

Logical Operators

A byte size lesson in Java programming.

What is an operator?

- An operator is a symbol that performs operations on variables and values.
- There are many types of operators, including Arithmetic, Assignment, Logical etc.

Logical Operators

- Used to check whether an expression is `true` or `false`

Logical AND

&&

`expr1 && expr2`

true only if **both** `expr1` and `expr2` are true

Let's test your understanding!

- What will each of these expressions result in?

```
System.out.println((5 > 3) && (2 > 1))
```

```
System.out.println((5 > 6) && (2 > 1))
```

Logical Operators

- Other operators we can use include **OR** and **NOT**

Logical AND	Logical OR	Logical NOT
&&		!
expr1 && expr2	expr1 expr2	! expr1
true only if both expr1 and expr2 are true	true if either expr1 or expr2 are true	true if expr1 is false, and vice versa

Use of Logical Operators

- Logical operators are used frequently in programming.
- An example is when working with conditional statements (IF something Do something)

```
// coming soon  
if (isRainy && noUmbrella) {  
    System.out.println("run!");  
}
```


Let's test your understanding!

- What will each of these expressions result in?

```
System.out.println((12 > 10) && (3 == 3))
```

```
System.out.println((5 > 6) || (2 > 1))
```

```
System.out.println((1 > 4) && (2 > 1))
```

```
System.out.println(!(4 > 3))
```

Let's test your understanding!

- Which operator would we use in the below?

```
boolean findShelter = (isRainy  noUmbrella)
```

```
boolean shadeOfRed = (isLightRed  isDarkRed)
```

```
boolean like = ( dislike)
```