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/* The following code example is taken from the book
 * "The C++ Standard Library - A Tutorial and Reference, 2nd Edition"
 * by Nicolai M. Josuttis, Addison-Wesley, 2012
 *
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 * warranty, and with no claim as to its suitability for any purpose.
 */
#include "algostuff.hpp"
using namespace std;

int main()
{
    vector<int> c1 = { 1, 2, 2, 4, 6, 7, 7, 9 };

    deque<int>  c2 = { 2, 2, 2, 3, 6, 6, 8, 9 };

    // print source ranges
    cout << "c1:                          " ;
    copy (c1.cbegin(), c1.cend(),
          ostream_iterator<int>(cout," "));
    cout << endl;
    cout << "c2:                          " ;
    copy (c2.cbegin(), c2.cend(),
          ostream_iterator<int>(cout," "));
    cout << '\n' << endl;

    // sum the ranges by using merge()
    cout << "merge():                     ";
    merge (c1.cbegin(), c1.cend(),
           c2.cbegin(), c2.cend(),
           ostream_iterator<int>(cout," "));
    cout << endl;

    // unite the ranges by using set_union()
    cout << "set_union():                 ";
    set_union (c1.cbegin(), c1.cend(),
               c2.cbegin(), c2.cend(),
               ostream_iterator<int>(cout," "));
    cout << endl;

    // intersect the ranges by using set_intersection()
    cout << "set_intersection():          ";
    set_intersection (c1.cbegin(), c1.cend(),
                      c2.cbegin(), c2.cend(),
                      ostream_iterator<int>(cout," "));
    cout << endl;

    // determine elements of first range without elements of second range
    // by using set_difference()
    cout << "set_difference():            ";
    set_difference (c1.cbegin(), c1.cend(),
                    c2.cbegin(), c2.cend(),
                    ostream_iterator<int>(cout," "));
```

```
    cout << endl;

    // determine difference the ranges with set_symmetric_difference()
    cout << "set_symmetric_difference(): ";
    set_symmetric_difference (c1.cbegin(), c1.cend(),
                              c2.cbegin(), c2.cend(),
                              ostream_iterator<int>(cout," "));
    cout << endl;
}
```