Exercise 16

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1. Read the case and write how you might meet the expectations (no more than one page) in Quarto.
2. In the same Quarto document, write a function for simulating data that uses conditional statements and a for loop. Call it and print the output.
3. Render the Quarto document into Word and upload to Canvas.

**Five points total, one point each for:**

* **Write how you might meet the expectations of the case.**
* **Write a function for simulating data.**
* **Including conditional statements in your function.**
* **Including a for loop in your function.**
* **Submitting a rendered Word document.**

## Meeting Expectations

We will need an accurate supervised model to identify customers that are likely to churn, one or more unsupervised models to segment customers, and a series of natural language processing techniques to look at sentiment and identify topics of customer discussion.

## Write a Function

sim\_data <- function(nobs = 500) {  
 # Create an empty vector for data.  
 data <- vector(mode = "double", length = nobs)  
 for (n in seq\_along(data)) {  
 if (n < nobs/2) {  
 data[n] <- runif(n = 1, min = 10, max = 50)  
 } else {  
 data[n] <- runif(n = 1, min = 50, max = 100)  
 }  
 }  
  
 # Return simulated data.  
 return(data)  
}  
  
# Call sim\_data.  
sim\_data(nobs = 10)

[1] 45.15569 46.68301 29.90418 10.26020 60.13145 93.34112 97.70416 89.06493  
 [9] 80.60322 62.84539