

# if...else Statements

Let's build upon our concepts of the original if statements with the else statement.

We'll cover the following



- What is an if...else statement?
- Nested if...else Statements

## What is an **if...else** statement? #

An **if** statement can be followed by an **optional else statement**, which executes when the conditional expression is **FALSE**.

Let's revisit our previous example. So now, we not only want to print "positive" when we encounter a positive number, but we also want to print "negative" when the number is **not positive**.

We have used the word **not positive** here to show that the **else** statement is executed whenever the original **conditional statement** is NOT satisfied.

Have a look at the modified illustration:

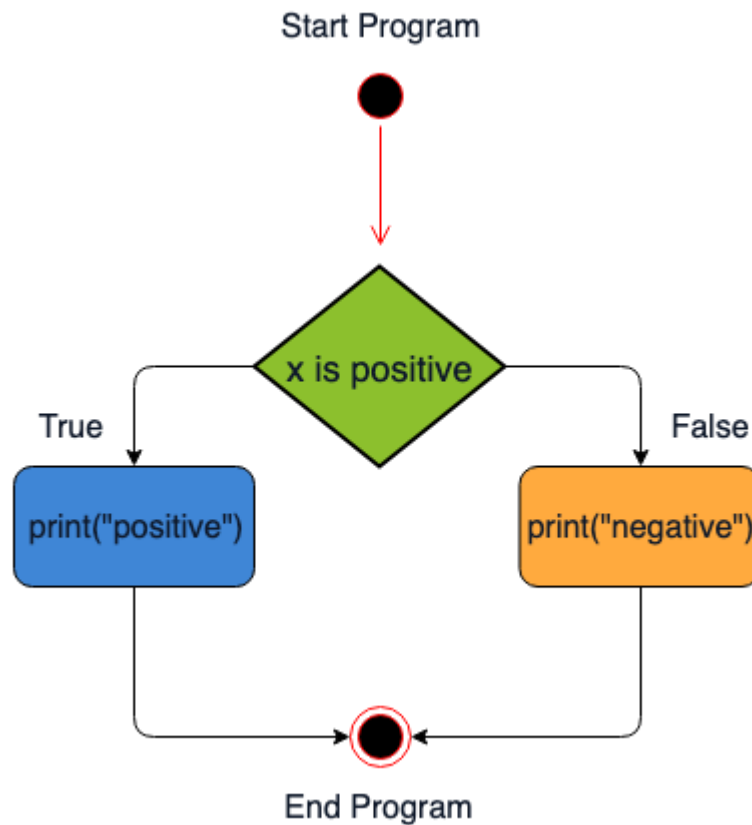


Diagram to show code flow with if-else statement

The above illustration can be mapped on to the following codes:

condition\_satisfied

condition\_unsatisfied

```
x <- 5
if(x > 0) # condition for checking positive numbers (all positive numbers are greater than 0)
{
  print("Positive number")
} else
{
  print("Negative number")
}
```

Conditional statement is satisfied.

Let's look at another example where the conditional statement checks whether the data in variable `testNumber` is present in `myVector`.

```
myVector <- c(1, 2, 3, 5)
testNumber <- 4

if(!testNumber %in% myVector)
{
```

```
print("Not Found!")
} else
{
    print("Found")
}
```



## Nested if...else Statements #

We can also nest one `if...else` statement into another `if...else` statement.

For example, if you are not older than or equal to 18 years, you cannot vote. And if you are 18, you cannot vote if you don't have a valid ID card. You can vote only if you are at least 18 years old and have a valid ID card. Such a scenario can be easily demonstrated using a nested `if...else` statement.

```
age <- 22
validID <- TRUE

if(age >= 18)
{
    if(validID)
    {
        cat("voting is allowed")
    } else
    {
        cat("voting not allowed")
    }
} else
{
    cat("voting not allowed")
}
```



Example of the nested if...else statement.

Let's test your understanding of using `if...else` statements in the next exercise.