

# Ggplot2 tutorial - Command lines Part 1

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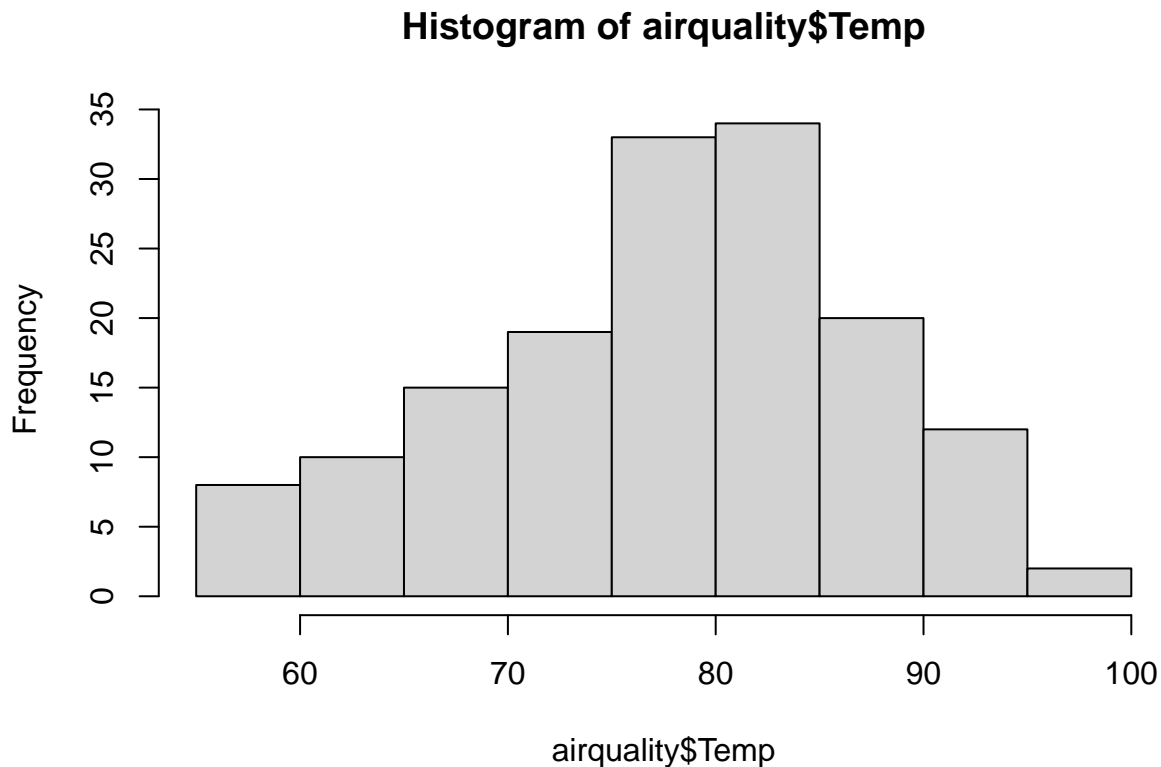
Load R packages

```
library(ggplot2)
library(Lock5Data)
```

## Part 1 - Basic Plotting in ggplot2

### Histograms

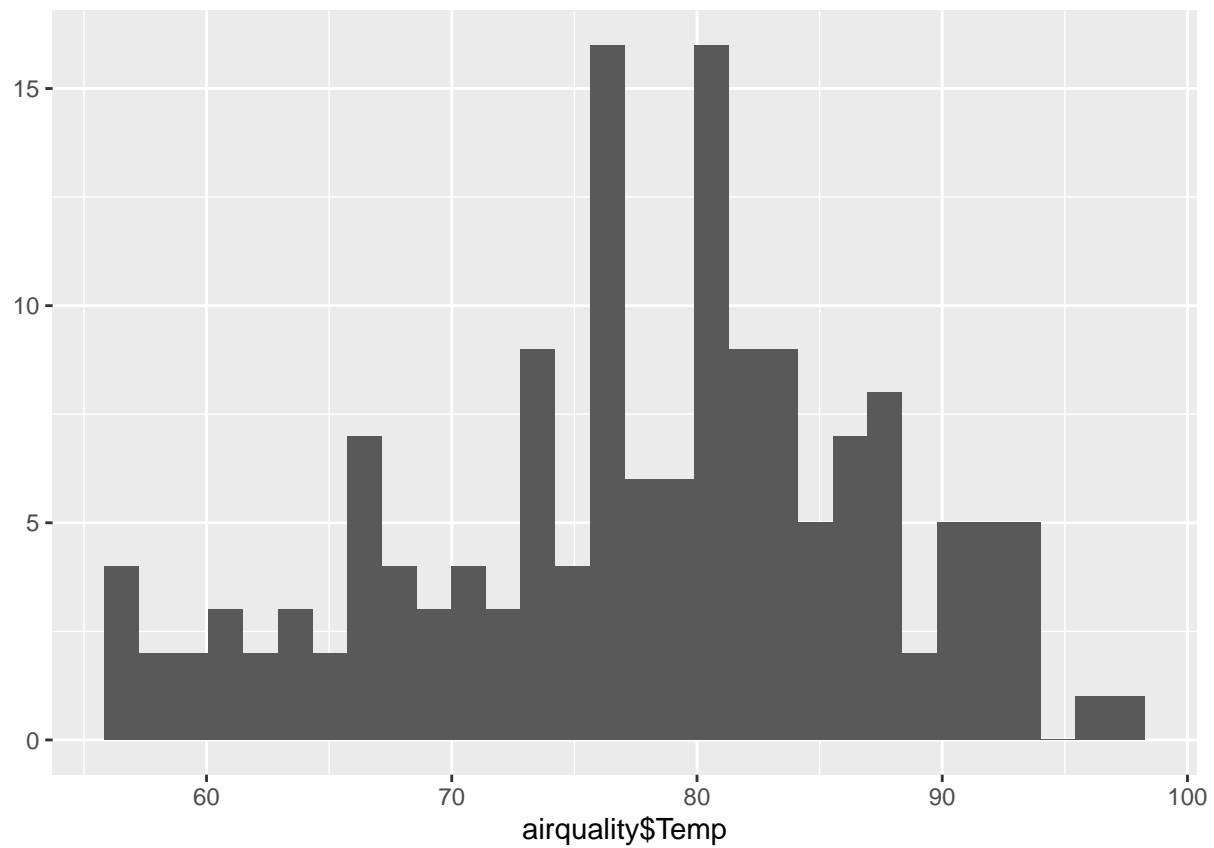
```
hist(airquality$Temp)
```



```
qplot(airquality$Temp)
```

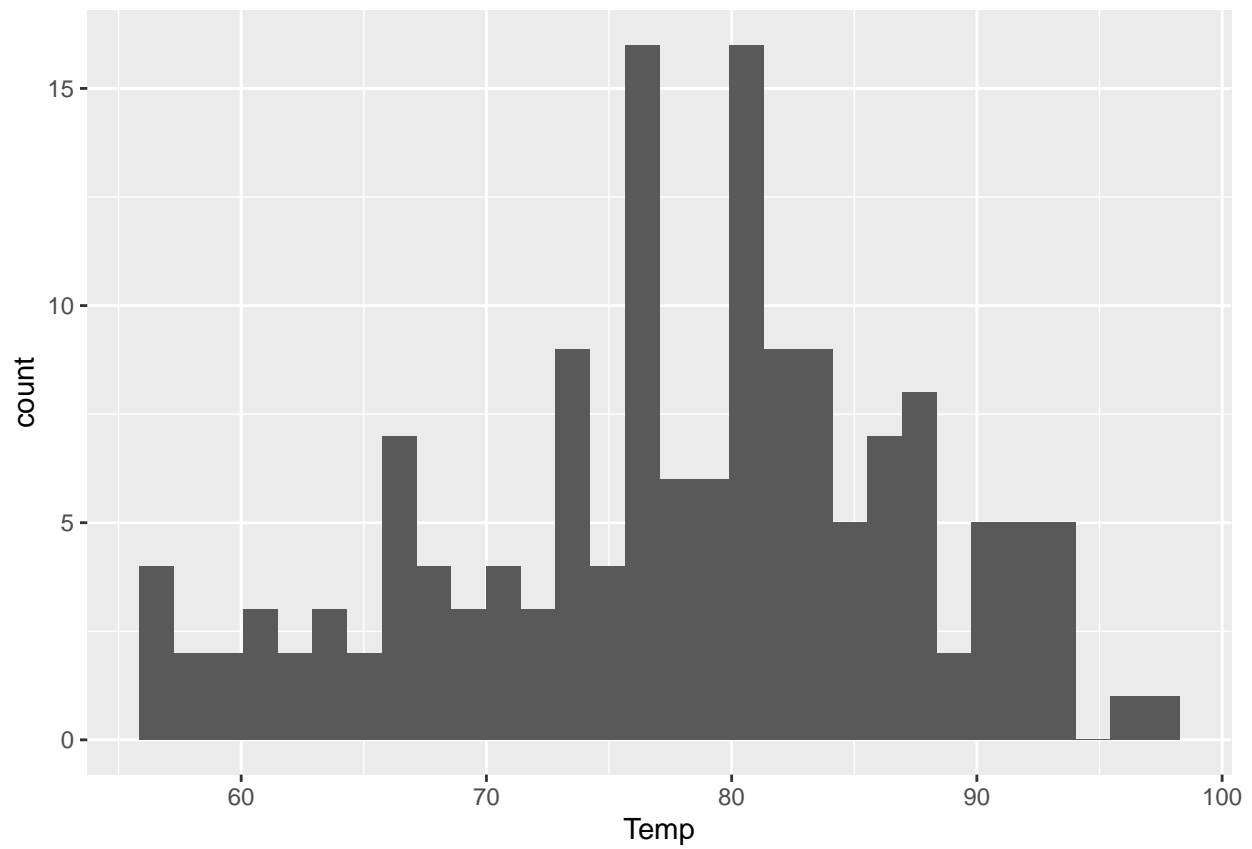
```
## Warning: `qplot()` was deprecated in ggplot2 3.4.0.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was
## generated.
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



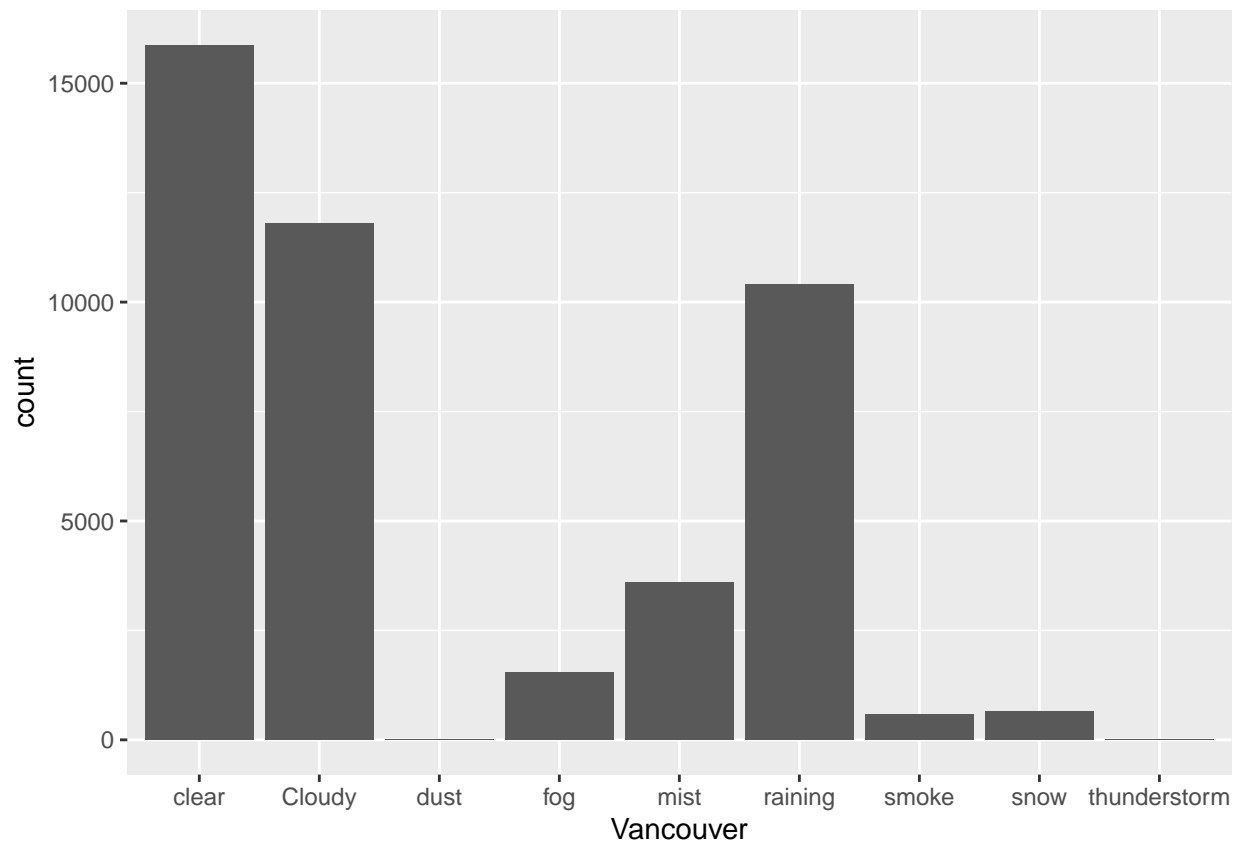
```
ggplot(airquality, aes(x=Temp)) + geom_histogram()
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



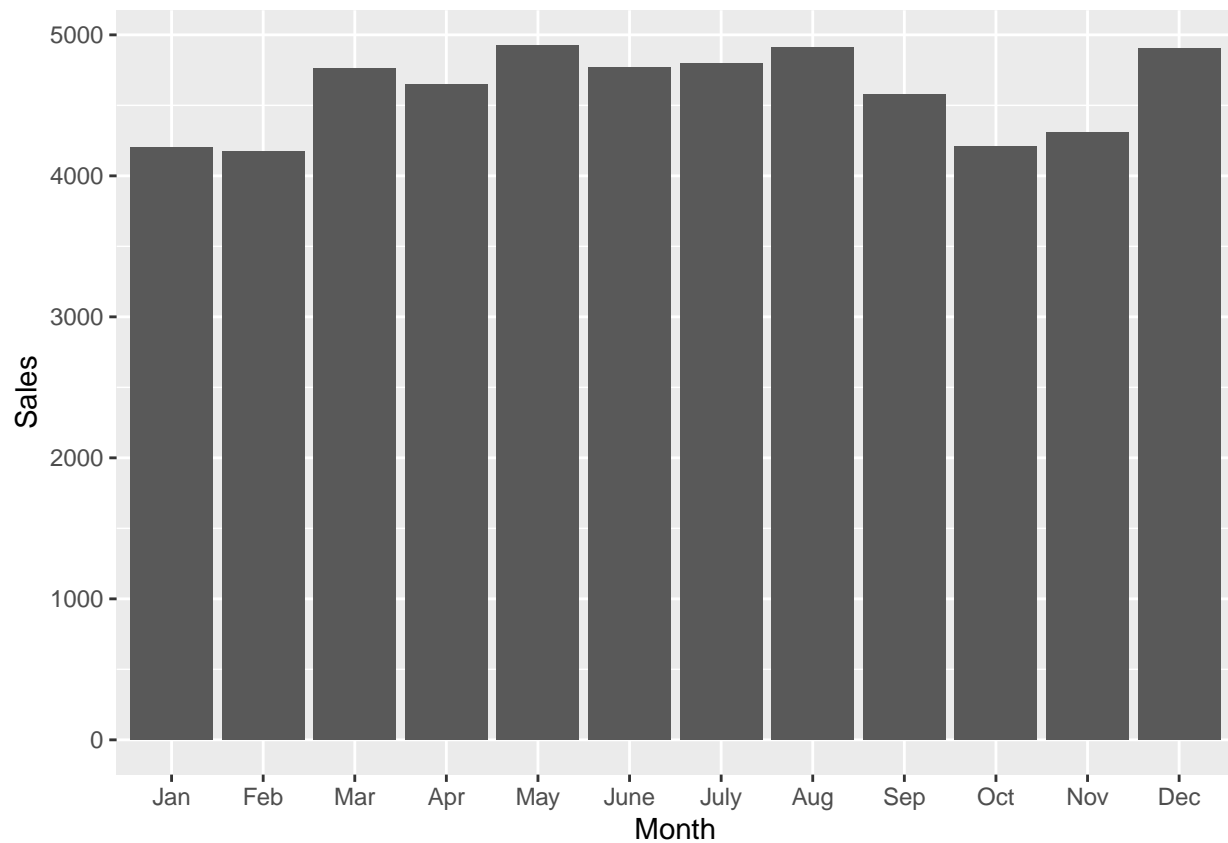
## Bar plots

```
df_desc <- read.csv("../data/historical-hourly-weather-data/weather_description.csv")  
ggplot(df_desc, aes(x=Vancouver)) + geom_bar()
```



```
df <- na.omit(RetailSales)
months_of_the_year <- c("Jan", "Feb", "Mar", "Apr", "May", "June",
                        "July", "Aug", "Sep", "Oct", "Nov", "Dec")

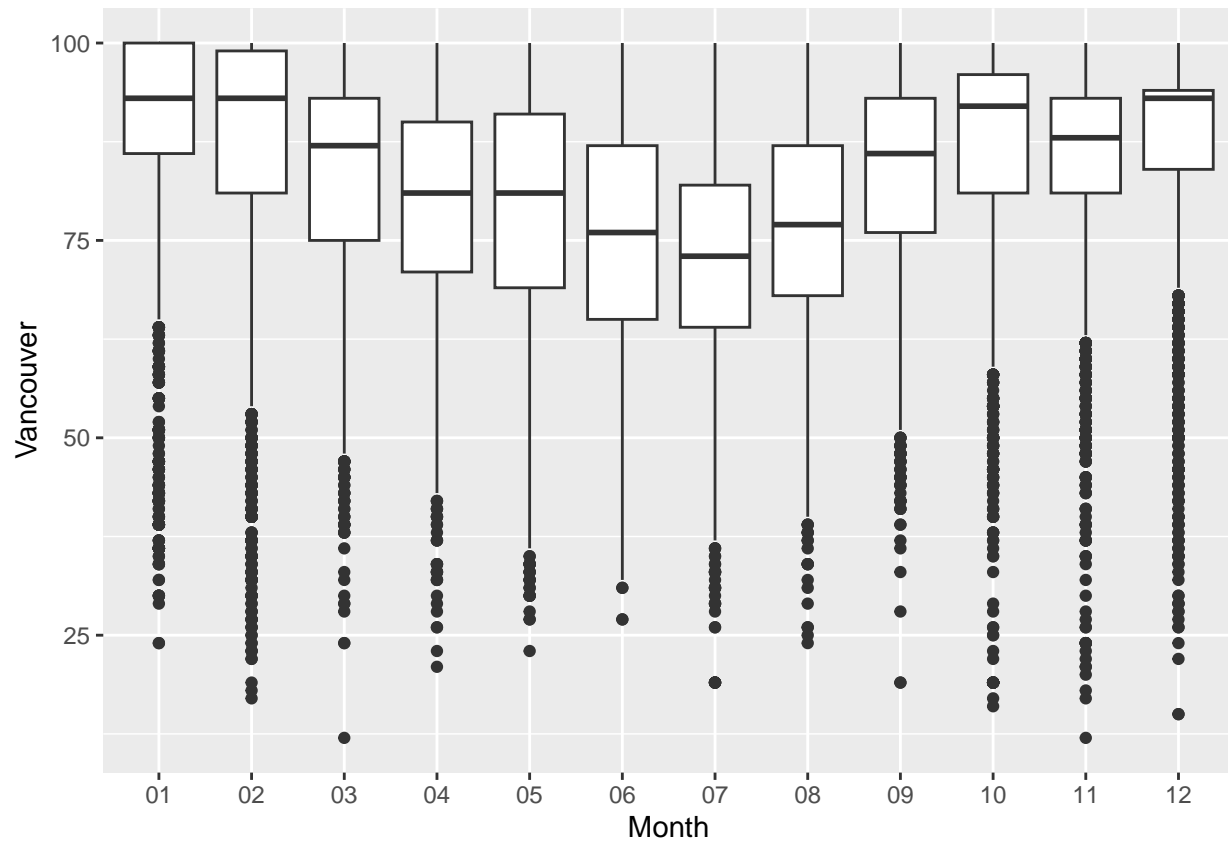
ggplot(df) +
  geom_bar(aes(x=factor(Month, months_of_the_year), y=Sales), stat="identity") +
  xlab("Month")
```



## Box plots

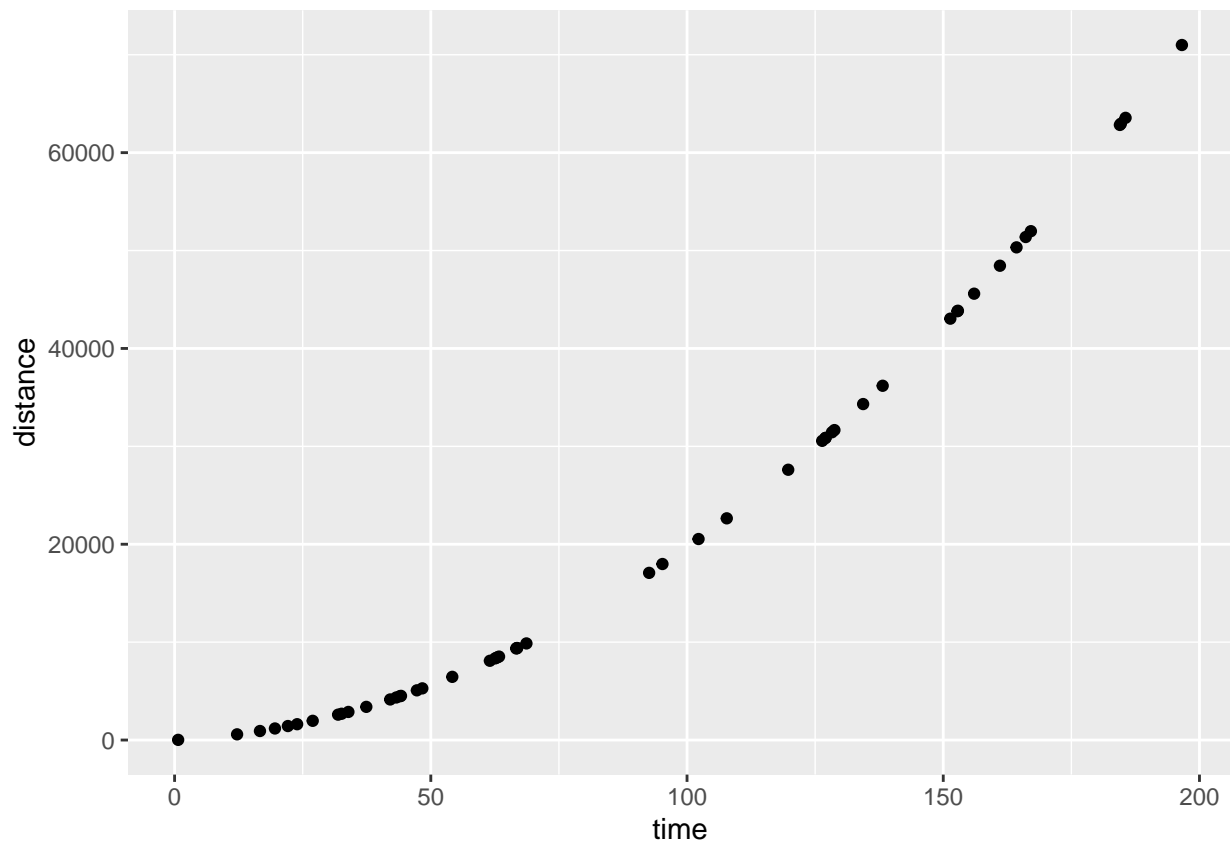
```
df_hum <- read.csv("../data/historical-hourly-weather-data/humidity.csv")
df_hum$datetime <- as.character(df_hum$datetime)
df_hum$Month <- substr(df_hum$datetime, 6, 7)
ggplot(df_hum, aes(x=Month, y=Vancouver)) +
  geom_boxplot()
```

```
## Warning: Removed 1826 rows containing non-finite values (`stat_boxplot()`).
```

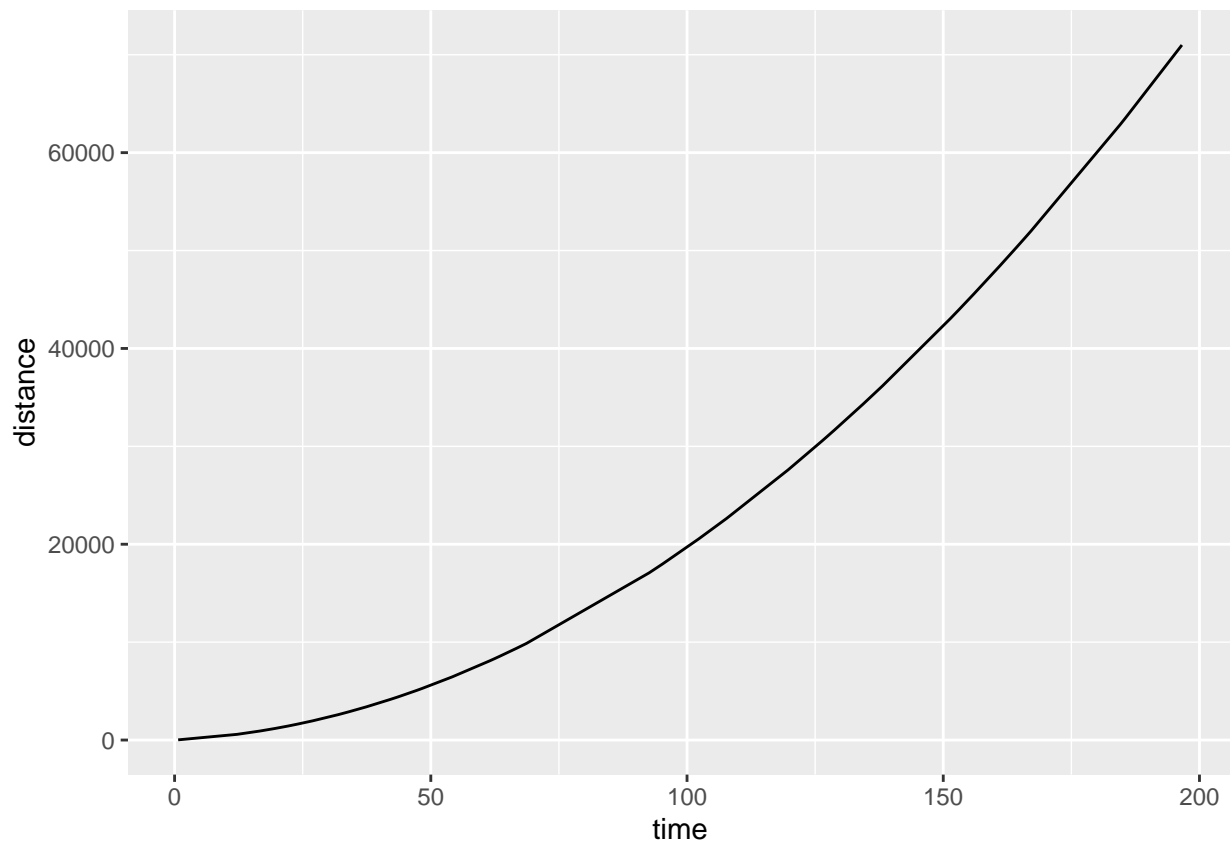


## Scatter plots and line plots

```
a = 3.4
v0 = 27
time <- runif(50, min=0, max=200)
distance <- sapply(time, function(x) v0 * x + 0.5 * a * x^2)
df <- data.frame(time,distance)
ggplot(df, aes(x=time, y=distance)) + geom_point()
```



```
ggplot(df, aes(x=time, y=distance)) + geom_line()
```



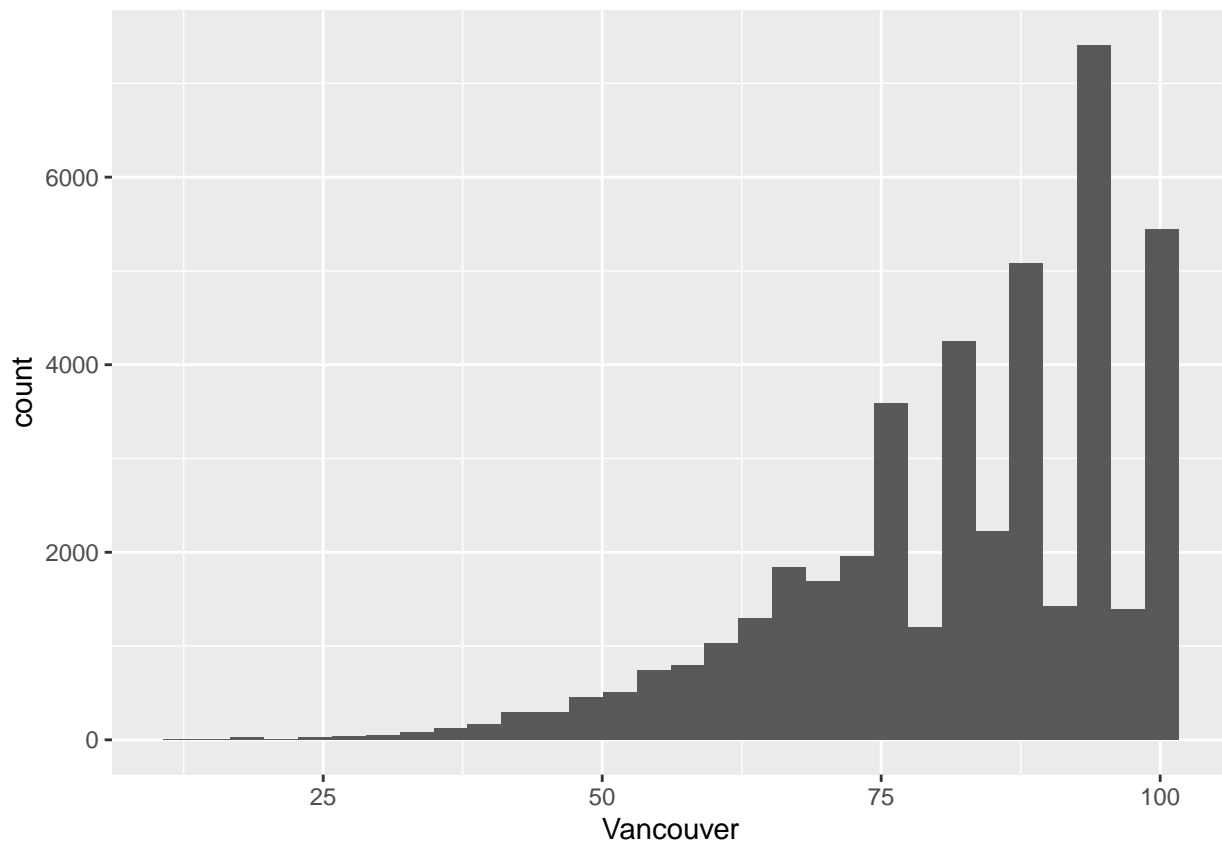
## Changing histogram defaults and adding aesthetics

```
df_hum <- read.csv("../data/historical-hourly-weather-data/humidity.csv")
ggplot(df_hum, aes(x=Vancouver)) + geom_histogram()
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

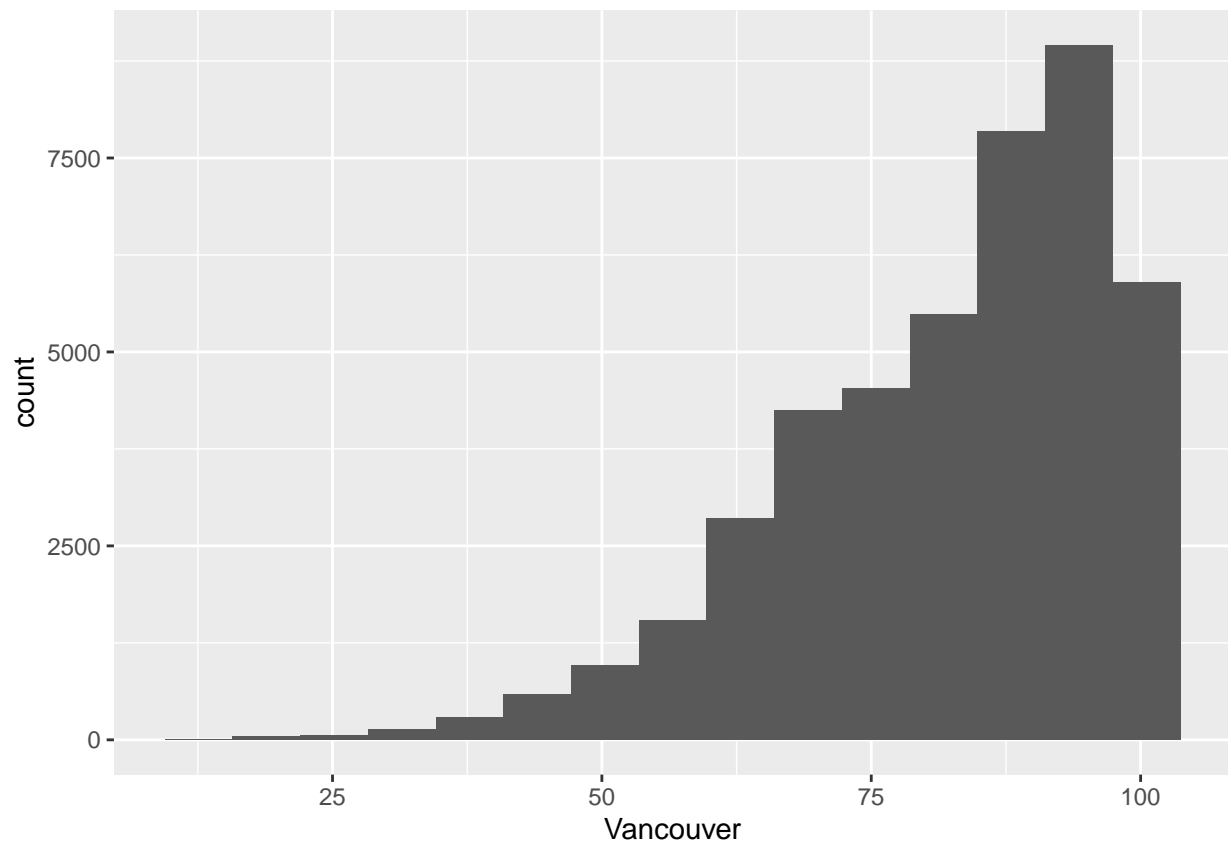
```
## Warning: Removed 1826 rows containing non-finite values (`stat_bin()`).
```





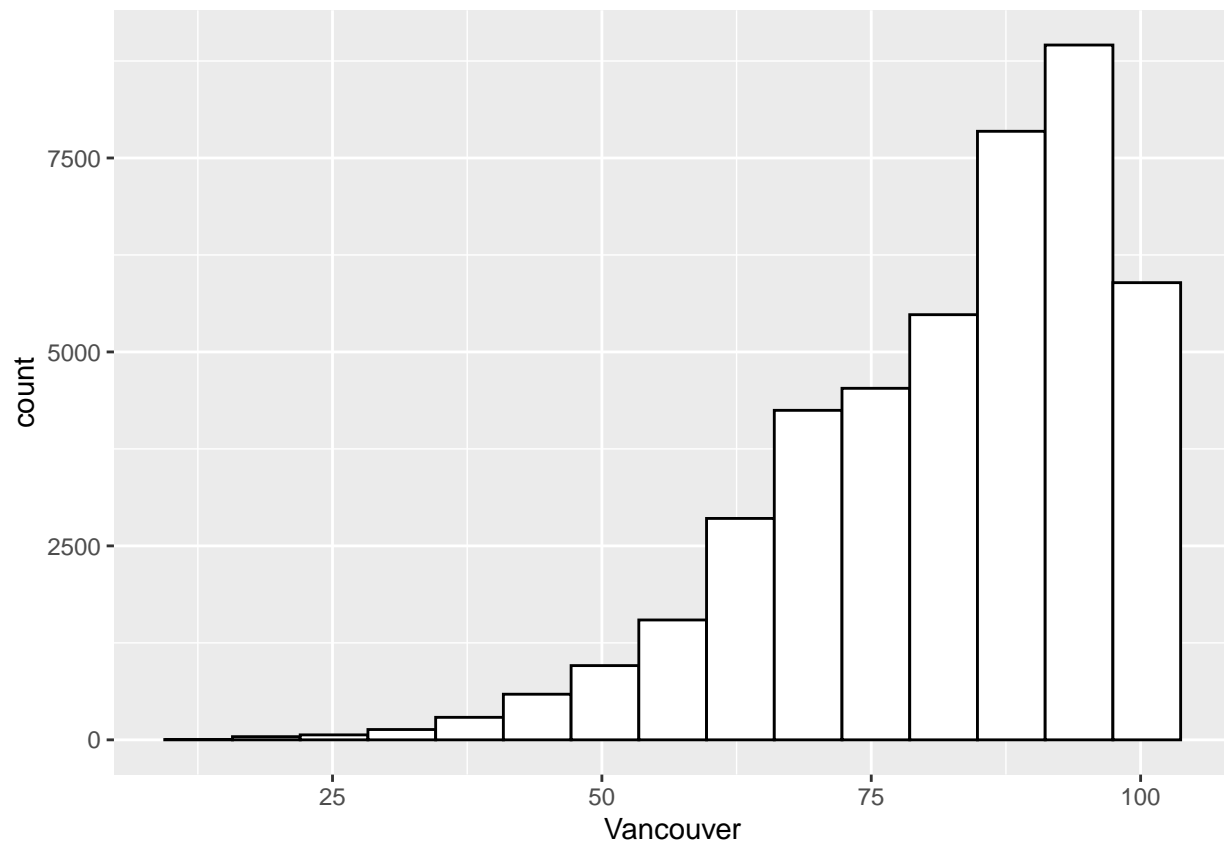
```
ggplot(df_hum, aes(x=Vancouver)) + geom_histogram(bins=15)
```

```
## Warning: Removed 1826 rows containing non-finite values (`stat_bin()`).
```



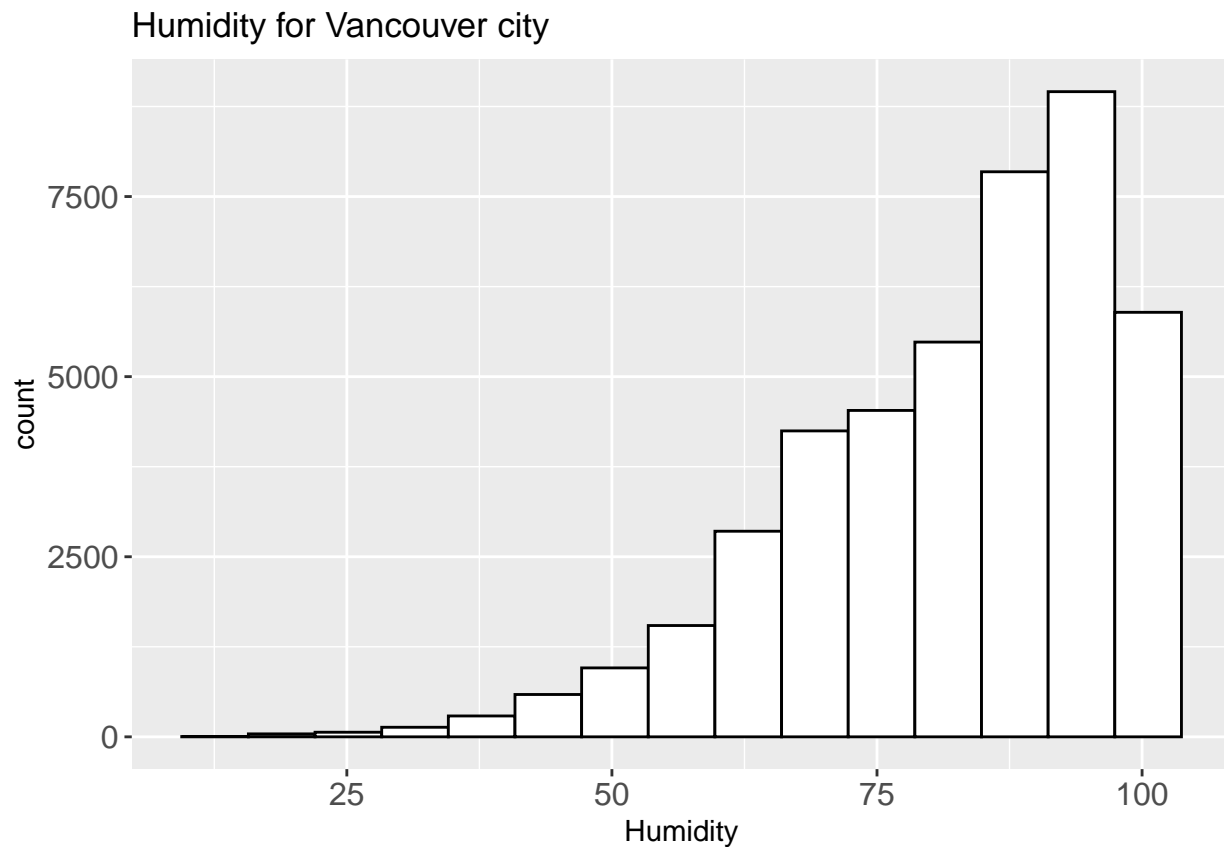
```
ggplot(df_hum, aes(x=Vancouver)) + geom_histogram(bins=15, fill="white", color=1)
```

```
## Warning: Removed 1826 rows containing non-finite values (`stat_bin()`).
```



```
ggplot(df_hum, aes(x=Vancouver)) +  
  geom_histogram(bins=15, fill="white", color=1) +  
  ggtitle("Humidity for Vancouver city") +  
  xlab("Humidity") +  
  theme(axis.text.x=element_text(size=12), axis.text.y=element_text(size=12))
```

```
## Warning: Removed 1826 rows containing non-finite values (`stat_bin()`).
```



### Changing boxplot defaults and adding aesthetics

```
df_hum <- read.csv("../data/historical-hourly-weather-data/humidity.csv")
df_hum$datetime <- as.character(df_hum$datetime)
df_hum$Month <- substr(df_hum$datetime, 6, 7)
ggplot(df_hum, aes(x=Month, y=Vancouver)) +
  geom_boxplot(color="gray20", fill="cadetblue2") +
  ylab("Humidity") +
  theme(axis.text.x=element_text(size=15),
        axis.text.y=element_text(size=15),
        axis.title.x=element_text(size=15, color="gray20"),
        axis.title.y=element_text(size=15, color="gray20"))
```

```
## Warning: Removed 1826 rows containing non-finite values (`stat_boxplot()`).
```

