

C++ std::string Cheatsheet

1. Creating & Initializing

```
string s1 = "hello";  
string s2("world");  
string s3(5, 'x'); // "xxxxx"
```

2. Getting Length

```
s1.length(); // or s1.size(); -> returns 5
```

3. Access Characters

```
s1[0]; // 'h'  
s1.at(1); // 'e' (bounds-checked)  
s1.front(); // 'h'  
s1.back(); // 'o'
```

4. Modify String

```
s1 += " world"; // "hello world"  
s1.push_back('!'); // "hello!"  
s1.pop_back(); // removes last char -> "hello"  
s1.insert(2, "abc"); // "heabclo"  
s1.erase(2, 3); // removes 3 chars from index 2 -> "hello"  
s1.replace(0, 2, "HI"); // "HIlllo"  
s1.clear(); // makes s1 an empty string
```

5. Find & Substring

```
string s = "codingisfun";  
s.find("is"); // returns 6  
s.rfind("i"); // returns 7 (last 'i')  
s.substr(0, 6); // "coding"
```

6. Comparing

```
s1 == s2; // true/false  
s1.compare(s2); // 0 if equal, <0 if s1 < s2, >0 if s1 > s2
```

7. Conversion

```
string num = "123";  
  
int x = stoi(num);           // 123  
  
string str = to_string(456); // "456"
```

8. Check Empty

```
s1.empty();    // true if string is empty
```

9. Loop Through String

```
for (char ch : s1)  
    cout << ch;  
  
for (int i = 0; i < s1.length(); i++)  
    cout << s1[i];
```

10. Case Conversion

```
#include <cctype>  
  
char ch = 'A';  
  
tolower(ch); // 'a'  
  
toupper('b'); // 'B'
```

11. Starts/Ends With (C++20)

```
s.starts_with("he"); // true  
  
s.ends_with("lo");   // true
```