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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 <streambuf>
#include <locale>
#include <cstdio>

template <typename charT,
         typename traits = std::char_traits<charT> >
class basic_outbuf : public std::basic_streambuf<charT, traits>
{
protected:
    // central output function
    // - print characters in uppercase mode
    virtual typename traits::int_type
        overflow (typename traits::int_type c) {
        if (!traits::eq_int_type(c, traits::eof())) {
            // convert lowercase to uppercase
            c = std::toupper(c, this->getloc());

            // convert the character into a char (default: '?')
            char cc = std::use_facet<std::ctype<charT>>
                (this->getloc()).narrow(c, '?');

            // and write the character to the standard output
            if (std::putchar(cc) == EOF) {
                return traits::eof();
            }
        }
        return traits::not_eof(c);
    }
};

typedef basic_outbuf<char>    outbuf;
typedef basic_outbuf<wchar_t> woutbuf;

```