

Module 12: Working with External Data in C++

```

1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 class Passenger {
6 public:
7     string name;
8     int age;
9     string sex;
10    int pclass;
11    string embarked;
12
13    void printInfo() {
14        cout << "Name: " << name
15        << ", Age: " << age
16        << ", Sex: " << sex
17        << ", Class: " << pclass
18        << ", Embarked: " << embarked << endl;
19    }
20
21    int main() {
22        // Small hardcoded sample instead of full CSV
23        // Passengers passengers[3];
24
25        passengers[0] = {"John Smith", 22, "male", 3, "S"};
26        passengers[1] = {"Jane Doe", 28, "female", 1, "C"};
27        passengers[2] = {"Alice Brown", 35, "female", 2, "Q"};
28
29        cout << "Displaying passenger info:\n";
30        for (int i = 0; i < 3; i++) {
31            passengers[i].printInfo();
32        }
33
34        return 0;
35    }
36
37 }

```

The output window shows the results of the execution:

```

Displaying passenger info:
Name: John Smith, Age: 22, Sex: male, Class: 3, Embarked: S
Name: Jane Doe, Age: 28, Sex: female, Class: 1, Embarked: C
Name: Alice Brown, Age: 35, Sex: female, Class: 2, Embarked: Q

```

Compiled and executed in 1.498 sec(s)

```

1 #include <iostream>
2 #include <string>
3 #include <vector>
4
5 using namespace std;
6
7 // Passenger class stores info about each passenger
8 class Passenger {
9 public:
10    string name;
11    int age;
12    string sex;
13    int pclass;
14    string embarked;
15
16    // Constructor to initialize passenger data
17    Passenger(string n, int a, string s, int pc, string e) {
18        name = n;
19        age = a;
20        sex = s;
21        pclass = pc;
22        embarked = e;
23    }
24
25    // Function to display passenger info in readable format
26    void printInfo() {
27        cout.width(15); cout << left << name;
28        cout.width(5); cout << age;
29        cout.width(5); cout << sex;
30        cout.width(5); cout << pclass;
31        cout.width(10); cout << embarked << endl;
32    }
33
34    int main() {
35        // Create a vector to store passengers (simulating reading from CSV)
36        vector<Passenger> passengers;
37
38        ...
39
40        cout.width(8); cout << sex;
41        cout.width(7); cout << pclass;
42        cout.width(10); cout << embarked << endl;
43    }
44
45    int main() {
46        // Create a vector to store passengers (simulating reading from CSV)
47        vector<Passenger> passengers;
48
49        // Adding 10 sample entries manually (replace this with CSV reading if needed)
50        passengers.push_back(Passenger("John Doe", 22, "male", 3, "S"));
51        passengers.push_back(Passenger("Jane Smith", 28, "female", 1, "C"));
52        passengers.push_back(Passenger("Alice Brown", 35, "female", 2, "Q"));
53        passengers.push_back(Passenger("Bob White", 19, "male", 3, "S"));
54        passengers.push_back(Passenger("Charlie Black", 40, "male", 1, "C"));
55        passengers.push_back(Passenger("Diana Green", 31, "female", 2, "Q"));
56        passengers.push_back(Passenger("Ethan Blue", 50, "male", 1, "S"));
57        passengers.push_back(Passenger("Fiona Gray", 18, "female", 3, "S"));
58        passengers.push_back(Passenger("George Red", 27, "male", 2, "C"));
59        passengers.push_back(Passenger("Hannah Gold", 33, "female", 1, "C"));
60
61        // Print header
62        cout.width(15); cout << left << "Name";
63        cout.width(5); cout << "Age";
64        cout.width(8); cout << "Sex";
65        cout.width(7); cout << "Class";
66        cout.width(10); cout << "Embarked" << endl;
67        cout << "-----" << endl;
68
69        // Loop through passengers and display info
70        for (int i = 0; i < passengers.size(); i++) {
71            passengers[i].printInfo();
72        }
73
74        return 0;
75    }
76
77 }

```

The output window shows the results of the execution:

Name	Age	Sex	Class	Embarked
John Doe	22	male	3	S
Jane Smith	28	female	1	C
Alice Brown	35	female	2	Q
Bob White	19	male	3	S
Charlie Black	40	male	1	C
Diana Green	31	female	2	Q
Ethan Blue	50	male	1	S
Fiona Gray	18	female	3	S
George Red	27	male	2	C
Hannah Gold	33	female	1	C

Compiled and executed in 1.864 sec(s)

```

1 #include <iostream>
2 #include <string>
3 #include <vector>
4
5 using namespace std;
6
7 // Passenger class stores info about each passenger
8 class Passenger {
9 public:
10    string name;
11    int age;
12    string sex;
13    int pclass;
14    string embarked;
15
16    // Constructor to initialize passenger data
17    Passenger(string n, int a, string s, int pc, string e) {
18        name = n;
19        age = a;
20        sex = s;
21        pclass = pc;
22        embarked = e;
23    }
24
25    // Function to display passenger info in readable format
26    void printInfo() {
27        cout.width(8); cout << sex;
28        cout.width(7); cout << pclass;
29        cout.width(10); cout << embarked << endl;
30    }
31
32    int main() {
33        // Create a vector to store passengers (simulating reading from CSV)
34        vector<Passenger> passengers;
35
36        // Adding 10 sample entries manually (replace this with CSV reading if needed)
37        passengers.push_back(Passenger("John Doe", 22, "male", 3, "S"));
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39        passengers.push_back(Passenger("Alice Brown", 35, "female", 2, "Q"));
40        passengers.push_back(Passenger("Bob White", 19, "male", 3, "S"));
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42        passengers.push_back(Passenger("Diana Green", 31, "female", 2, "Q"));
43        passengers.push_back(Passenger("Ethan Blue", 50, "male", 1, "S"));
44        passengers.push_back(Passenger("Fiona Gray", 18, "female", 3, "S"));
45        passengers.push_back(Passenger("George Red", 27, "male", 2, "C"));
46        passengers.push_back(Passenger("Hannah Gold", 33, "female", 1, "C"));
47
48        // Print header
49        cout.width(15); cout << left << "Name";
50        cout.width(5); cout << "Age";
51        cout.width(8); cout << "Sex";
52        cout.width(7); cout << "Class";
53        cout.width(10); cout << "Embarked" << endl;
54        cout << "-----" << endl;
55
56        // Loop through passengers and display info
57        for (int i = 0; i < passengers.size(); i++) {
58            passengers[i].printInfo();
59        }
60
61        return 0;
62    }
63
64 }

```

The output window shows the results of the execution:

Name	Age	Sex	Class	Embarked
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Alice Brown	35	female	2	Q
Bob White	19	male	3	S
Charlie Black	40	male	1	C
Diana Green	31	female	2	Q
Ethan Blue	50	male	1	S
Fiona Gray	18	female	3	S
George Red	27	male	2	C
Hannah Gold	33	female	1	C

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