Solution Review: while Loops

In this review, we provide a detailed analysis of the solution to this problem.

We'll cover the following

Solution: Using `while` Loop

```
testVariable <- 1
while (testVariable <= 20) { # Ccheck whether testVariable is less than or equal to 20
  if(testVariable %% 3 == 0 && testVariable %% 5 == 0)
  {
    cat(testVariable, "foo bar\n")
  } else
  {
    if(testVariable %% 3 == 0)
    {
      cat(testVariable, "foo\n")
    }
    if(testVariable %% 5 == 0)
    {
      cat(testVariable, "bar\n")
    }
  }
  testVariable = testVariable + 1 # increment testVariable to move on to the next number to check
}
```

Explanation

We wrote a program to check whether a number is a multiple of 3, 5, or both in Exercise 8. In this exercise, we are modifying the question to check this condition for all numbers from 1 to 20.

One simple approach is to copy paste the **condition block (line number 4 to 17 in the above code)** 20 times. However, this method is redundant and lengthy.

We can write a `while` loop that runs 20 times and for each iteration checks the

condition. For this, we make a variable `testVariable` whose value is 1. Then, in

each iteration, we check whether `testVariable` is less than or equal to 20, and also increment at the end of each iteration.

Let's move onto `for` loops in the next lesson.