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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 <iostream>
#include <string>
#include <vector>
#include <memory>
using namespace std;

int main()
{
    // two shared pointers representing two persons by their name
    shared_ptr<string> pNico(new string("nico"));
    shared_ptr<string> pJutta(new string("jutta"));

    // capitalize person names
    (*pNico)[0] = 'N';
    pJutta->replace(0, 1, "J");

    // put them multiple times in a container
    vector<shared_ptr<string>> whoMadeCoffee;
    whoMadeCoffee.push_back(pJutta);
    whoMadeCoffee.push_back(pJutta);
    whoMadeCoffee.push_back(pNico);
    whoMadeCoffee.push_back(pJutta);
    whoMadeCoffee.push_back(pNico);

    // print all elements
    for (auto ptr : whoMadeCoffee) {
        cout << *ptr << " ";
    }
    cout << endl;

    // overwrite a name again
    *pNico = "Nicolai";

    // print all elements again
    for (auto ptr : whoMadeCoffee) {
        cout << *ptr << " ";
    }
    cout << endl;

    // print some internal data
    cout << "use_count: " << whoMadeCoffee[0].use_count() << endl;
}

```