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

int main()
{
    // create constant string
    const string hello("Hello, how are you?");

    // initialize string s with all characters of string hello
    string s(hello.cbegin(),hello.cend());

    // ranged-based for loop that iterates through all the characters
    for (char c : s) {
        cout << c;
    }
    cout << endl;

    // reverse the order of all characters inside the string
    reverse (s.begin(), s.end());
    cout << "reverse: " << s << endl;

    // sort all characters inside the string
    sort (s.begin(), s.end());
    cout << "ordered: " << s << endl;

    // remove adjacent duplicates
    // - unique() reorders and returns new end
    // - erase() shrinks accordingly
    s.erase (unique(s.begin(),
                    s.end()),
              s.end());
    cout << "no duplicates: " << s << endl;
}

```