



C++ p.cpp • record.txt

lab_6 > C++ p.cpp > search()

```
1  #include <iostream>
2  #include <stdio.h>
3  #include <string.h>
4  #include <fstream>
5  #include <filesystem>
6
7  using namespace std;
8
9  class record
10 {
11 public:
12     char usn[10], name[20], branch[10], sem[2];
13 } rec[20], found[20];
14
15 int m = 0, n;
16
17 void add()
18 {
19     int i;
20     cout << "Enter number of students: ";
21     cin >> n;
22     cout << "Enter Name, USN, Branch and Sem\n";
23     n = m + n;
24     for (i = m; i < n; i++)
25     {
26         cout << "Student " << i + 1 << " : \n";
27         cin >> rec[i].name >> rec[i].usn >> rec[i].branch >>
28         m++;
29     }
30 }
```



C++ p.cpp • secindex.txt

lab_6 > C++ p.cpp > sort_records()

```
33 {
34     int i, j;
35     record temp;
36     for (i = 0; i < n - 1; i++)
37     {
38         for (j = 0; j < n - i - 1; j++)
39         {
40             if (strcmp(rec[j].name, rec[j + 1].name) > 0)
41             {
42                 temp = rec[j];
43                 rec[j] = rec[j + 1];
44                 rec[j + 1] = temp;
45             }
46             else if (strcmp(rec[j].name, rec[j + 1].name) == 0)
47             {
48                 if (strcmp(rec[j].usn, rec[j + 1].usn) > 0)
49                 {
50                     temp = rec[j];
51                     rec[j] = rec[j + 1];
52                     rec[j + 1] = temp;
53                 }
54             }
55         }
56     }
57 }
58
59 void create_file()
60 {
61     fstream index("secindex.txt", ios::out);
62     fstream file("record.txt", ios::out);
```





p.cpp record.txt

lab_6 > p.cpp > search()

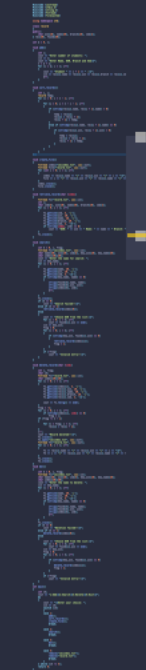
```
1  #include <iostream>
2  #include <stdio.h>
3  #include <string.h>
4  #include <fstream>
5  #include <filesystem>
6
7  using namespace std;
8
9  class record
10 {
11 public:
12     char usn[10], name[20], branch[10], sem[2];
13 } rec[20], found[20];
14
15 int m = 0, n;
16
17 void add()
18 {
19     int i;
20     cout << "Enter number of students: ";
21     cin >> n;
22     cout << "Enter Name, USN, Branch and Sem\n";
23     n = m + n;
24     for (i = m; i < n; i++)
25     {
26         cout << "Student " << i + 1 << " : \n";
27         cin >> rec[i].name >> rec[i].usn >> rec[i].branch >>
28         m++;
29     }
30 }
```



p.cpp secindex.txt

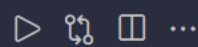
lab_6 > p.cpp > sort_records()

```
33 {
34     int i, j;
35     record temp;
36     for (i = 0; i < n - 1; i++)
37     {
38         for (j = 0; j < n - i - 1; j++)
39         {
40             if (strcmp(rec[j].name, rec[j + 1].name) > 0)
41             {
42                 temp = rec[j];
43                 rec[j] = rec[j + 1];
44                 rec[j + 1] = temp;
45             }
46             else if (strcmp(rec[j].name, rec[j + 1].name) == 0)
47             {
48                 if (strcmp(rec[j].usn, rec[j + 1].usn) > 0)
49                 {
50                     temp = rec[j];
51                     rec[j] = rec[j + 1];
52                     rec[j + 1] = temp;
53                 }
54             }
55         }
56     }
57 }
58
59 void create_file()
60 {
61     fstream index("secindex.txt", ios::out);
62     fstream file("record.txt", ios::out);
```





p.cpp record.txt



```
lab_6 > p.cpp > retrieve_record(char *)
69     file.close();
70 }
71
72 void retrieve_record(char *index)
73 {
74     fstream f1("record.txt", ios::in);
75     int i;
76     char ind[3], usn[10], name[20], branch[10], sem[2];
77     for (i = 0; i < n; i++)
78     {
79         f1.getline(ind, 3, '|');
80         f1.getline(usn, 10, '|');
81         f1.getline(name, 20, '|');
82         f1.getline(branch, 10, '|');
83         f1.getline(sem, 2, '\n');
84         if (strcmp(index, ind) == 0)
85             cout << "USN: " << usn << " Name: " << name << "
86     }
87     f1.close();
88 }
89
90 void search()
91 {
92     int k = 0, i, flag;
93     fstream f1("secindex.txt", ios::in);
94     char name[20], usn[10], ind[3], key_usn[10], key_name[20];
95     char index[20][20];
96     cout << "Enter the name for search: ";
97     cin >> key_name;
98     for (i = 0; i < n; i++)
99     {
```

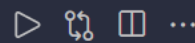
p.cpp secindex.txt

```
lab_6 > p.cpp > sort_records()
105     strcpy(found[k].name, name);
106     strcpy(found[k].usn, usn);
107     strcpy(index[k], ind);
108     k++;
109 }
110 }
111 f1.close();
112 if (k == 0)
113     cout << "Search failed!!\n";
114 else if (k == 1)
115     retrieve_record(index[0]);
116 else
117 {
118     cout << "Choose USN from the list:\n";
119     for (i = 0; i < k; i++)
120         cout << found[i].usn << endl;
121     cin >> key_usn;
122     flag = 0;
123     for (i = 0; i < k; i++)
124     {
125         if (strcmp(key_usn, found[i].usn) == 0)
126         {
127             retrieve_record(index[i]);
128             flag = 1;
129         }
130     }
131     if (!flag)
132         cout << "Invalid entry!!\n";
133 }
134 }
135 }
```





p.cpp record.txt



```
lab_6 > C++ p.cpp > retrieve_record(char *)
138     int i, flag;
139     char ch;
140     fstream f1("record.txt", ios::in);
141     char index[20][20];
142     for (i = 0; i < n; i++)
143     {
144         f1.getline(index[i], 3, '|');
145         f1.getline(rec[i].usn, 10, '|');
146         f1.getline(rec[i].name, 20, '|');
147         f1.getline(rec[i].branch, 10, '|');
148         f1.getline(rec[i].sem, 2, '\n');
149
150         cout << f1.tellg() << endl;
151     }
152     flag = -1;
153     for (i = 0; i < n; i++)
154         if (strcmp(index[i], indx) == 0)
155             flag = i;
156     if (flag != n - 1)
157     {
158         for (i = flag; i < n; i++)
159             rec[i] = rec[i + 1];
160     }
161     n--;
162     cout << "Record deleted!!\n";
163     f1.close();
164     f1.open("secindex.txt", ios::out);
165     fstream f2("record.txt", ios::out);
166     for (i = 0; i < n; i++)
167     {
168         f1 << rec[i].name << "|" << rec[i].usn << "|" << i << "\n"
169         f2 << i << "|" << rec[i].usn << "|" << rec[i].name << "|"
```



p.cpp secindex.txt

```
lab_6 > C++ p.cpp > sort_records()
166     for (i = 0; i < n; i++)
167     {
168         f1 << rec[i].name << "|" << rec[i].usn << "|" << i << "\n"
169         f2 << i << "|" << rec[i].usn << "|" << rec[i].name << "|"
170     }
171     f1.close();
172     f2.close();
173 }
174 void del()
175 {
176     int k = 0, i, flag;
177     fstream f1("secindex.txt", ios::in);
178     char name[20], usn[10], ind[3], key_usn[10], key_name[20];
179     char index[20][20];
180     cout << "Enter the name to delete: ";
181     cin >> key_name;
182     for (i = 0; i < n; i++)
183     {
184         f1.getline(name, 20, '|');
185         f1.getline(usn, 10, '|');
186         f1.getline(ind, 3, '\n');
187         if (strcmp(key_name, name) == 0)
188         {
189             strcpy(found[k].name, name);
190             strcpy(found[k].usn, usn);
191             strcpy(index[k], ind);
192             k++;
193         }
194     }
195     f1.close();
196     if (k == 0)
```



lab_6 > p.cpp > retrieve_record(char *)

```
180     cout << "Enter the name to delete: ";
181     cin >> key_name;
182     for (i = 0; i < n; i++)
183     {
184         f1.getline(name, 20, '|');
185         f1.getline(usn, 10, '|');
186         f1.getline(ind, 3, '\n');
187         if (strcmp(key_name, name) == 0)
188         {
189             strcpy(found[k].name, name);
190             strcpy(found[k].usn, usn);
191             strcpy(index[k], ind);
192             k++;
193         }
194     }
195     f1.close();
196     if (k == 0)
197         cout << "Deletion failed!!\n";
198     else if (k == 1)
199         delete_record(index[0]);
200     else
201     {
202         cout << "Choose USN from the list:\n";
203         for (i = 0; i < k; i++)
204             cout << found[i].usn << endl;
205         cin >> key_usn;
206         flag = 0;
207         for (i = 0; i < k; i++)
208         {
209             if (strcmp(key_usn, found[i].usn) == 0)
```

lab_6 > p.cpp > sort_records()

```
221     int ch;
222     cout << "1:Add\n2:Search\n3>Delete\n4:Exit\n";
223     do
224     {
225         cout << "\nEnter your choice: ";
226         cin >> ch;
227         switch (ch)
228         {
229             case 1:
230                 add();
231                 sort_records();
232                 create_file();
233                 break;
234
235             case 2:
236                 search();
237                 break;
238
239             case 3:
240                 del();
241                 break;
242
243             case 4:
244                 remove("secindex.txt");
245                 remove("record.txt");
246                 break;
247         }
248     } while (ch != 4);
249     return 0;
250 }
```

```
lab_6 > record.txt
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Enter your choice: 3
Enter the name to delete: ritviz
Choose USN from the list:
100
101
100
23
```

lab_6 > secindex.txt

```
1  ||0
2  ritviz|101|1
3  roshan|102|2
4  sid|me|3
5  yash|103|4
6  |
```

1: Code