

Name: Abdulmuiz Khalid Shaikh
Roll no.:2101062
Subject: Data Structure and Algorithm Laboratory
Assignment No.11

```
#include <iostream>
#include <fstream>
#include <cstdlib>
using namespace std;
```

```
class Student
{
public:
```

```
int rollno;
char name[20];
char dv;
```

```
void get()
{
cout<<"Enter name: ";
cin>>name;
cout<<"Enter roll no.: ";
cin>>rollno;
cout<<"Enter division: ";
cin>>dv;
}
```

```
void put()
{
cout<<"Name: "<<name<<endl;
cout<<"Roll No.: "<<rollno<<endl;
cout<<"Division: "<<dv<<endl;
}
```

```
int getroll()
{
return rollno;
}
};
```

```
void write_record()
{
    ofstream outFile;
    Student obj;

    outFile.open("student.dat", ios::binary | ios::app);

    obj.get();

    outFile.write((char*)&obj, sizeof(obj));

    outFile.close();
}
```

```
void display_record()
{
    ifstream inFile;
    Student obj;

    inFile.open("student.dat", ios::binary);

    while(inFile.read((char*)&obj, sizeof(obj)))
    {
        obj.put();
    }

    inFile.close();
}
```

```
void search_record(int n)
{
    ifstream inFile;
    Student obj;

    inFile.open("student.dat", ios::binary);

    while(inFile.read((char*)&obj, sizeof(obj)))
    {
        if(obj.getroll() == n)
        {
            obj.put();
            break;
        }
    }
}
```

```
}  
}  
inFile.close();  
}
```

```
void delete_record(int n)  
{  
    Student obj;  
    ifstream inFile;  
  
    inFile.open("student.dat", ios::binary);  
  
    ofstream outFile;  
    outFile.open("temp.dat", ios::binary | ios::out);  
  
    while(inFile.read((char*)&obj, sizeof(obj)))  
    {  
        if(obj.getroll() != n)  
            outFile.write((char*)&obj, sizeof(obj));  
    }  
  
    inFile.close();  
    outFile.close();  
  
    remove("student.dat");  
    rename("temp.dat", "student.dat");  
}
```

```
void modify_record(int n)  
{  
    fstream file;  
  
    file.open("student.dat", ios::in | ios::out);  
  
    Student obj;  
  
    while(file.read((char*)&obj, sizeof(obj)))  
    {  
        if(obj.getroll() == n)  
        {  
            cout<<"Enter new details: ";  
            obj.get();  
            int pos = -1*sizeof(obj);
```

```
file.seekp(pos,ios::cur);
file.write((char*)&obj, sizeof(obj));
}
}
file.close();
}
```

```
int main()
{
    int ch, n;

    while(true)
    {
        cout<<"1. Write"<<endl;
        cout<<"2. Display"<<endl;
        cout<<"3. Search"<<endl;
        cout<<"4. Delete"<<endl;
        cout<<"5. Modify"<<endl;
        cout<<"6. Exit"<<endl;

        cout<<"Enter your choice: ";
        cin>>ch;

        switch(ch)
        {
            case 1: cout<<"Enter no. of records: ";
                    cin>>n;
                    for(int i=0; i<n; i++)
                        write_record();
                    break;
            case 2: display_record();
                    break;
            case 3: cout<<"Enter roll no.: ";
                    cin>>n;
                    search_record(n);
                    break;

            case 4: cout<<"Enter roll no.: ";
                    cin>>n;
                    delete_record(n);
                    break;

            case 5: cout<<"Enter roll no.: ";
                    cin>>n;
                    modify_record(n);
```

```

break;
case 6: exit(1);
break;
}
}
return 0;
}

```

```

D:\AbdulMuiz\College Practicals\DSA\fileoperations.exe
1. Write
2. Display
3. Search
4. Delete
5. Modify
6. Exit
Enter your choice: 1
Enter no. of records: 3
Enter name: A
Enter roll no.: 101
Enter division: B
Enter name: M
Enter roll no.: 102
Enter division: B
Enter name: D
Enter roll no.: 401
Enter division: K
1. Write
2. Display
3. Search
4. Delete
5. Modify
6. Exit
Enter your choice: 2
Name: A
Roll No.: 101
Division: B
Name: M
Roll No.: 102
Division: B
Name: D
Roll No.: 401
Division: K
1. Write
2. Display
3. Search
4. Delete
5. Modify
6. Exit
Enter your choice: 3
Enter roll no.: 401
Name: D
Roll No.: 401
Division: K
1. Write
2. Display
3. Search
4. Delete
5. Modify
6. Exit

```

```

D:\AbdulMuiz\College Practicals\DSA\fileoperations.exe
6. Exit
Enter your choice: 4
Enter roll no.: 102
1. Write
2. Display
3. Search
4. Delete
5. Modify
6. Exit
Enter your choice: 5
Enter roll no.: 401
Enter new details: Enter name: N
Enter roll no.: 402
Enter division: K
1. Write
2. Display
3. Search
4. Delete
5. Modify
6. Exit
Enter your choice: 2
Name: A
Roll No.: 101
Division: B
Name: N
Roll No.: 402
Division: K
1. Write
2. Display
3. Search
4. Delete
5. Modify
6. Exit
Enter your choice: 6
.....
Process exited after 62.84 seconds with return value 1
Press any key to continue . . .

```