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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 "algotstuff.hpp"
using namespace std;

int main()
{
    vector<int> coll;

    INSERT_ELEMENTS(coll, 3, 7);
    INSERT_ELEMENTS(coll, 5, 9);
    INSERT_ELEMENTS(coll, 1, 4);

    PRINT_ELEMENTS (coll, "on entry:          ");

    // convert collection into a heap
    make_heap (coll.begin(), coll.end());

    PRINT_ELEMENTS (coll, "after make_heap(): ");

    // pop next element out of the heap
    pop_heap (coll.begin(), coll.end());
    coll.pop_back();

    PRINT_ELEMENTS (coll, "after pop_heap(): ");

    // push new element into the heap
    coll.push_back (17);
    push_heap (coll.begin(), coll.end());

    PRINT_ELEMENTS (coll, "after push_heap(): ");

    // convert heap into a sorted collection
    // - NOTE: after the call it is no longer a heap
    sort_heap (coll.begin(), coll.end());

    PRINT_ELEMENTS (coll, "after sort_heap(): ");
}

```