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/* The following code example is taken from the book
 * "The C++ Standard Library – A Tutorial and Reference"
 * by Nicolai M. Josuttis, Addison-Wesley, 1999
 *
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 * warranty, and with no claim as to its suitability for any purpose.
 */
#include <functional>

/* class for the compose_f_gx_hx adapter
 */
template <class OP1, class OP2, class OP3>
class compose_f_gx_hx_t
: public std::unary_function<typename OP2::argument_type,
                           typename OP1::result_type>
{
private:
    OP1 op1;    // process: op1(op2(x), op3(x))
    OP2 op2;
    OP3 op3;
public:
    // constructor
    compose_f_gx_hx_t (const OP1& o1, const OP2& o2, const OP3& o3)
        : op1(o1), op2(o2), op3(o3) {
    }

    // function call
    typename OP1::result_type
    operator() (const typename OP2::argument_type& x) const {
        return op1(op2(x), op3(x));
    }
};

/* convenience function for the compose_f_gx_hx adapter
 */
template <class OP1, class OP2, class OP3>
inline compose_f_gx_hx_t<OP1, OP2, OP3>
compose_f_gx_hx (const OP1& o1, const OP2& o2, const OP3& o3) {
    return compose_f_gx_hx_t<OP1, OP2, OP3>(o1, o2, o3);
}

```