public member function

std::normal_distribution::operator()

<random>

```
(1)  template<class URNG>
     result_type operator()(URNG& g);
(2)  template<class URNG>
     result_type operator()(URNG& g, const param_type& parm);
```

Generate random number

Returns a new random number that follows the distribution's parameters associated to the object (version *1*) or those specified by *parm* (version *2*).

The generator object (*g*) supplies uniformly-distributed random integers through its `operator()` member function. The normal_distribution object transforms the values obtained this way so that successive calls to this member function with the same arguments produce floating-point values that follow a *Normal distribution* with the appropriate parameters.

Parameters

`g`
: A uniform random number generator object, used as the source of randomness.
URNG shall be a *uniform random number generator* type, such as one of the standard generator classes.

`parm`
: An object representing the distribution's parameters, obtained by a call to member function param.
`param_type` is a member type.

Return value

A new random number.
`result_type` is a member type, defined as an alias of the first class template parameter (`RealType`).

Example

```
// normal_distribution example
#include <iostream>
#include <chrono>
#include <random>

int main()
{
  // construct a trivial random generator engine from a time-based seed:
  unsigned seed = std::chrono::system_clock::now().time_since_epoch().count();
  std::default_random_engine generator (seed);

  std::normal_distribution<double> distribution (0.0,1.0);

  std::cout << "some Normal-distributed(0.0,1.0) results:" << std::endl;
  for (int i=0; i<10; ++i)
    std::cout << distribution(generator) << std::endl;

  return 0;
}
```

Possible output:

```
some Normal-distributed(0.0,1.0) results:
1.01253
-1.6811
0.722295
-1.73855
0.0196423
-2.51224
1.37467
0.999222
1.24636
2.02573
```

Complexity

Amortized constant (a constant number of invocations of `g.operator()`).

See also

normal_distribution::param	Distribution parameters (public member function)