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/* The following code example is taken from the book
 * "The C++ Standard Library – A Tutorial and Reference"
 * by Nicolai M. Josuttis, Addison-Wesley, 1999
 *
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 * warranty, and with no claim as to its suitability for any purpose.
 */
#include <iostream>
#include <valarray>
using namespace std;

// print valarray line-by-line
template<class T>
void printValarray (const valarray<T>& va, int num)
{
    for (int i=0; i<va.size()/num; ++i) {
        for (int j=0; j<num; ++j) {
            cout << va[i*num+j] << ' ';
        }
        cout << endl;
    }
    cout << endl;
}

int main()
{
    /* valarray with 12 elements
     * - four rows
     * - three columns
     */
    valarray<double> va(12);

    // fill valarray with values
    for (int i=0; i<12; i++) {
        va[i] = i;
    }

    printValarray (va, 3);

    // assign 77 to all values that are less than 5
    va[va<5.0] = 77.0;

    // add 100 to all values that are greater than 5 and less than 9
    va[va>5.0 && va<9.0]
        = valarray<double>(va[va>5.0 && va<9.0]) + 100.0;

    printValarray (va, 3);
}

```