```
/* 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 <chrono>
#include <ctime>
#include <string>

// convert timepoint of system clock to calendar time string
inline
std::string asString (const std::chrono::system_clock::time_point& tp)
{
    // convert to system time:
    std::time_t t = std::chrono::system_clock::to_time_t(tp);
    std::string ts = ctime(&t);    // convert to calendar time
    ts.resize(ts.size()-1);        // skip trailing newline
    return ts;
}

// convert calendar time to timepoint of system clock
inline
std::chrono::system_clock::time_point
makeTimePoint (int year, int mon, int day,
               int hour, int min, int sec=0)
{
    struct std::tm t;
    t.tm_sec = sec;        // second of minute (0 .. 59 and 60 for leap seconds)
    t.tm_min = min;        // minute of hour (0 .. 59)
    t.tm_hour = hour;      // hour of day (0 .. 23)
    t.tm_mday = day;       // day of month (0 .. 31)
    t.tm_mon = mon-1;      // month of year (0 .. 11)
    t.tm_year = year-1900; // year since 1900
    t.tm_isdst = -1;       // determine whether daylight saving time
    std::time_t tt = std::mktime(&t);
    if (tt == -1) {
        throw "no valid system time";
    }
    return std::chrono::system_clock::from_time_t(tt);
}
```