# Chapter 3 Boolean expressions

A **Boolean expression** in C is a statement which gives a **truth value**.

To teach a computer to do decision making, it is necessary to use **Boolean expression** to help us.

In C, we usually use symbol to represent **logical operators**.

| Logical operator | C operator |
|---|---|
| not | **!** |
| and | && |
| or | \|\| |

Also, there are relational operators for comparison in C.

| C operator | Meaning |
|---|---|
| > | Greater than |
| < | Less than |
| >= | Greater than or equal to |
| <= | Less than or equal to |
| == | Equal |
| != | Not equal |

*Caution: Don't mix up the comparison operator == with the assignment operator =*

**Precedence:**

| | | |
|---|---|---|
| 1 | ( ) | Perform from left to right |
| 2 | ! | Perform from left to right |
| 3 | * , / , % | Perform from left to right |
| 4 | + , - | Perform from left to right |
| 5 | > , < , >= , <= | Perform from left to right |
| 6 | == , != | Perform from left to right |
| 7 | functions | Perform from inner to outer |

**Examples:**

1) 1>2 && 2>3
2) 2==3
3) 3!=1 || true
4) 'a' == 'c'
5) 'a' > '_'

**Questions:**

How does a computer compare **char**? (Hints: 'a' is 97.)
Can we compare **string**? (Yes, but we must use the function from **string.h**)

**End of Chapter**

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