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Reference <string> string operator+

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function
std::operator+ (string)
C++98 C++11
string (1)
c-string (2)
character (3)
string operator+ (const string& lhs, const string& rhs);
string operator+ (string&& lhs, string&& rhs);
string operator+ (string&& lhs, const string& rhs);
string operator+ (const string& lhs, string&& rhs);
string operator+ (const string& lhs, const char* rhs);
string operator+ (string&& lhs, const char* rhs);
string operator+ (const char* lhs, const string& rhs);
string operator+ (const char* lhs, string&& rhs);
string operator+ (const string& lhs, char rhs);
string operator+ (string&& lhs, char rhs);
string operator+ (char lhs, const string& rhs);
string operator+ (char lhs, string&& rhs);

Concatenate strings
Returns a newly constructed string object with its value being the concatenation of the characters in lhs followed by those of rhs.

C++11
In the signatures taking at least one rvalue reference as argument, the returned object is move-constructed by passing this argument, which is left in an unspecified but valid state. If both arguments are rvalue references, only one of them is moved (it is unspecified which), with the other one preserving its value.

Parameters
lhs, rhs
Arguments to the left- and right-hand side of the operator, respectively.
If of type char*, it shall point to a null-terminated character sequence.

Example
1 // concatenating strings
2 #include <iostream>
3 #include <string>
4
5 main ()
6 {
7 std::string firstlevel ("com");
8 std::string secondlevel ("cplusplus");
9 std::string scheme ("http://");
10 std::string hostname;
11 std::string url;
12
13 hostname = "www." + secondlevel + '.' + firstlevel;
14 url = scheme + hostname;
15
16 std::cout << url << '\n';
17
18 return 0;
19 }

Output:
http://www.cplusplus.com

Return Value
A string whose value is the concatenation of lhs and rhs.

Complexity
Unspecified, but generally linear in the resulting string length (and linear in the length of the non-moved argument for signatures with rvalue references).

Iterator validity
The signatures with rvalue references may invalidate iterators, pointers and references related to the moved string.

string::crend
string::c_str
string::data
string::empty
string::end
string::erase
string::find
string::find_first_not_of
string::find_first_of
string::find_last_not_of
string::find_last_of
string::front
string::get_allocator
string::insert
string::length
string::max_size
string::operator+=
string::operator=
string::operator[]
string::pop_back
string::push_back
string::rbegin
string::rend
string::replace
string::reserve
string::resize
string::rfind
string::shrink_to_fit
string::size
string::substr
string::swap
member constants:
string::npos
non-member overloads:
getline (string)
operator+ (string)
operator<< (string)
operator>> (string)
relational operators (string)
swap (string)

Data races

The signatures with *rvalue references* modify the moved `string`.

Exception safety


Strong guarantee: if an exception is thrown, there are no changes in either `string` objects.

If `s` is not a null-terminated character sequence, it causes *undefined behavior*.

If the resulting `string` length would exceed the `max_size`, a `length_error` exception is thrown. A `bad_alloc` exception is thrown if the function needs to allocate storage and fails.

See also

string::append	Append to string (public member function)
string::insert	Insert into string (public member function)
string::operator+=	Append to string (public member function)

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