

# std::memcmp

Defined in header <cstring>

```
int memcmp( const void* lhs, const void* rhs, std::size_t count );
```

Reinterprets the objects pointed to by lhs and rhs as arrays of `unsigned char` and compares the first count characters of these arrays. The comparison is done lexicographically.

The sign of the result is the sign of the difference between the values of the first pair of bytes (both interpreted as `unsigned char`) that differ in the objects being compared.

## Parameters

**lhs, rhs** - pointers to the memory buffers to compare  
**count** - number of bytes to examine

## Return value

Negative value if the first differing byte (reinterpreted as `unsigned char`) in lhs is less than the corresponding byte in rhs.

0 if all count bytes of lhs and rhs are equal.

Positive value if the first differing byte in lhs is greater than the corresponding byte in rhs.

## Notes

This function reads object representations, not the object values, and is typically meaningful for only trivially-copyable objects that have no padding. For example, `memcmp()` between two objects of type `std::string` or `std::vector` will not compare their contents, and `memcmp()` between two objects of type `struct{char c; int n;}` will compare the padding bytes whose values may differ when the values of `c` and `n` are the same.

## Example

Run this code

```
#include <iostream>
#include <cstring>

void demo(const char* lhs, const char* rhs, std::size_t sz)
{
    std::cout << std::string(lhs, sz);
    const int rc = std::memcmp(lhs, rhs, sz);
    if(rc < 0)
        std::cout << " precedes ";
    else if(rc > 0)
        std::cout << " follows ";
    else
        std::cout << " compares equal to ";
    std::cout << std::string(rhs, sz) << " in lexicographical order\n";
}

int main()
{
    char a1[] = {'a','b','c'};
    char a2[sizeof a1] = {'a','b','d'};

    demo(a1, a2, sizeof a1);
    demo(a2, a1, sizeof a1);
    demo(a1, a1, sizeof a1);
}
```

Output:

abc precedes abd in lexicographical order  
abd follows abc in lexicographical order  
abc compares equal to abc in lexicographical order

## See also

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<b>strcmp</b>	compares two strings (function)
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<b>strncmp</b>	compares a certain number of characters from two strings (function)
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**C documentation for memcmp**

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