

```
34
35 const int NUMROWS = 16;
36 const int NUMCOLS = 8;
37 char val[NUMROWS][NUMCOLS];
38
39 2. (Desk check) Determine the output produced by the following program:
40 #include <iostream>
41 using namespace std;
42 int main()
43 {
44     int i, j, val[3][4] = {8,16,9,52,3,15,27,6,14,25,2,10};
45     for (i = 0; i < 3; i++)
46         for (j = 0; j < 4; j++)
47             cout << val[i][j] << " ";
48     return 0;
49 }
50
51 The output is as follows:
52 8 16 9 52 3 15 27 6 14 25 2 10
53
54 3. (Program) a. Write, compile, and run a C++ program that adds the values of all elements in
55 the val array used in Exercise 2 and displays the total.
56
57 #include <iostream>
58 using namespace std;
59
60 int main(){
61     int i, j, val[3][4] = { 8, 16, 9, 52, 3, 15, 27, 6, 14, 25, 2, 10 };
62     int total = 0;
63     for (i = 0; i < 3; i++){
64         for (j = 0; j < 4; j++){
65             cout << val[i][j] << " " << endl;
66             total = total + val[i][j];
67         }
68     }
69 }
70     cout << "The total is " << total << endl;
71     system("PAUSE");
```

54 3. (Program) a. Write, compile, and run a C++ program that adds the values of all elements in  
55 the val array used in Exercise 2 and displays the total.

```
56  
57 #include <iostream>  
58 using namespace std;  
59  
60 int main(){  
61     int i, j, val[3][4] = { 8, 16, 9, 52, 3, 15, 27, 6, 14, 25, 2, 10 };  
62     int total = 0;  
63     for (i = 0; i < 3; i++){  
64         for (j = 0; j < 4; j++){  
65             cout << val[i][j] << " " << endl;  
66             total = total + val[i][j];  
67         }  
68     }  
69 }  
70     cout << "The total is " << total << endl;  
71     system("PAUSE");  
72     return 0;  
73 }
```

74  
75  
76 b. Modify the program written for Exercise 3a to display the total of each row separately.

```
77  
78 #include <iostream>  
79 using namespace std;  
80  
81 int main(){  
82     int i, j, val[3][4] = { 8, 16, 9, 52, 3, 15, 27, 6, 14, 25, 2, 10 };  
83     int total = 0;  
84     for (i = 0; i < 3; i++){  
85         for (j = 0; j < 4; j++){  
86             total = total + val[i][j];  
87             cout << val[i][j] << " " << "The new total is " << total << endl;  
88         }  
89     }  
90 }  
91
```

```
74
75
76 b. Modify the program written for Exercise 3a to display the total of each row separately.
77
78 #include <iostream>
79 using namespace std;
80
81 int main(){
82     int i, j, val[3][4] = { 8, 16, 9, 52, 3, 15, 27, 6, 14, 25, 2, 10 };
83     int total = 0;
84     for (i = 0; i < 3; i++){
85         for (j = 0; j < 4; j++){
86             total = total + val[i][j];
87             cout << val[i][j] << " " << "The new total is " << total << endl;
88         }
89     }
90 }
91
92 }
93
94     system("PAUSE");
95     return 0;
96 }
97
98 4. (Program) Write, compile, and run a C++ program that adds equivalent elements of the twodimensional
99 arrays named first and second. Both arrays should have two rows and three columns.
100 For example, element [1][2] of the resulting array should be the sum of first[1][2]
101 and second[1][2]. The first and second arrays should be initialized as follows:
102
103     first      second
104 16  18  23    24  52  77
105 54  91  11    16  19  59
106
107 #include <iostream>
108 using namespace std;
109
110 int main(){
111     int i, j, first[2][3] = { 16,18,23,54,91,11 };
112     int second[2][3] = { 24, 52, 77, 16, 19, 59 };
```

```
94         system("PAUSE");
95         return 0;
96     }
97
98     4. (Program) Write, compile, and run a C++ program that adds equivalent elements of the twodimensional
99     arrays named first and second. Both arrays should have two rows and three columns.
100     For example, element [1][2] of the resulting array should be the sum of first[1][2]
101     and second[1][2]. The first and second arrays should be initialized as follows:
102         first          second
103     16   18   23       24   52   77
104     54   91   11       16   19   59
105
106     #include <iostream>
107     using namespace std;
108
109     int main(){
110         int i, j, first[2][3] = { 16,18,23,54,91,11 };
111         int second[2][3] = { 24, 52, 77, 16, 19, 59 };
112         int total = 0;
113         for (i = 0; i < 2; i++){
114             for (j = 0; j < 3; j++){
115                 total = second[i][j] + first[i][j];
116                 cout << total << endl;
117             }
118         }
119     }
120 }
121
122     system("PAUSE");
123
124     5. (Program) a. Write, compile, and run a C++ program that finds and displays the maximum value
125     in a two-dimensional array of integers. The array should be declared as a 4-by-5 array of integers
126     and initialized with the data 16, 22, 99, 4, 18, -258, 4, 101, 5, 98, 105, 6, 15, 2, 45, 33, 88, 72, 16, and 3.
127
128     #include <iostream>
129     using namespace std;
130
131
```

## A-First-Book-of-C-Exercises-/Exercise 7.4 (Completed) - GitHub

1. (Practice) Write specification statements for the following: a. An array of integers with 6 ... `int`  
`i, j, val[3][4] = {8, 16, 9, 52, 3, 15, 27, 6, 14, 25, 2, 10};`.

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