**substr**

string substr (size\_t pos = 0, size\_t len = npos) const;

pos>=0;

len>=0为无符号数，-1为最大，超出范围子串为余下所有串，len=0为空串;

**append**

|  |  |
| --- | --- |
| *string (1)* | string& append (const string& str); |
| *substring (2)* | string& append (const string& str, size\_t subpos, size\_t sublen); |
| *c-string (3)* | string& append (const char\* s); |
| *buffer (4)* | string& append (const char\* s, size\_t n); |
| *fill (5)* | string& append (size\_t n, char c); |
| *range (6)* | template <class InputIterator>  string& append (InputIterator first, InputIterator last); |

**Parameters**

str

Another [string](http://www.cplusplus.com/string) object, whose value is appended.

subpos

Position of the first character in *str* that is copied to the object as a substring.  
If this is greater than *str*'s [length](http://www.cplusplus.com/string::length), it throws [out\_of\_range](http://www.cplusplus.com/out_of_range).  
Note: The first character in *str* is denoted by a value of 0 (not 1).

sublen

Length of the substring to be copied (if the string is shorter, as many characters as possible are copied).  
A value of [string::npos](http://www.cplusplus.com/string::npos) indicates all characters until the end of *str*.

s

Pointer to an array of characters (such as a *c-string*).

n

Number of characters to copy.

c

Character value, repeated *n* times.

first, last

[Input iterators](http://www.cplusplus.com/InputIterator) to the initial and final positions in a range. The range used is [first,last), which includes all the characters between *first* and *last*, including the character pointed by *first* but not the character pointed by *last*