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1  #include <iostream>
2  #include <cstdio>
3  #include <cstring>
4  #include <cstdlib>
5  using namespace std;
6
7  static int p = 0;
8
9  class Hotel {
10     char roomnum[5], host[10], start[5], send[5], from[10], to[10], chair[8][4][10];
11
12 public:
13     void install();
14     void allotment();
15     void empty();
16     void show();
17     void avail();
18     void position(int i);
19 } room[20];
20
21 void vline(char ch) {
22     for (int i = 80; i > 0; i--) {
23         cout << ch;
24     }
25     cout << endl;
26 }
27
28 void Hotel::install() {
29     cout << "Enter Room Number: ";
30     cin >> room[p].roomnum;
31     cout << "Enter Host's Name: ";
32     cin >> room[p].host;
33     cout << "Session Start Time: ";
34     cin >> room[p].start;
35     cout << "Session End Time: ";
36     cin >> room[p].send;
37     cout << "From: ";
38     cin >> room[p].from;
39     cout << "To: ";
40     cin >> room[p].to;
41     room[p].empty();
42     p++;
43 }
44
45 void Hotel::allotment() {
46     int chairNum;
47     char number[5];
48     cout << "Enter Room Number: ";
49     cin >> number;
50     int num;
51     for (num = 0; num < p; num++) {
52         if (strcmp(room[num].roomnum, number) == 0)
53             break;
54     }
55
56     if (num == p) {
57         cout << "Room number not found.\n";
58         return;
59     }
60
61     while (true) {
62         cout << "\nEnter Chair Number (1-32): ";
63         cin >> chairNum;
64         if (chairNum < 1 || chairNum > 32) {
65             cout << "Invalid chair number. There are only 32 chairs in this room.\n";
66         } else {
67             int row = (chairNum - 1) / 4;
68             int col = (chairNum - 1) % 4;
69             if (strcmp(room[num].chair[row][col], "Empty") == 0) {

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70         cout << "Enter Customer's Name: ";
71         cin >> room[num].chair[row][col];
72         break;
73     } else {
74         cout << "The chair is already reserved.\n";
75     }
76 }
77 }
78 }
79
80 void Hotel::empty() {
81     for (int i = 0; i < 8; i++) {
82         for (int j = 0; j < 4; j++) {
83             strcpy(room[p].chair[i][j], "Empty");
84         }
85     }
86 }
87
88 void Hotel::show() {
89     char number[5];
90     cout << "Enter Room Number: ";
91     cin >> number;
92     int num;
93     for (num = 0; num < p; num++) {
94         if (strcmp(room[num].roomnum, number) == 0)
95             break;
96     }
97
98     if (num == p) {
99         cout << "Room number not found.\n";
100         return;
101     }
102
103     vline('*');
104     cout << "Room number: " << room[num].roomnum << "\nHost: " << room[num].host
105         << "\nStart Time: " << room[num].start << "\tEnd Time: " << room[num].send
106         << "\nFrom: " << room[num].from << "\tTo: " << room[num].to << "\n";
107     vline('*');
108     room[num].position(num);
109
110     int a = 1;
111     for (int i = 0; i < 8; i++) {
112         for (int j = 0; j < 4; j++) {
113             if (strcmp(room[num].chair[i][j], "Empty") != 0) {
114                 cout << "\nChair number " << a << " is reserved for " << room[num].chair[
115                     i][j] << ".";
116                 a++;
117             }
118         }
119     }
120     cout << endl;
121 }
122
123 void Hotel::position(int l) {
124     int s = 1, emptyCount = 0;
125     for (int i = 0; i < 8; i++) {
126         for (int j = 0; j < 4; j++) {
127             cout.width(5);
128             cout.fill(' ');
129             cout << s << ".";
130             cout.width(10);
131             cout.fill(' ');
132             cout << room[l].chair[i][j];
133             if (strcmp(room[l].chair[i][j], "Empty") == 0)
134                 emptyCount++;
135             s++;
136         }
137     }
138     cout << endl;
139 }

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138     cout << "\n\nThere are " << emptyCount << " chairs empty in Room Number: " << room[l
139     ].roomnum << endl;
140 }
141 void Hotel::avail() {
142     for (int num = 0; num < p; num++) {
143         vline('*');
144         cout << "Room number: " << room[num].roomnum << "\nHost: " << room[num].host
145             << "\nStart Time: " << room[num].start << "\tEnd Time: " << room[num].send
146             << "\nFrom: " << room[num].from << "\tTo: " << room[num].to << "\n";
147         vline('*');
148         vline('_');
149     }
150 }
151
152 int main() {
153     system("cls");
154     int w;
155     while (true) {
156         cout << "\n\n\n\n\n";
157         cout << "\t\t\t1. Install\n\t\t\t2. Reservation\n\t\t\t3. Show\n\t\t\t4. Rooms
158             Available\n\t\t\t5. Exit";
159         cout << "\n\n\t\t\tEnter your Choice: ";
160         cin >> w;
161         switch (w) {
162             case 1:
163                 room[p].install();
164                 break;
165             case 2:
166                 room[p].allotment();
167                 break;
168             case 3:
169                 room[p].show();
170                 break;
171             case 4:
172                 room[p].avail();
173                 break;
174             case 5:
175                 exit(0);
176             default:
177                 cout << "Invalid choice, please try again.\n";
178         }
179     }
180     return 0;
181 }

```