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1  #include <iostream>
2  #include <vector>
3  #include <string>
4  #include <algorithm>
5  #include <thread>
6  #include <chrono>
7
8  using namespace std;
9
10 // Define a class to represent book information
11 class Book {
12 public:
13     // Book title
14     string title;
15     // Book author
16     string author;
17     // Book genre
18     string genre;
19     // Book publication year
20     int year;
21
22     // Constructor to initialize book attributes
23     Book(const string& _title, const string& _author, const string& _genre, int
year)
24         : title(_title), author(_author), genre(_genre), year(_year) {}
25 };
26
27 // Function to perform insertion sort on a vector of books
28 void insertionSort(vector<Book>& books) {
29     // Get the number of books in the vector
30     int n = books.size();
31     // Iterate over the vector, starting at the second book
32     for (int i = 1; i < n; i++) {
33         // Store the current book in a temporary variable
34         Book temp = books[i];
35         // Initialize the index of the previous book
36         int j = i - 1;
37
38         // Compare books based on their publication year and swap if necessary
39         while (j >= 0 && books[j].year > temp.year) {
40             books[j + 1] = books[j];
41             j--;
42         }
43
44         // Place the current book in its sorted position
45         books[j + 1] = temp;
46     }
47 }
48
49 void playSiren() {
50     for (int i = 0; i < 10; i++) {
51         cout << "\a"; // Produces a beep sound (system-dependent)
52         this_thread::sleep_for(chrono::milliseconds(500)); // Sleep for 500
milliseconds
53     }
54 }
55
56 int main() {
57     int workIDs[10] = {44306237, 44306232, 44306238, 44306239, 44306236, 44306235,
44306234, 44306233, 44306232, 44306231};
58     int passwords[10] = {12345, 12345, 22345, 32345, 42345, 52345, 62345, 72345,
82345, 92345};
59     int attempt = 3;
60     bool isAuthenticated = false;
61
62     while (attempt > 0) {

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63     int userWorkID;
64     int userPassword;
65
66     cout << "Please Enter Your Work ID: " << endl;
67     cin >> userWorkID;
68     cout << "Please Enter Your Password: " << endl;
69     cin >> userPassword;
70
71     isAuthenticated = false;
72
73     for (int i = 0; i < 10; i++) {
74         if (workIDs[i] == userWorkID && passwords[i] == userPassword) {
75             isAuthenticated = true;
76             break;
77         }
78     }
79
80     if (isAuthenticated) {
81         cout << "ACCESS GRANTED." << endl;
82         break;
83     } else {
84         cout << "\a"; // Beep sound for incorrect password
85         cout << "ACCESS DENIED!!! Please Try again" << endl;
86         attempt--;
87
88         if (attempt == 0) {
89             cout << "Attempts Run Out. Access Locked!" << endl;
90             // Play the siren sound if access is locked
91             playSiren();
92             return 0; // Exit the program
93         } else {
94             cout << attempt << " attempts Remaining" << endl;
95         }
96     }
97 }
98
99 // Create a vector to store the books
100 vector<Book> bookList;
101
102 cout << "Welcome to the Yellow Pages for Books!" << endl;
103
104 while (true) {
105     cout << "\nEnter book details or type 'q' to quit:" << endl;
106     string title, author, genre;
107     int year;
108
109     cout << "Title: ";
110     cin.ignore();
111     getline(cin, title);
112
113     if (title == "q") {
114         break;
115     }
116
117     cout << "Author: ";
118     getline(cin, author);
119
120     cout << "Genre: ";
121     getline(cin, genre);
122
123     cout << "Year of Publication: ";
124     cin >> year;
125
126     bookList.push_back(Book(title, author, genre, year));
127     insertionSort(bookList);
128     cout << "Book added successfully!" << endl;

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```
129     }
130
131     cout << "\nBooks sorted by publication year:" << endl;
132
133     for (const Book& book : bookList) {
134         cout << "Title: " << book.title << ", Year: " << book.year << endl;
135     }
136
137
138     return 0;
139 }
140
141
```