) Display by Employee ID
4) Deleting a Record
5) Exit

```
Choose your choice : 2

    ID      NAME     SALARY      ROLE
*****Employee Database*****
1) Add New Record
2) Display All Records
3) Display by Employee ID
4) Deleting a Record
5) Exit
Choose your choice : 5

File Closed.
--------------------------------
Process exited after 51.14 seconds with return value 0
Press any key to continue . . .
```