



# Converting Number to String in C++

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Converting numbers to string or vice-versa is actually a big paradigm shift in itself. In general or more specifically in competitive programming there are many instances where we need to convert a number to a string or string to a number. But lack of knowledge of certain essential tools binds us to do so. Some methods to achieve this task are mentioned in this article.

## Converting Number to String in C++

There are *3 major methods to convert a number to a string* , which are as follows:

- Using string Stream
- Using `to_string()`
- Using boost lexical cast

### Method 1: Using string streams

In this method, a string stream declares a stream object which first inserts a number, as a stream into an object and then uses “ `str()`” to follow the internal conversion of a number to a string.

Example:

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## CPP

```
// C++ code to demonstrate string stream method
// to convert number to string.
#include<iostream>
#include <sstream> // for string streams
#include <string> // for string
using namespace std;
int main()
{
    int num = 2016;

    // declaring output string stream
    ostringstream str1;

    // Sending a number as a stream into output
    // string
    str1 << num;

    // the str() converts number into string
    string geek = str1.str();

    // Displaying the string
    cout << "The newly formed string from number is : ";
    cout << geek << endl;

    return 0;
}
```

## Output

Time Complexity:  $O(n)$

Auxiliary Space:  $O(n)$

Method 2: Using `to_string()`

The function `to_string()` accepts a number(which can be any data type) and returns the number in the desired string.

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## CPP

```
// C++ code to demonstrate "to_string()" method
// to convert number to string.
#include <iostream>
#include <string> // for string and to_string()
using namespace std;

// Driver Code
int main()
{
    // Declaring integer
    int i_val = 20;

    // Declaring float
    float f_val = 30.50;

    // Conversion of int into string using
    // to_string()
    string stri = to_string(i_val);

    // Conversion of float into string using
    // to_string()
    string strf = to_string(f_val);

    // Displaying the converted strings
    cout << "The integer in string is : ";
    cout << stri << endl;
    cout << "The float in string is : ";
    cout << strf << endl;

    return 0;
}
```

Output

The integer in string is : 20

The float in string is : 30.500000

Time Complexity: O(n)

Auxiliary Space: O(n)

Method 3: Using boost lexical cast

Similar to string conversion, the "lexical\_cast()" function remains the same, but in '[boost lexical cast](#)' time argument list modifies to "lexical\_cast(numeric\_var).

Example:

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## CPP

```
// C++ code to demonstrate "lexical_cast()" method
// to convert number to string.
#include <boost/lexical_cast.hpp> // for lexical_cast()
#include <iostream>
#include <string> // for string
using namespace std;

// Driver Code
int main()
{
    // Declaring float
    float f_val = 10.5;

    // Declaring int
    int i_val = 17;

    // lexical_cast() converts a float into string
    string strf = boost::lexical_cast<string>(f_val);

    // lexical_cast() converts a int into string
    string stri = boost::lexical_cast<string>(i_val);

    // Displaying string converted numbers
    cout << "The float value in string is : ";
    cout << strf << endl;
    cout << "The int value in string is : ";
    cout << stri << endl;
```

Output

The float value in string is : 10.5

The int value in string is : 17

Method: Using the sprintf() function

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C

```
#include <stdio.h>

int main()
{
    int n=12234;
    char str[1000];
    sprintf(str,"%d", n);
    printf("the string is : %s",str);

    return 0;
}
```

C++

```
#include <iostream>
using namespace std;

int main()
{
    int n=12234;
    char str[1000];
    sprintf(str,"%d", n);
    cout<<"the string is : " << str;

    return 0;
}
```

// this code is contributed by shivanisingh

Output

the string is : 12234