Assignment no - 10

Title - File Handling

Problem statement - Department maintains students information. The file contains roll no, name, div and address. Allows user to add, delete, search student data. If record does not exist, print particular message. Use sequential file for implementing file handling.

Objective - To study and implement file handling operations.

Outcome - studied and implemented file handling operations using sequential file

S/W and H/W requirements - Dell Optiplex 3020 MT, keyboard, Monitor, Fedora 20, Eclipse

Theory - File is a stream of bytes size of file is expressed in number of bytes

Sequential file -

In this file, records are added in order of length of record is not fixed. Search is time consuming. Insertion, deletion is time consuming

Random file -

We can read/write a particular word without having read permission records, we can position file parter to a particular location

Algorithm

① Write to file

```
write (int roll, char name, int div)
{
    student s = new (roll, name, div);
    file.seekp (0, ios::end);
    file.write ((char *)&s, sizeof (s));
}
```

② Display

```
display()
{
    student s;
    file.seekg (0, ios::beg);
    while (file.read ((char*)&s, sizeof(s));
    { s.displaydata(); }
}
```

③ Delete

```
void delete (int roll)
{
    ofstream newfile ("new.txt", ios::bin)
    file.seekg (0, ios::beg);
    bool flag = false;
    student s;
    while (not end of file)
    { if (s.roll == roll) then
        { flag = true;
          continue;
        }
```

```
        newfile.write((char*)&s, sizeof(s));
    }
    if(flag)
    {
        print "Record not found";
    }
    file.close();
    remove ("student.txt");
    rename ("new.txt", "student.txt");
    file.open ("student.txt", ios::bin);
}
```

④ search

```
void search (int roll))
{  student s;
    file.seekg(0, ios::beg);
    while(file has not ended) do
    { if (s.roll == roll) then
        s.display data();
        break;
    }
}
```

Test cases

Description	Expected	Actual	Result
① Roll no 1,22,33 Name-abc,aa,bc Div:- 2,3,1	1 abc 2 22 aa 3 33 bc 1	same as expected	Pass
② search : 22	22 aa 3.	same	Pass
③ Delete : 22	1 abc 2 33 bc 1	same as expected	Pass

Conclusion- We have successfully implemented file handling operations using sequential file.