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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 <string>
#include <regex>
#include <iostream>
#include <algorithm>
using namespace std;

int main()
{
    string data = "<person>\n"
                  "<first>Nico</first>\n"
                  "<last>Josuttis</last>\n"
                  "</person>\n";

    regex reg("<(.*?)>(.*?)</(\\1)>");

    // iterate over all matches (using a regex_iterator):
    sregex_iterator pos(data.cbegin(), data.cend(), reg);
    sregex_iterator end;
    for ( ; pos!=end ; ++pos ) {
        cout << "match: " << pos->str() << endl;
        cout << " tag: " << pos->str(1) << endl;
        cout << " value: " << pos->str(2) << endl;
    }

    // use a regex_iterator to process each matched substring as element in an
    algorithm:
    sregex_iterator beg(data.cbegin(), data.cend(), reg);
    for_each (beg, end, [](const smatch& m) {
        cout << "match: " << m.str() << endl;
        cout << " tag: " << m.str(1) << endl;
        cout << " value: " << m.str(2) << endl;
    });
}

```