```cpp
/* 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 <iostream>
#include <exception>
#include <cstdlib>

namespace MyLib {
    double readAndProcessSum (std::istream&);
}

int main()
{
    using namespace std;
    double sum;

    try {
        sum = MyLib::readAndProcessSum(cin);
    }
    catch (const ios::failure& error) {
        cerr << "I/O exception: " << error.what() << endl;
        return EXIT_FAILURE;
    }
    catch (const exception& error) {
        cerr << "standard exception: " << error.what() << endl;
        return EXIT_FAILURE;
    }
    catch (...) {
        cerr << "unknown exception" << endl;
        return EXIT_FAILURE;
    }

    // print sum
    cout << "sum: " << sum << endl;
}

#include <istream>

namespace MyLib {
    double readAndProcessSum (std::istream& strm)
    {
        using std::ios;
        double value, sum;

        // save current state of exception flags
        ios::iostate oldExceptions = strm.exceptions();

        // let failbit and badbit throw exceptions
        // - NOTE: failbit is also set at end-of-file
```

```
        strm.exceptions (ios::failbit | ios::badbit);

        try {
            // while stream is OK
            // - read value and add it to sum
            sum = 0;
            while (strm >> value) {
                sum += value;
            }
        }
        catch (...) {
            // if exception not caused by end-of-file
            // - restore old state of exception flags
            // - rethrow exception
            if (!strm.eof()) {
                strm.exceptions(oldExceptions);  // restore exception flags
                throw;                           // rethrow
            }
        }

        // restore old state of exception flags
        strm.exceptions (oldExceptions);

        // return sum
        return sum;
    }
}
```