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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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 */
#include <vector>
#include <algorithm>
#include <iterator>
#include "print.hpp"
using namespace std;

int main()
{
    vector<int> coll;

    // create back inserter for coll
    // - inconvenient way
    back_inserter_iterator<vector<int> > iter(coll);

    // insert elements with the usual iterator interface
    *iter = 1;
    iter++;
    *iter = 2;
    iter++;
    *iter = 3;
    PRINT_ELEMENTS(coll);

    // create back inserter and insert elements
    // - convenient way
    back_inserter(coll) = 44;
    back_inserter(coll) = 55;
    PRINT_ELEMENTS(coll);

    // use back inserter to append all elements again
    // - reserve enough memory to avoid reallocation
    coll.reserve(2*coll.size());
    copy (coll.begin(), coll.end(),      // source
          back_inserter(coll));          // destination
    PRINT_ELEMENTS(coll);
}

```