

ESCAPE sequences in C++

<code>\n</code>	newline	NL (LF)
<code>\t</code>	horizontal tab	HT
<code>\v</code>	vertical tab	VT
<code>\b</code>	backspace	BS
<code>\r</code>	carriage return	CR
<code>\f</code>	form feed	FF
<code>\a</code>	alert (bell)	BEL
<code>\\</code>	backslash	<code>\</code>
<code>\?</code>	question mark	<code>?</code>
<code>\'</code>	single quote	(apostrophe) <code>'</code>
<code>\"</code>	double quote	<code>"</code>

Operator Symbols

<code>()</code>	Function call
<code>+</code>	Plus (binary addition)
<code>-</code>	Minus (binary subtraction)
<code>*</code>	Multiplication
<code>/</code>	Divide
<code><<</code>	Shift-left/stream insert
<code>>></code>	Shift-right/stream extract
<code>==</code>	Equal
<code>!=</code>	Not equal
<code>&&</code>	Logical AND
<code> </code>	Logical OR
<code>=</code>	Assignment
<code>+=</code>	Arithmetic assignment
<code>-=</code>	Arithmetic assignment
<code>*=</code>	Arithmetic assignment
<code>/=</code>	Arithmetic assignment

Program 1

```
// A simple C++ program
#include <iostream>
using namespace std;

int main()
{
    cout << "Programming is great fun!";
    return 0;
}
```

Program 2

```
// A simple C++ program
#include <iostream>
using namespace std;

int main()
{
    cout << "Programming is " << "great fun!";
    return 0;
}
```

Program 3

```
// A simple C++ program
#include <iostream>
using namespace std;

int main()
{
    cout << "Programming is ";
    cout << "great fun!";
    return 0;
}
```

Program 4

```
// This program has a variable.
#include <iostream>
using namespace std;

int main()
{
    int number;

    number = 5;
    cout << "The value in number is " << number << endl;
    return 0;
}
```

Program 5

```
// This program shows three variables defined on the same line.
#include <iostream>
using namespace std;

int main()
{
    int floors, rooms, suites;

    floors = 15;
    rooms = 300;
    suites = 30;
    cout << "The Grande Hotel has " << floors << " floors\n";
    cout << "with " << rooms << " rooms and " << suites;
    cout << " suites.\n";
    return 0;
}
```

If Statement

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

int main()
{
    int score1, score2, score3; // To hold three test scores
    double average;           // TO hold the average score

    // Get the three test scores.
    cout << "Enter 3 test scores and I will average them: ";
    cin >> score1 >> score2 >> score3;

    // Calculate and display the average score.
    average = (score1 + score2 + score3) / 3.0;
    cout << fixed << showpoint << setprecision(1);
    cout << "Your average is " << average << endl;

    // If the average is greater than 95, congratulate the user.
    if (average > 95)
    {
        cout << "Congratulations!\n";
        cout << "That's a high score.\n";
        cout << "You deserve a pat on the back!\n";
    }
    return 0;
}
```

If Statement

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

int main()
{
    int score1, score2, score3; // To hold three test scores
    double average;           // TO hold the average score

    cout << "Enter 3 test scores and I will average them: ";
    cin >> score1 >> score2 >> score3;

    average = (score1 + score2 + score3) / 3.0;
    cout << fixed << showpoint << setprecision(1);
    cout << "Your average is " << average << endl;

    if (average > 95)
    {
        cout << "Congratulations!\n";
        cout << "That's a high score.\n";
        cout << "You deserve a pat on the back!\n";
    }
    return 0;
}
```

While Loop

```
// This program demonstrates a simple while loop.
#include <iostream>
using namespace std;

int main()
{
    int number = 1;

    while (number <= 5)
    {
        cout << "Hello\n";
        number++;
    }
    cout << "That's all!\n";
    return 0;
}
```

For Loop

```
// This program demonstrates a user controlled for loop.
#include <iostream>
using namespace std;

int main()
{
    int num;          // Loop counter variable
    int maxValue;    // Maximum value to display

    // Get the maximum value to display.
    cout << "I will display a table of numbers and\n";
    cout << "their squares. How high should I go? ";
    cin >> maxValue;

    cout << "\nNumber      Number Squared\n";
    cout << "-----\n";

    for (num = 1; num <= maxValue; num++)
        cout << num << "\t\t" << (num * num) << endl;
    return 0;
}
```

Do - Case

```
// This program displays a menu and asks the user to make a
// selection. An if/else if statement determines which item
// the user has chosen.
#include <iostream>
#include <iomanip>
using namespace std;

int main()
{
    int choice;        // Menu choice
    int months;       // Number of months
    double charges;   // Monthly charges

    // Constants for membership rates
    const double ADULT = 40.0;
    const double SENIOR = 30.0;
    const double CHILD = 20.0;

    // Set the numeric output formatting.
    cout << fixed << showpoint << setprecision(2);

    do
    {
        // Display the menu and get a choice.
        cout << "\n\t\tHealth Club Membership Menu\n\n";
        cout << "1. Standard Adult Membership\n";
        cout << "2. Child Membership\n";
        cout << "3. Senior Citizen Membership\n";
        cout << "4. Quit the Program\n\n";
        cout << "Enter your choice: ";
        cin >> choice;

        // Validate the menu selection.
        while (choice < 1 || choice > 4)
        {
            cout << "Please enter 1, 2, 3, or 4: ";
            cin >> choice;
        }

        // Respond to the user's menu selection.
        switch (choice)
        {
            case 1:
                cout << "For how many months? ";
                cin >> months;
                charges = months * ADULT;
                cout << "The total charges are $"
                    << charges << endl;
                break;

            case 2:
                cout << "For how many months? ";
                cin >> months;
                charges = months * CHILD;
                cout << "The total charges are $"
                    << charges << endl;
                break;

            case 3:
                cout << "For how many months? ";
                cin >> months;
                charges = months * SENIOR;
                cout << "The total charges are $"
                    << charges << endl;
                break;

            case 4:
                cout << "Program ending.\n";
                break;
        }
    } while (choice != 4);

    return 0;
}
```


Interactive Program

```
// This program calculates the user's pay.
#include <iostream>
using namespace std;

int main()
{
    double hours, rate, pay;

    // Get the number of hours worked.
    cout << "How many hours did you work? ";
    cin >> hours;

    // Get the hourly pay rate.
    cout << "How much do you get paid per hour? ";
    cin >> rate;

    // Calculate the pay.
    pay = hours * rate;

    // Display the pay.
    cout << "You have earned $" << pay << endl;
    return 0;
}
```