

C-16 \Rightarrow operators in C - Part 4

Relational Operators:

- $\rightarrow <$ (less than)
- $\rightarrow >$ (greater than)
- $\rightarrow <=$ (less than or equal to)
- $\rightarrow >=$ (greater than or equal to)
- $\rightarrow ==$ (Equal to Equal to)
- $\rightarrow !=$ (Not Equal to).

* Relational operators compare two values or value of expression and return true or false gives 1 or 0's as output.

Examples:

$$\rightarrow 3 < 5 \rightarrow \text{true } (1)$$

$$\rightarrow 3 > 5 \rightarrow \text{false } (0)$$

$$\rightarrow 3 <= 3 \rightarrow \text{true } (1)$$

$$\begin{array}{l} \rightarrow a+b < b+c \\ 3+5 < 5+5 \\ 8 < 10 \end{array} \rightarrow \text{true } (1)$$

$$\rightarrow \text{Character} \leftarrow 'a' < 'b' = 1 \rightarrow \text{true } (1)$$
$$97 < 98$$

Note:

* We cannot compare strings using relational operators.

~~"Jenny" < "Lecture"~~ Cannot Compare.

~~Jenny 1000 Lecture 2000~~ Undefined behaviour.

* We can compare int, float character but can't compare strings.

Examples:

$$\rightarrow -14 > 3 \Rightarrow 0$$

$$\rightarrow 4.5 < 4 \Rightarrow 0$$

Example program (1)

```
#include <stdio.h>
#include <conio.h>
void main()
```

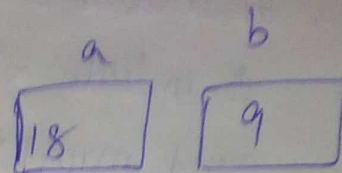
```
{
    int a=18, b=9;
    clrscr();
```

```
    printf("%d", a < b); → 0
```

```
    printf("%d", 'c' < 'b'); → 0
```

```
    printf("%d", a != b); → 1
    getch();
```

```
}
```



'c' < 'b'

99 < 98

Example program (2)

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
    int a=18, b=9, c, d, e=10;
```

```
    clrscr();
```

```
    c = b++;
```

```
    d = b;
```

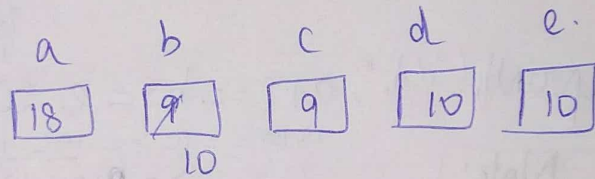
```
    printf("%d", a < b < c > d); → 0
```

```
    printf("%d", b == e); → 1
```

```
    printf("%d", c+1 > e); → 0
```

```
    printf("%d", a+c == b > e < c+d); → 0
```

```
}
```



(18 < 10 → false)

(10 == 10) true

(9+1 > 10) false
10 > 10

(18+9 == 10 > 10 < 9+10)
27 == 10 > 10 < 19
↓ ↓
(27 == 0) false
(27 == 1) false

Example Program (3)

```
#include <stdio.h>
#include <conio.h>
void main()
```

```
{
    int a = 18, b = 9, c, d, e = 10, f;
```

```
    clrscr();
```

```
    c = b++;
```

```
    d = b;
```

```
    f = a > b > d < c;
```

```
    printf("%d", f != 1); → 0
```

(1 != 1)
false

```
    printf("%d", a + c == b >= e < (c + d) != 1) → 1
```

Note:

$$18 + 10 = 28 >= 10 < 9 + 10 = 19 \Rightarrow 1$$

$$28 == 10 >= 10 < 19 != 1 \Rightarrow 28 == 10 >= 10 < 19 != 1 \Rightarrow 0 != 1 \Rightarrow 1$$

$$18 > 10 > 10 < 9$$



1

f = 1

* Avoid (==) operator when we use floating point values, because we don't get higher precision.

Ex: * f = 2.2, g = 2.22

f == g (2.2 = 2.22) false.

But almost same.

Note:

* '<' > '>'



* f = 2.00001, g = 2.000001

f == g (2.00001 == 2.000001) false

But almost same.