```cpp
1: #include<iostream>
2: #include<fstream>
3: #include<conio.h>
4: #include<iomanip>
5: #include<string.h>
6: #include<stdio.h>
7: #include<process.h>
8:
9: using namespace std;
10:
11: class hostel
12: {
13:     char sname[20],fatname[20],motname[20],dept[30],droll[12],
     year[30],peradd[40],gdname[20],gdadd[40];
14:     char snum[15],fatnum[15],motnum[15],gdnum[15], dob[15],
     gender[10];
15:     int Distance, room_no, floor;
16:     char hostel_no[4], block, hroll[4];
17:     public:
18:     void main_menu();
19:     void getInfo();
20:     void showData();
21:     void addData();
22:     void displayInfo();
23:     void displayInfo1();
24:     void login();
25:     void allot();
26:     void roomDetails();
27:     void search();
28:     void update();
29:     void deleteStudent();
30:     void fees();
31:     friend class mess;
32: }h ;
33:
34: class mess{
35:     char hroll[4], month[20];
36:     int extra, bill, diets;
37:     public:
38:         void addBill();
39:         void getBill();
40:         void showBill();
41:         void displayBill();
42:     friend class hostel;
43: }m;
44:
```

```cpp
45: void hostel::addData()
46: {
47:      ofstream fout;
48:      fout.open("Temp.txt",ios::binary|ios::out|ios::app);
49:      h.getInfo();
50:      fout.write((char*)&h,sizeof(h));
51:      fout.close();
52:      cout<<"\n\nData Successfully Saved to File....\n";
53: }
54:
55: void hostel::getInfo()
56:     {
57:          cout<<setw(70);
58:          cout<<"\n\n\t\t\t Welcome to Student Information
     Module"<<endl;
59:          cout<<"\n";
60:
61:          cin.ignore();
62:          cout<<" Student's Name:-"<<"\t\t";
63:          gets(sname);
64:          cout<<" Father's Name:-"<<"\t\t";
65:          gets(fatname);
66:          cout<<" Mother's Name:-"<<"\t\t";
67:          gets(motname);
68:          cout<<" Date of Birth(dd/mm/yy):-"<<"\t\t";
69:          gets(dob);
70:          cout<<" Gender:-"<<"\t\t";
71:          gets(gender);
72:          cout<<" Name Of The Department:-\t\t";
73:          gets(dept);
74:          cout<<" Department Roll No.:-\t\t";
75:          gets(droll);
76:          cout<<" Enter the year:-"<<"\t\t";
77:          gets(year);
78:          cout<<" Permanent Address:-"<<"\t\t";
79:          gets(peradd);
80:          cout<<" Name of Local Guardian:-\t";
81:          gets(gdname);
82:          cout<<" Address Of Local Guardian:-\t";
83:          gets(gdadd);
84:          cout<<" Student's Mobile Number:-\t";
85:          gets(snum);
86:          cout<<" Father's Mobile Number:-\t";
87:          gets(fatnum);
88:          cout<<" Mother's Mobile Number:-\t";
89:          gets(motnum);
```

```cpp
90:            cout<<" Guardian's Mobile Number:-\t";
91:            gets(gdnum);
92:            cout<<"Distance of University from Your Permanent
    Address(in Kilometres):-\t";
93:            cin>>Distance;
94:
95:            system("pause");
96:        }
97:
98:
99: void hostel::showData(){
100:        ifstream fin;
101:        fin.open("Record.txt",ios::in|ios::binary);
102:        while(fin.read((char*)&h,sizeof(h)))
103:        {
104:         h.displayInfo();
105:        }
106:        fin.close();
107:        cout<<"\n\nData Reading from File Successfully
    Done....\n";
108:
109:        }
110:
111: void hostel::displayInfo1()
112: {
113:         cout<<"\n\n.......Student Details......\n";
114:     cout<<" Student's Name:-              "<<sname<<endl;
115:     cout<<" Father's Name:-              "<<fatname<<endl;
116:     cout<<" Mother's Name:-              "<<motname<<endl;
117:     cout<<" Date Of Birth:-              "<<dob<<endl;
118:     cout<<" Gender:-                     "<<gender<<endl;
119:     cout<<" Name Of The Department:-     "<<dept<<endl;
120:     cout<<" Department Roll No.          "<<droll<<endl;
121:     cout<<" Enter the year:-            "<<year<<endl;
122:     cout<<" Permanent Address:-          "<<peradd<<endl;
123:     cout<<" Name of Local Guardian:-     "<<gdname<<endl;
124:     cout<<" Address Of Local Guardian:- "<<gdadd<<endl;
125:     cout<<" Student's Mobile Number:-    "<<snum<<endl;
126:     cout<<" Father's Mobile Number:-     "<<fatnum<<endl;
127:     cout<<" Mother's Mobile Number:-     "<<motnum<<endl;
128:     cout<<" Guardian's Mobile Number:-   "<<gdnum<<endl;
129:     cout<<" Distance of University from \nYour Permanent
    Address(in Kilometres):-"<<Distance<<endl;
130: }
131:
132: void hostel::displayInfo()
```

```cpp
133: {
134:      cout<<"\n\n.......Student Details......\n";
135:     cout<<" Student's Name:-              "<<sname<<endl;
136:     cout<<" Father's Name:-              "<<fatname<<endl;
137:     cout<<" Mother's Name:-              "<<motname<<endl;
138:     cout<<" Date Of Birth:-              "<<dob<<endl;
139:     cout<<" Gender:-                     "<<gender<<endl;
140:     cout<<" Name Of The Department:-     "<<dept<<endl;
141:     cout<<" Department Roll No.          "<<droll<<endl;
142:     cout<<" Enter the year:-             "<<year<<endl;
143:     cout<<" Permanent Address:-          "<<peradd<<endl;
144:     cout<<" Name of Local Guardian:-     "<<gdname<<endl;
145:     cout<<" Address Of Local Guardian:- "<<gdadd<<endl;
146:     cout<<" Student's Mobile Number:-    "<<snum<<endl;
147:     cout<<" Father's Mobile Number:-     "<<fatnum<<endl;
148:     cout<<" Mother's Mobile Number:-     "<<motnum<<endl;
149:     cout<<" Guardian's Mobile Number:-   "<<gdnum<<endl;
150:     cout<<" Distance of University from \nYour Permanent
     Address(in Kilometres):-"<<Distance<<endl;
151:     cout<<"\n\n........Hostel Details........\n";
152:     cout<<" Hostel No.:-     "<<hostel_no<<endl;
153:     cout<<" Hostel Roll No.:-    "<<hroll<<endl;
154:     cout<<" Block:-  "<<block<<endl;
155:     cout<<" Floor No.:-"<<floor<<endl;
156:     cout<<" Room No.:-"<<room_no<<endl;
157: }
158:
159: void hostel::allot()
160: {
161:     ifstream fin;
162:     fin.open("Temp.txt",ios::in|ios::binary);
163:     ofstream fout;
164:     fout.open("Record.txt",ios::binary|ios::out|ios::app);
165:
166:      while(fin.read((char*)&h,sizeof(h)))
167:       {
168:        system("cls");
169:        h.displayInfo1();
170:        cout<<"\nPress Enter key to Enter Data OR 0 to Exit";
171:        char g;
172:        g = getch();
173:        if(g=='0'){
174:           cout<<endl;
175:           return;
176:        }
177:        h.roomDetails();
```

```cpp
178:          fout.write((char*)&h,sizeof(h));
179:        }
180:       fin.close();
181:       fout.close();
182:       remove("Temp.txt");
183: }
184:
185: void hostel::roomDetails(){
186:     system("cls");
187:     cout<<"\n\n\t\t\t Welcome to Room Allotment Section"<<endl;
188:     cout<<"\n";
189:     cout<<"Enter Hostel No.:-          ";
190:     cin>>hostel_no;
191:     cout<<"Enter Hostel Roll No.:-    ";
192:     cin>>hroll;
193:     cout<<"Enter Block:-              ";
194:     cin>>block;
195:     cout<<"Floor No.:-                ";
196:     cin>>floor;
197:     cout<<"Enter Room No:-            ";
198:     cin>>room_no;
199: }
200:
201: void hostel::search(){
202:     char r[20];
203:     cout<<"\n\nEnter Your Department or Hostel Roll No.:  ";
204:     cin>>r;
205:     int flag=0;
206:     ifstream inf, fin;
207:     inf.open("Record.txt",ios::binary|ios::in|ios::app);
208:     fin.open("Temp.txt",ios::binary|ios::in|ios::app);
209:
210:     while(inf.read((char*)&h,sizeof(h)))
211:     {
212:         if(stricmp(r, h.hroll)==0 || stricmp(r, h.droll)==0)
213:         {
214:             h.displayInfo();
215:             flag=1;
216:         }
217:     }
218:     while(fin.read((char*)&h,sizeof(h)))
219:     {
220:         if(stricmp(r, h.droll)==0)
221:         {
222:             h.displayInfo1();
223:             flag=1;
```

```cpp
224:         }
225:     }
226:     if(flag==0){
227:         cout<<"\n\nStudent with Roll No. "<<r<<" not
     found.\n\n";
228:     }
229: }
230:
231: void hostel::deleteStudent(){
232:     ifstream inf;
233:     inf.open("Record.txt", ios::binary|ios::in|ios::app);
234:     ofstream outf;
235:     outf.open("Temp_delete.txt",
     ios::binary|ios::out|ios::app);
236:     char r[10];
237:     int flag=0;
238:     cout<<"\nEnter Hostel Roll No.:- ";
239:     cin>>r;
240:     while(inf.read((char*)&h, sizeof(h)))
241:     {
242:         if(stricmp(r, h.hroll)==0)
243:         {
244:             cout<<"\n The following Student data will be
     deleted: \n\n";
245:             h.displayInfo();
246:             flag =1;
247:         }
248:         else{
249:             outf.write((char*)&h, sizeof(h));
250:         }
251:     }
252:     inf.close();
253:     outf.close();
254:     if(flag==0)
255:         {
256:             cout<<"\nStudent with Roll No. "<<r<<" not found";
257:         }
258:     remove("Record.txt");
259:     rename("Temp_delete.txt", "Record.txt");
260: }
261:
262: void hostel::update(){
263:     int flag=0, pos;
264:     char r[10];
265:     fstream fio;
266:     fio.open("Record.txt",ios::in|ios::out|ios::binary);
```

```cpp
267:
268:        cout<<"Enter Hostel Roll Number you want to Modify : ";
269:        cin>>r;
270:
271:        while(fio.read((char*)&h,sizeof(h)))
272:        {
273:         pos=fio.tellg();
274:         if(stricmp(r, h.hroll)==0)
275:         {
276:           cout<<"The Following Admission No. "<<r<<" will be
       modified with new data:\n";
277:           h.displayInfo();
278:           cout<<"\n\nNow Enter the New Details....\n";
279:           h.getInfo();
280:           fio.seekg(pos-sizeof(h));
281:           fio.write((char*)&h,sizeof(h));
282:           flag++;
283:         }
284:        }
285:        fio.close();
286:
287:        if(flag==0)
288:             cout<<"The Admission No. "<<r<<" not found....\n\n";
289: }
290:
291: void hostel::fees()
292: {
293:        int count=0, num, dietBill=0;
294:        ifstream fin, inf;
295:        fin.open("Record.txt",ios::in|ios::binary);
296:        inf.open("Mess.txt",ios::in|ios::binary);
297:        while(fin.read((char*)&h,sizeof(h)))
298:        {
299:         count++;
300:        }
301:        while(inf.read((char*)&m,sizeof(m))){
302:             dietBill += m.bill;
303:        }
304:        fin.close();
305:        cout<<"\n\n\t\t\t\t...........Fees & Stats
       Module............\n\n\n\n";
306:        cout<<"\t\t\t\tTotal No. of Students:-
       "<<count<<endl;
307:        cout<<"\t\t\t\tTotal Fees in Account:-
       "<<count*19550<<endl;
308:        cout<<"\t\t\t\tTotal Mess Security:-
       "<<count*6000<<endl;
```

```cpp
309:        cout<<"\t\t\t\tTotal Mess Bill:-
      "<<dietBill<<endl<<endl;
310: }
311:
312: void mess::addBill()
313: {
314:      ofstream fout;
315:      fout.open("Mess.txt",ios::binary|ios::out|ios::app);
316:      m.getBill();
317:      fout.write((char*)&m,sizeof(m));
318:      fout.close();
319:      cout<<"\n\nData Successfully Saved to File....\n";
320: }
321:
322: void mess::getBill(){
323:     cout<<"\n\n\t\t\t...........Mess Information
      Module............\n\n";
324:     ifstream fin;
325:     fin.open("Record.txt",ios::in|ios::binary);
326:     int flag=0;
327:     cout<<"Enter Hostel Roll No.:-      ";
328:     cin>>hroll;
329:     while(fin.read((char*)&h, sizeof(h)))
330:     {
331:         if(stricmp(hroll, h.hroll)==0)
332:         {
333:             cout<<"Enter Month:-                ";
334:             cin>>month;
335:             cout<<"Enter Diets:-                ";
336:             cin>>diets;
337:             cout<<"Enter Extras:-               ";
338:             cin>>extra;
339:             bill = (diets * 32) + extra;
340:             flag=1;
341:         }
342:     }
343:     if(flag==0){
344:         cout<<"\nNo Student with Roll No. "<<hroll<<" in
      records.";
345:     }
346: }
347:
348: void mess::showBill(){
349:      ifstream fin;
350:      fin.open("Mess.txt",ios::in|ios::binary);
351:      char r[5];
```

```cpp
352:        int flag=0;
353:        cout<<"\nEnter Hostel Roll No.:-      ";
354:        cin>>r;
355:        while(fin.read((char*)&m,sizeof(m)))
356:        {
357:            if(stricmp(m.hroll, r)==0){
358:                m.displayBill();
359:                flag=1;
360:            }
361:        }
362:        fin.close();
363:        if(flag==0){
364:            cout<<"\n\nNo records for roll no. "<<r;
365:        }
366:        cout<<"\n\nData Reading from File Successfully
      Done....\n";
367:
368:        }
369:
370: void mess::displayBill(){
371:        cout<<"\n\n\t\t\t======"<<month<<"======\n\n";
372:        cout<<"Diets:          "<<diets<<endl;
373:        cout<<"Extras:         "<<extra<<endl;
374:        cout<<"Bill:           "<<bill<<endl;
375: }
376:
377: void hostel::main_menu()
378: {
379:
380:        system("cls");
381:
382:        cout<<endl;
383:
384:        cout<<"\n\n\t\t\t 0. Exit"<<endl;
385:        cout<<"\n\n\t\t\t 1. Allot Room"<<endl;
386:        cout<<"\n\n\t\t\t 2. View Student Information"<<endl;
387:        cout<<"\n\n\t\t\t 3. Search Student"<<endl;
388:        cout<<"\n\n\t\t\t 4. Delete Student"<<endl;
389:        cout<<"\n\n\t\t\t 5. Update Student Data"<<endl;
390:        cout<<"\n\n\t\t\t 6. Add Mess Information"<<endl;
391:        cout<<"\n\n\t\t\t 7. View Mess Information"<<endl;
392:        cout<<"\n\n\t\t\t 8. View Fees and Stats"<<endl;
393:        int choice;
394:        cout<<"\n\n\t\t\t Enter your choice: ";
395:        cin>>choice;
396:
```

```
397:        if(choice==0){
398:            system("cls");
399:            return;
400:        }
401:        else if(choice==1)
402:        {
403:            system("cls");
404:            h.allot();
405:            system("pause");
406:            main_menu();
407:        }
408:        else if (choice==2)
409:        {
410:            system("cls");
411:            h.showData();
412:            system("pause");
413:            main_menu();
414:        }
415:        else if (choice==3)
416:        {
417:            system("cls");
418:            h.search();
419:            system("pause");
420:            main_menu();
421:        }
422:        else if (choice==4)
423:        {
424:            system("cls");
425:            h.deleteStudent();
426:            system("pause");
427:            main_menu();
428:        }
429:        else if (choice==5)
430:        {
431:            system("cls");
432:            h.update();
433:            system("pause");
434:            main_menu();
435:        }
436:        else if(choice==6)
437:        {
438:            system("cls");
439:            m.addBill();
440:            system("pause");
441:            main_menu();
442:        }
```

```
443:        else if(choice==7)
444:        {
445:            system("cls");
446:            m.showBill();
447:            system("pause");
448:            main_menu();
449:        }
450:        else if(choice==8)
451:        {
452:            system("cls");
453:            h.fees();
454:            system("pause");
455:            main_menu();
456:        }
457: }
458:
459: void hostel::login()
460: {
461:     char user[30], pass[30];
462:     cout<<"\n\n\n\n\n\n";
463:     cout<<"\t\t\t\t\tEnter UserName: ";
464:     cin>>user;
465:     cout<<"\n\n\t\t\t\t\tEnter Password: ";
466:     cin>>pass;
467:     if(stricmp(user,"abc12")==0 && stricmp(pass,"qwerty")==0)
468:     {
469:         main_menu();
470:     }
471:     else
472:     {
473:         cout<<"\n\n\t\t\tIncorrect Username or Password. Press
     any key to try again!";
474:         getch();
475:         system("cls");
476:         login();
477:     }
478: }
479:
480: menu()
481: {
482:     hostel h1;
483:     mess m1;
484:     system("cls");
485:     cout<<"\n\n\t\t========================= HOSTEL
     MANAGEMENT SYSYTEM =========================\n\n";
486:     cout<<"\n\n\t\t1. Administration Login\n";
```

```cpp
487:        cout<<"\n\n\t\t2. Enter Data To Register\n";
488:        cout<<"\n\n\t\t3. View Your Data\n";
489:        cout<<"\n\n\t\t4. View Mess Info\n";
490:        int choice;
491:        cout<<"\n\n\t\tEnter Your Choice: ";
492:        cin>>choice;
493:
494:        if(choice==1)
495:        {
496:            system("cls");
497:            h1.login();
498:            system("pause");
499:            menu();
500:        }
501:        else if(choice==2)
502:        {
503:            system("cls");
504:            h1.addData();
505:            system("pause");
506:            menu();
507:        }
508:        else if (choice==3)
509:        {
510:            system("cls");
511:            h1.search();
512:            system("pause");
513:            menu();
514:        }
515:        else if (choice==4)
516:        {
517:            system("cls");
518:            m1.showBill();
519:            system("pause");
520:            menu();
521:        }
522: }
523: int main()
524: {
525:     menu();
526:     getch();
527:     return 0;
528: }
```