while Loops

In this lesson, we will learn all about the while loop in R language.

We'll cover the following

- Syntax of a while loop
- if...else statement inside while loop

The simplest kind of loop in the R language is the `while` loop.

It is simply translated as: *"if the given condition is satisfied then execute the statements in the `while` block and if the condition is not satisfied break the loop (which means the block of code in the curly brackets `{ }` will not be executed).*

Syntax of a `while` loop

The syntax for `while` loop in R:

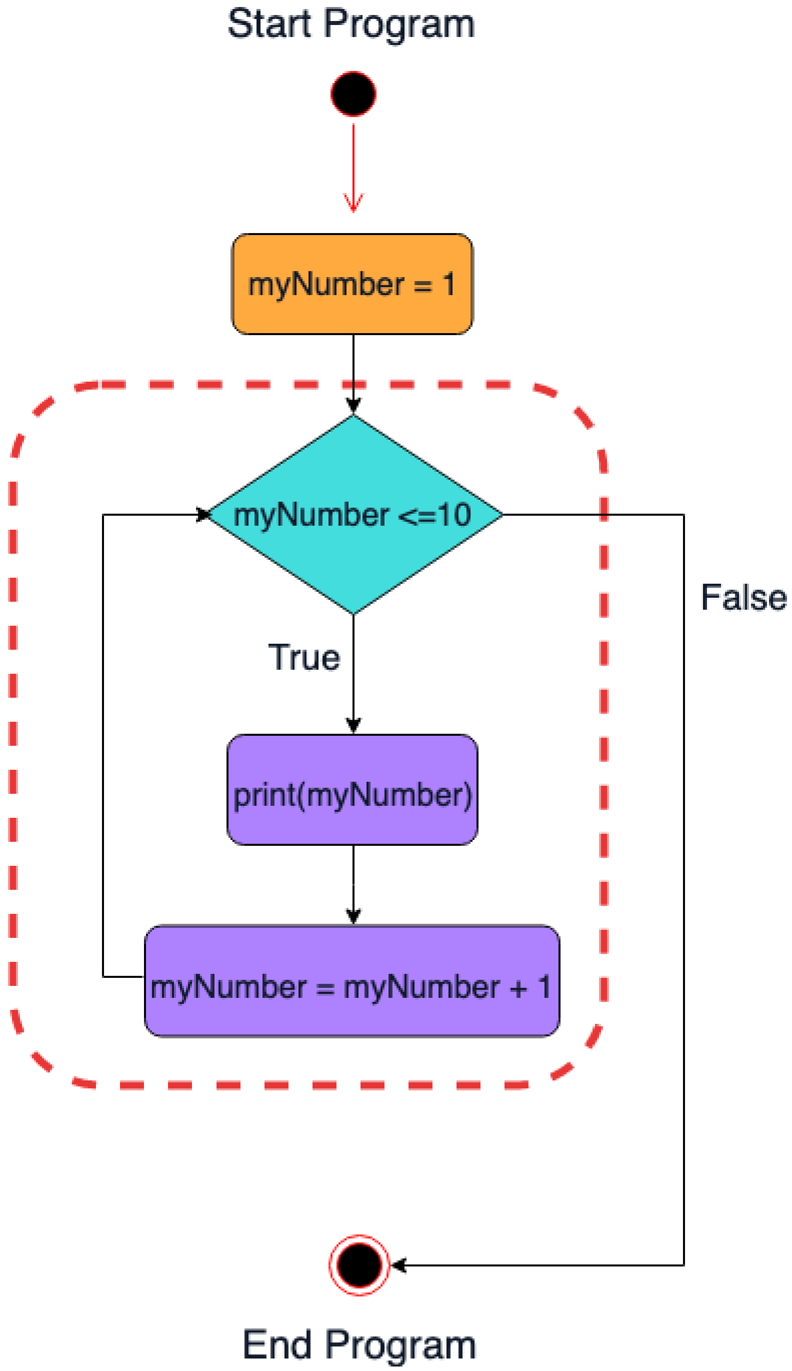
```
while(condition)
{
  statements
}
```

Let's revisit our example from the previous lesson using while loop.

```
myNumber <- 1
while (myNumber <= 10)
{
  print(myNumber)
  myNumber = myNumber + 1;
}
```

Printing numbers 1 to 10 using while loop.

In the above code, the condition `myNumber <= 10` tells the compiler how many times the statements inside the `{}` needs to be repeated. Here, each time the variable `myNumber` is increased by 1. Therefore, the entire loop will run 10 times, each time printing the new value of `myNumber`. Let's have a look at the flow of the program:

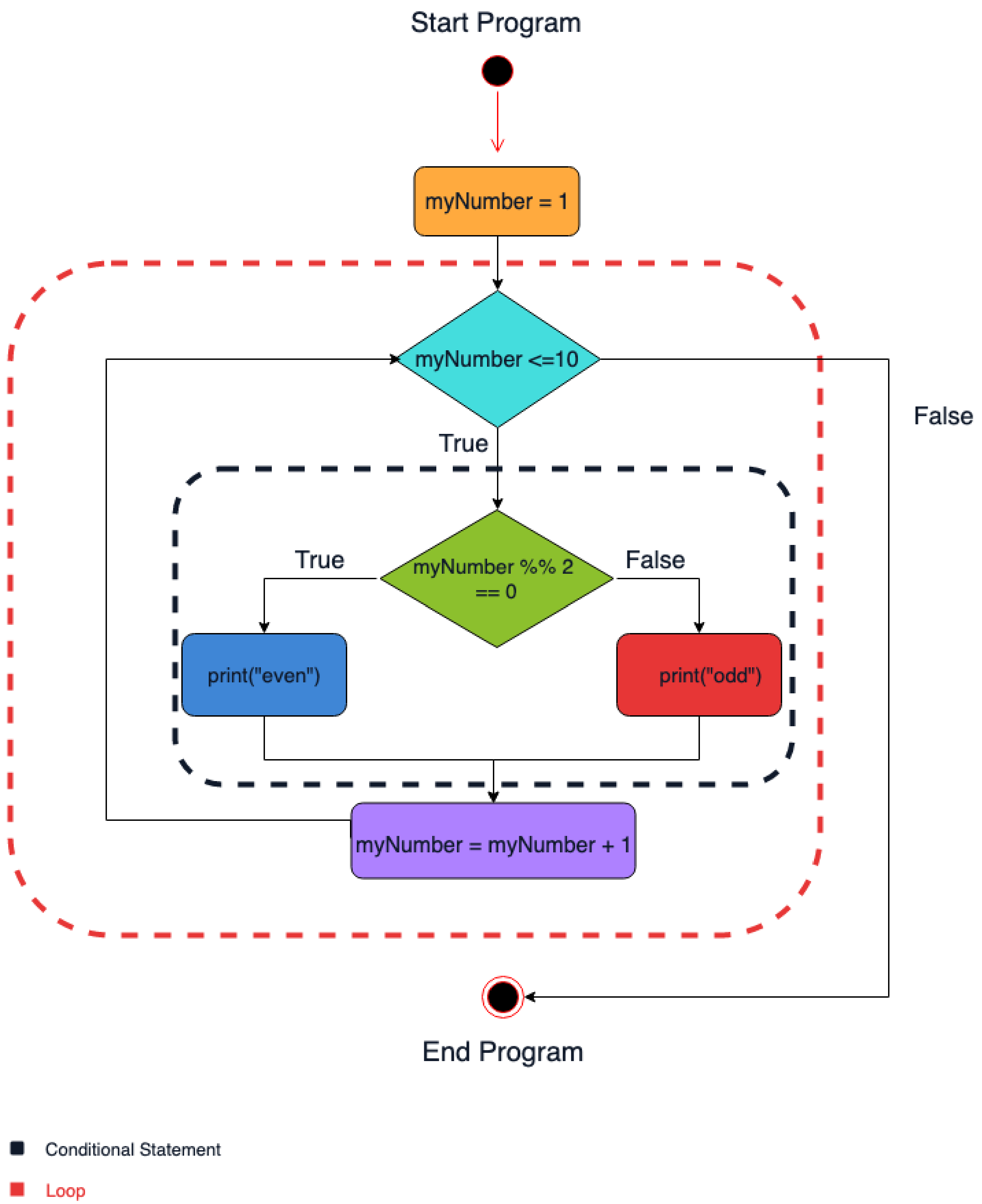


In a `while` loop, a block of statements is executed repeatedly until the condition provided to it evaluates to `FALSE`.

`if..else` statement inside `while` loop

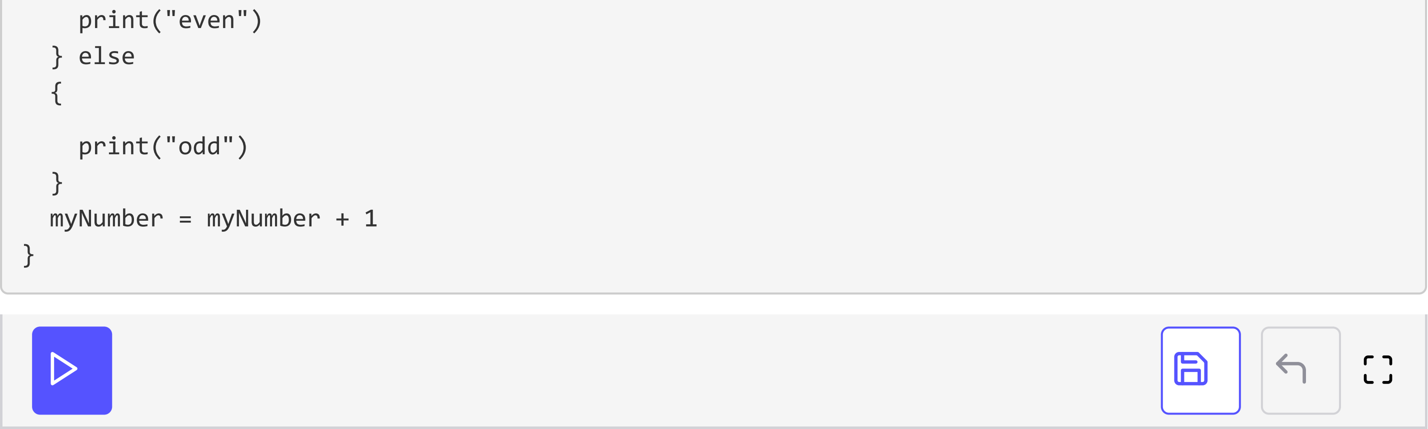
Suppose we want to modify our original example, but this time we want to print "even" for numbers that are even and print "odd" for odd numbers. We are still handling numbers from 1 to 10.

Let's illustrate our problem:



Mapping this to code is easy:

```
myNumber <- 1
while (myNumber <= 10)
{
  if(myNumber %% 2 == 0)
  {
```



```
    print("even")
  } else
  {
    print("odd")
  }
  myNumber = myNumber + 1
}
```

if..else statement inside while loop.

In the above code snippet, we have a conditional statement inside a loop. In each iteration of the loop, the condition in the `if` statement evaluates to either true or false. Accordingly, either “even” or “odd” is displayed on the screen.

In the next lesson, we have a small exercise for you so that you can try implementing `while` loops.