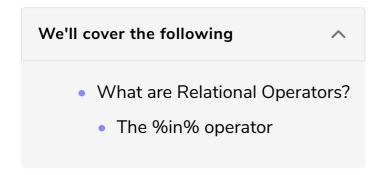
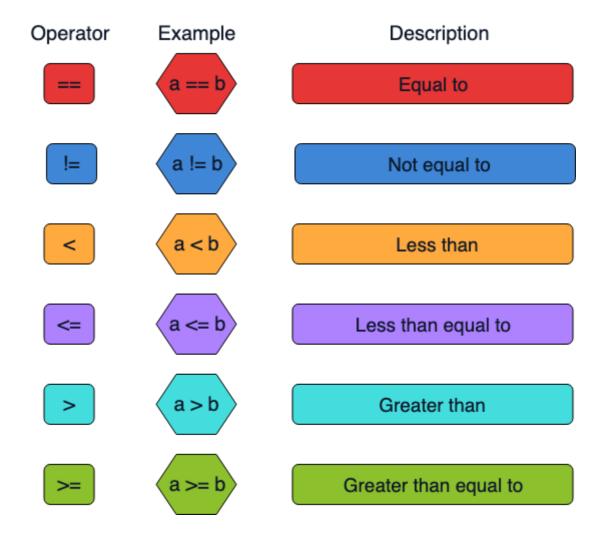
Relational Operators

In this lesson, we will learn the basic relational operations in R and how to use them.



What are Relational Operators?

Relational Operators are used for comparing objects. They return a boolean variable, i.e., TRUE or FALSE.



Let's have a look at the code:

```
# Equal to
number1 == number2

# Not equal to
number1 != number2

# Less than
number1 < number2

# Less than equal to
number1 <= number2

# Greater than
number1 > number2

# Greater than equal to
number1 >= number2
```

Relational operators on numbers

If you use a relational operator to compare vectors, R will do element-wise comparisons.

The output of performing relational operations on two vectors is a vector!

```
vector1 <- c(5, 10, 15)
vector2 <- c(3, 6, 9)

# Equal to
vector1 == vector2

# Not equal to
vector1!= vector2

# Less than
vector1 < vector2

# Less than equal to
vector1 <= vector2

# Greater than
vector1 > vector2

# Greater than equal to
vector1 > vector2
```





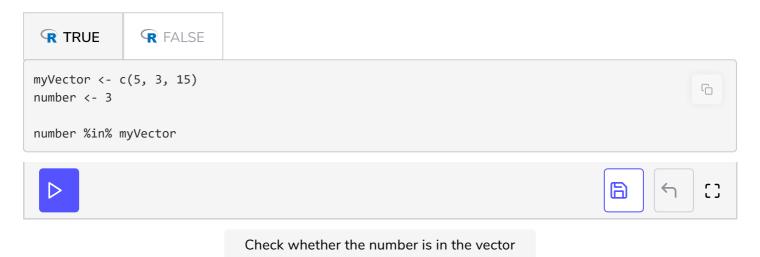


Relational operators on vectors

The %in% operator

The **%in%** operator is used only **on vectors** and it is the only operator that does not do normal element-wise execution.

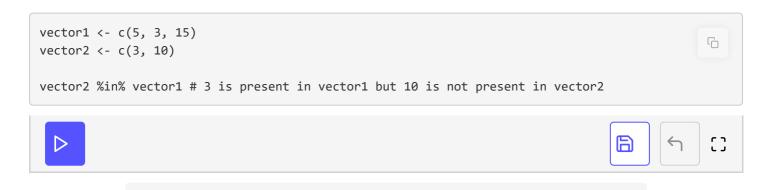
%in% checks whether the value(s) on the left side are present on the right side. This means %in% tests whether each value on the left is somewhere in the vector on the right:



When using relational operators to compare vectors, if the two vectors are of

If the vector on the left-hand side has multiple elements, each element is searched in the vector on the right-hand side. Individual TRUE or FALSE values are produced as a result.

unequal length, R tries to equalize them by replicating the smaller one.



Check whether elements of the second vector are present in the first vector.

We will be using these relational operators in more detail in the next chapter on Conditional Statements.

For now, we will be moving on to Logical Operators.