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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_token_iterator):
    sregex_token_iterator pos(data.cbegin(), data.cend(), // sequence
                             reg,                        // token separator
                             {0, 2});                    // 0: full match, 2: second substring
    sregex_token_iterator end;
    for ( ; pos != end ; ++pos ) {
        cout << "match: " << pos->str() << endl;
    }
    cout << endl;

    string names = "nico, jim, helmut, paul, tim, john paul, rita";
    regex sep("[ \\t\\n]*[,;.] [ \\t\\n]*"); // separated by , ; or . and spaces
    sregex_token_iterator p(names.cbegin(), names.cend(), // sequence
                           sep,                          // separator
                           -1);                          // -1: values between separators
    sregex_token_iterator e;
    for ( ; p != e ; ++p ) {
        cout << "name: " << *p << endl;
    }
}

```