Set 19

1. **No of words in a string**

```
count_words <- function(string) {
  words <- strsplit(string, "\\s+")[[1]]
  return(length(words))
}
# Example usage:
input_string <- "This is a sample string"
word_count <- count_words(input_string)
cat("Number of words:", word_count)
```

2. **Fibonacci Series**

```
fibonacci <- function(n) {
  sequence <- c(0, 1)  # Initialize the sequence with the first two numbers
  if (n == 1) {
    return(sequence[1])
  } else if (n == 2) {
    return(sequence)
  } else {
    for (i in 3:n) {
      next_number <- sequence[i-1] + sequence[i-2]  # Calculate the next number in the sequence
      sequence <- c(sequence, next_number)  # Append the next number to the sequence
    }
    return(sequence)
  }
}

# Generate the Fibonacci series of the first 15 numbers
n <- 15
fib_series <- fibonacci(n)
```

```
# Print the Fibonacci series
cat("Fibonacci series of the first", n, "numbers:")
print(fib_series)
```

3. K means Clustering

```
data("iris")
head(iris)
x=iris[,3:4]
head(x)
model=kmeans(x,3)
library(cluster)
clusplot(x,model$cluster)
clusplot(x,model$cluster,color=T,shade=T)
```

4. Binomial regression on mtcars Dataset

```
# Load the mtcars dataset
data(mtcars)
# Fit the Poisson regression model
model <- glm(mpg ~ ., data = mtcars, family = poisson)
# Print the model summary
summary(model)
```