

# std::numeric\_limits

Defined in header <limits>

```
template< class T > class numeric_limits;
```

The numeric\_limits class template provides a standardized way to query various properties of arithmetic types (e.g. the largest possible value for type `int` is `std::numeric_limits<int>::max()`).

This information is provided via specializations of the numeric\_limits template. The standard library makes available specializations for all arithmetic types:

Defined in header <limits>

```
template<> class numeric_limits<bool>;  
template<> class numeric_limits<char>;  
template<> class numeric_limits<signed char>;  
template<> class numeric_limits<unsigned char>;  
template<> class numeric_limits<wchar_t>;  
template<> class numeric_limits<char8_t>; (since C++20)  
template<> class numeric_limits<char16_t>; (since C++11)  
template<> class numeric_limits<char32_t>; (since C++11)  
template<> class numeric_limits<short>;  
template<> class numeric_limits<unsigned short>;  
template<> class numeric_limits<int>;
```

```
std::numeric_limits<T>::min()
```

```
std::numeric_limits<T>::max()
```

```
std::numeric_limits<T>::lowest()
```





```
#include <limits>
```

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Floating point

$-3.40282e+38$

lowest

0

$1.17549e-38$

min

$3.40282e+38$

max

The diagram illustrates the range of a signed integer. At the top, a horizontal bar is divided into two equal halves: the left half is light green and the right half is dark blue. The dark blue half contains the text "Signed Integer". Below this, three boxes are arranged horizontally. The first box is dark blue and labeled "lowest" in a red box below it. The second box is black and contains the number "0", with a red box labeled "min" below it. The third box is light green and contains the number "-32768", with a red box labeled "max" below it. The background is a gradient of blue, with several white diagonal lines in the bottom right corner.

Signed Integer

0

-32768

32767

lowest

min

max

Unsigned Integer(Short)

0

0

65535

lowest

min

max





#include <limits>