1. Prime or not a prime

> num = as.integer(readline(prompt="Enter a number: "))
Enter a number: 57
> flag = 0
> # prime numbers are greater than 1
> if(num > 1) {
+ # check for factors
+ flag = 1
+ for(i in 2:(num-1)) {
+ if ((num %% i) == 0) {
+ flag = 0
+ break
+ }
+ }

> if(num == 2) flag = 1
> if(flag == 1) {
+ print(paste(num, "is a prime number"))
+ else {
+ print(paste(num, "is not a prime number"))
+ }

[1] "57 is not a prime number"

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Figure 67: checking a number is prime or not

2. Replace

```
> x <- c("a very nice character string")
> 
> str_replace(x, "c", "ab")
[1] "a very niabe character string"
> 
> str_replace_all(x, "c", "ab")
[1] "a very niabe abharaabter string"
> |
Figure 25: replacing characters in a string using str_replace() and str_replace_all()
```

3. Poisson Regression

Poisson Regression

Poisson Regression involves regression models in which the response variable is in the form of counts and not fractional numbers. For example, the count of number of births or number of wins in a football match series. Also the values of the response variables follow a Poisson distribution.

The general mathematical equation for Poisson regression is

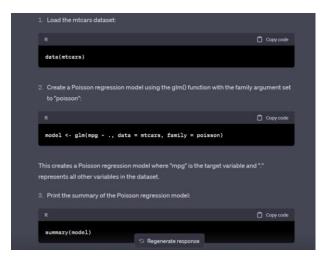
 $\log(\mathbf{y}) = \mathbf{a} + \mathbf{b}_1 x_1 + b_2 x_2 +b_n x_n$ Following is the description of the parameters used

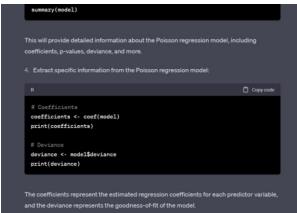
- y is the response variable
- a and b are the numeric coefficients
- \bullet x is the predictor variable

 $Syntax: \;\; glm \, (\, formula \, , data \, , family \,)$

Following is the description of the parameters used in above functions

- \bullet formula is the symbol presenting the relationship between the variables
- \bullet data is the data set giving the values of these variables
- family is R object to specify the details of the model. It's value is Poisson for Poisson Regression





4. sin(x)

