Step 1: Loading in the Data

```
# Packages used in tutorials
library(MASS)      # boxcox
library(car)       # qqPlot
```

```
## Loading required package: carData
```

```
library(randtests) # runs.test
```

```
## Warning: package 'randtests' was built under R version 4.3.3
```

```
# library(forecast) # OPTIONAL if you want auto.arima, not required

bike <- read.csv("trips_per_day.csv")
bike$trip_date <- as.Date(bike$trip_date)

str(bike)
```

```
## 'data.frame':    2969 obs. of  2 variables:
##  $ trip_date: Date, format: "2016-01-10" "2016-01-11" ...
##  $ n_trips  : int  2273 3623 2535 2966 2970 2636 4122 3104 1642 4834 ...
```

```
head(bike)
```

```
##    trip_date n_trips
## 1 2016-01-10    2273
## 2 2016-01-11    3623
## 3 2016-01-12    2535
## 4 2016-02-10    2966
## 5 2016-02-11    2970
## 6 2016-02-12    2636
```

```
range(bike$trip_date)
```

```
## [1] "2016-01-10" "2024-09-30"
```

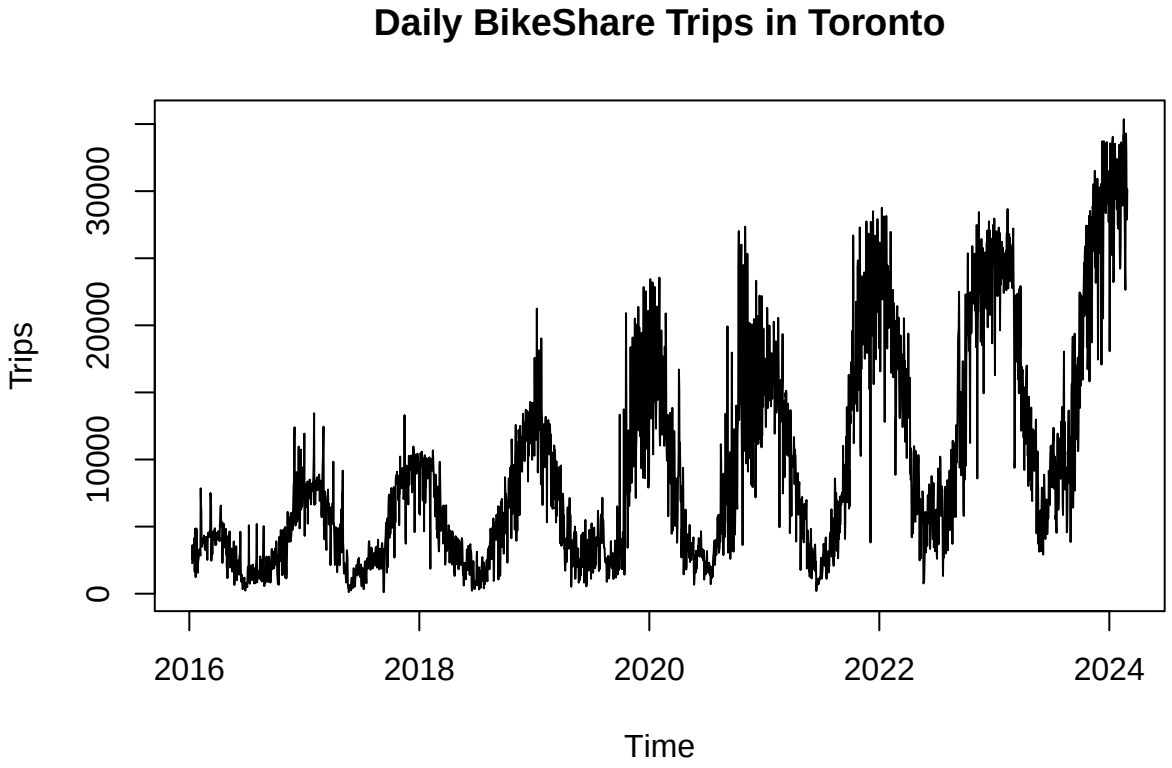
Initial Plotting for Time Series

```
# Sort just in case
bike <- bike[order(bike$trip_date), ]

# Extract response as a vector
y <- bike$n_trips

# Daily frequency with yearly seasonality (approx 365)
bike_ts <- ts(
  y,
  start = c(as.numeric(format(min(bike$trip_date), "%Y")),
            as.numeric(format(min(bike$trip_date), "%j"))),
  frequency = 365
)

plot(bike_ts, main = "Daily BikeShare Trips in Toronto", ylab = "Trips")
```


Daily BikeShare Trips in Toronto
Trips
0
10000
20000
30000
2016
2018
2020
2022
2024
Time