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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>
using namespace std;

int main()
{
    // case-insensitive find LaTeX index entries
    string pat1 = R"(\. *index\[([^\]]*)\])"; // first capture group
    string pat2 = R"(\. *index\[([^\]]*)\]\[([^\]]*)\])"; // 2nd and 3rd capture group
    regex pat (pat1+"\\n"+pat2,
               regex_constants::egrep|regex_constants::icase);

    // initialize string with characters from standard input:
    string data((istreambuf_iterator<char>(cin)),
               istreambuf_iterator<char>());

    // search and print matching index entries:
    smatch m;
    auto pos = data.cbegin();
    auto end = data.cend();
    for ( ; regex_search (pos, end, m, pat); pos=m.suffix().first) {
        cout << "match: " << m.str() << endl;
        cout << "  val: " << m.str(1)+m.str(2) << endl;
        cout << "  see: " << m.str(3) << endl;
    }
}

```