1 Class `source_location` [reflection.src_loc]

1.1 Header `<source_location>` Synopsis [reflection.src_loc.intro]

```cpp
namespace std {
    struct source_location {
        constexpr source_location() noexcept;

        constexpr uint_least32_t line() const noexcept;
        constexpr uint_least32_t column() const noexcept;
        constexpr const char* file_name() const noexcept;
        constexpr const char* function_name() const noexcept;

        static consteval source_location current() noexcept;
    };
}
```

[Note: The intent of `source_location` is to have a small size and efficient copying.— end note ]

`constexpr source_location() noexcept;`

1 Effects: Constructs an object of class `source_location`.

`constexpr uint_least32_t line() const noexcept;`

3 Returns: The presumed line number (16.8) represented by this object.

`constexpr uint_least32_t column() const noexcept;`

4 Returns: An implementation-defined value representing some offset from the start of the line represented by this object.
constexpr const char* file_name() const noexcept;

Returns: The presumed name of the current source file (14.2) represented
by this object as an NTBS.

constexpr const char* function_name() const noexcept;

Returns: If this object represents a position in the body of a function,
returns an implementation-defined NTBS that should correspond to the
function name. Otherwise, returns an empty string.

static constexpr source_location current() noexcept;

Returns: When invoked by a function call whose postfix-expression is a
(possibly parenthesized) id-expression naming current, returns a source_-
location with an implementation-defined value. The value should be af-
fected by #line (14.4) in the same manner as for __LINE__ and __FILE__.
If invoked in some other way, the value returned is unspecified.

Remark: When a brace-or-equal-initializer is used to initialize a non-static
data member, any calls to current should correspond to the location of
the constructor or aggregate initialization that initializes the member.

[Note: When used as a default argument (9.3.6), the value of the source_-
location will be the location of the call to current at the call site. – end
note ]

[Example:

struct s {
    source_location member = source_location::current();
    int other_member;
    s(source_location loc = source_location::current())
        : member(loc) // values of member will be from call-site
          
    {} s(int blather) : // values of member should be hereabouts
        other_member(blather)
          
    {} s(double) // values of member should be hereabouts
          
    
};
void f(source_location a = source_location::current()) {
    source_location b = source_location::current(); // values in b represent
    this line
}

void g() {
    f(); // f's first argument corresponds to this line of code

    source_location c = source_location::current();
    f(c); // f's first argument gets the same values as c, above
}

– end example ]
2 Feature macro

We recommend the feature macro \_\_cpp\_lib\_source\_location for this feature.