

Coding :

```
1 myMode <- function(data) {  
2   freqTable <- table(data)  
3   maxFreq <- max(freqTable) # Find the maximum frequency in the table  
4   modes <- as.numeric(names(freqTable[freqTable == maxFreq])) # Identify the unique values with the maximum frequency  
5   if (length(modes) == 1 && length(unique(data)) == 1) { # If there's only one unique value and it's the same as the mode  
6     modes <- modes[!is.na(modes)]  
7   } else if (length(modes) == length(data) || length(modes) == length(unique(data))) { # If all values occur equally frequently, there is no mode  
8     modes <- "No mode"  
9   } else { # If there are multiple modes, return all of them  
10    modes <- modes[!is.na(modes)]  
11  }  
12  return(modes)  
13 }  
14  
15 sampleData1 <- c(1, 2, 3, 4, 5)  
16 sampleData2 <- c(3, 3, 3, 3)  
17 sampleData3 <- c(1, 2, 2, 3, 4, 4, 5)  
18 sampleData4 <- c(1, 1, 2, 2, 3, 3, 4, 4, 5)  
19 sampleData5 <- c(1, 1, 2, 2, 3, 3, 4, 4, 5, 5)  
20  
21 result <- myMode(sampleData1)  
22 cat("The mode of sample1 was ", result, "\n")  
23  
24 result <- myMode(sampleData2)  
25 cat("The mode of sample2 was ", result, "\n")  
26  
27 result <- myMode(sampleData3)  
28 cat("The mode of sample3 was ", result, "\n")  
29  
30 result <- myMode(sampleData4)  
31 cat("The mode of sample4 was ", result, "\n")  
32  
33 result <- myMode(sampleData5)  
34 cat("The mode of sample5 was ", result, "\n")  
35 }
```

Result :

```
> result <- myMode(sampleData1)  
> cat("The mode of sample1 was ", result, "\n")  
The mode of sample1 was  No mode  
>  
> result <- myMode(sampleData2)  
> cat("The mode of sample2 was ", result, "\n")  
The mode of sample2 was  3  
>  
> result <- myMode(sampleData3)  
> cat("The mode of sample3 was ", result, "\n")  
The mode of sample3 was  2 4  
>  
> result <- myMode(sampleData4)  
> cat("The mode of sample4 was ", result, "\n")  
The mode of sample4 was  1 2 3 4  
>  
> result <- myMode(sampleData5)  
> cat("The mode of sample5 was ", result, "\n")  
The mode of sample5 was  No mode
```

Conclusion :

My function “myMode” creates a frequency table from the input data, use the frequency table to find the max frequency, and then find the value with the maximum frequency. Lastly it returns the value out from the function.