Time Point

Now, we will study the first component of the chrono library.

A duration consists of a span of time, defined as some number of ticks of some time unit. A time point consists of a clock and a time duration. This time duration can be positive or negative.

```
template <class Clock, class Duration= typename Clock::duration>
class time_point;
```

The epoch is not defined for the clocks `std::chrono::steady_clock`, `std::chrono::high_resolution_clock` and `std::chrono::system`. But on the popular platform the epoch of `std::chrono::system` is usually defined as 1.1.1970. You can calculate the time since 1.1.1970 in the resolutions nanoseconds, seconds and minutes.

```cpp
// epoch.cpp
#include <iostream>
#include <chrono>

int main(){
  auto timeNow= std::chrono::system_clock::now();
  auto duration= timeNow.time_since_epoch();
  std::cout << duration.count() << "ns\n";      // nanoseconds (default)

  // duration_cast converts one type into the other
  auto durationSeconds = std::chrono::duration_cast<std::chrono::seconds>(duration).count();
  std::cout << durationSeconds << "s\n";       // seconds

  auto durationMinutes = std::chrono::duration_cast<std::chrono::minutes>(duration).count();
  std::cout << durationMinutes << "m\n";       // minutes

  return 0;
}
```

Time since epoch