Ggplot2 tutorial - Command lines Part 1

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Load R packages

```
library(tidyverse)
```

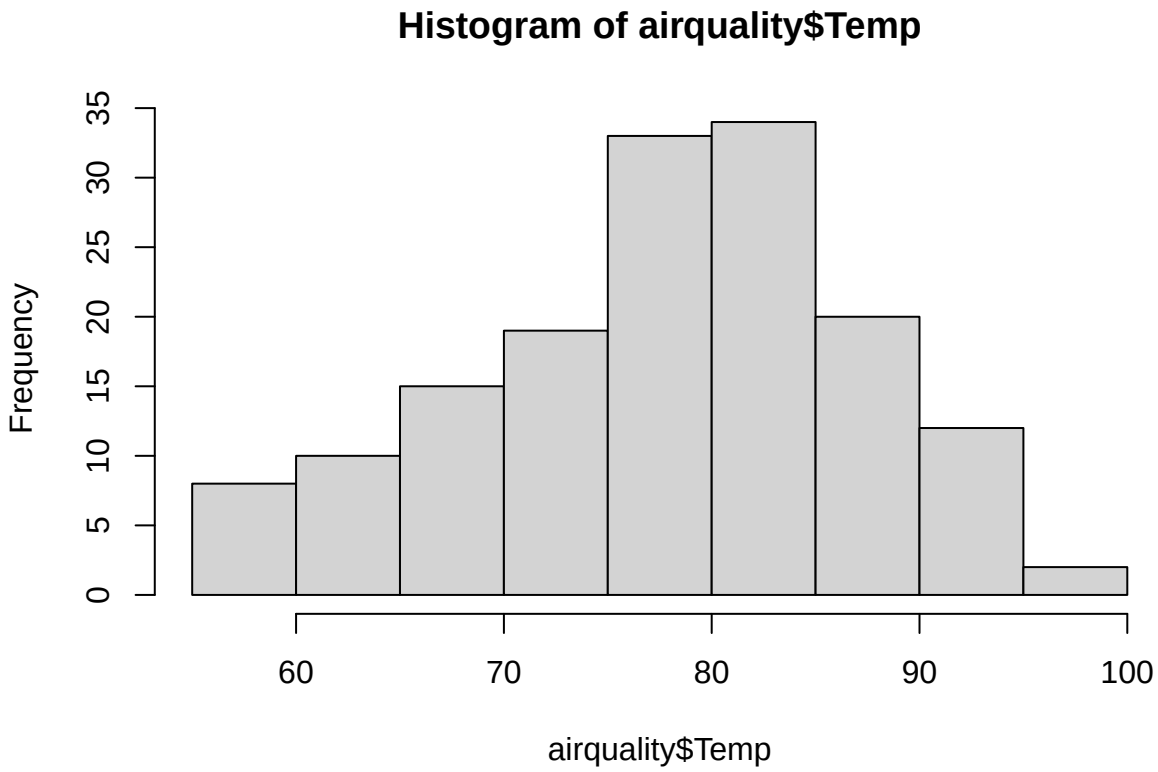
```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.1     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(Lock5Data)
```

Part 1 - Basic Plotting in ggplot2

Histograms

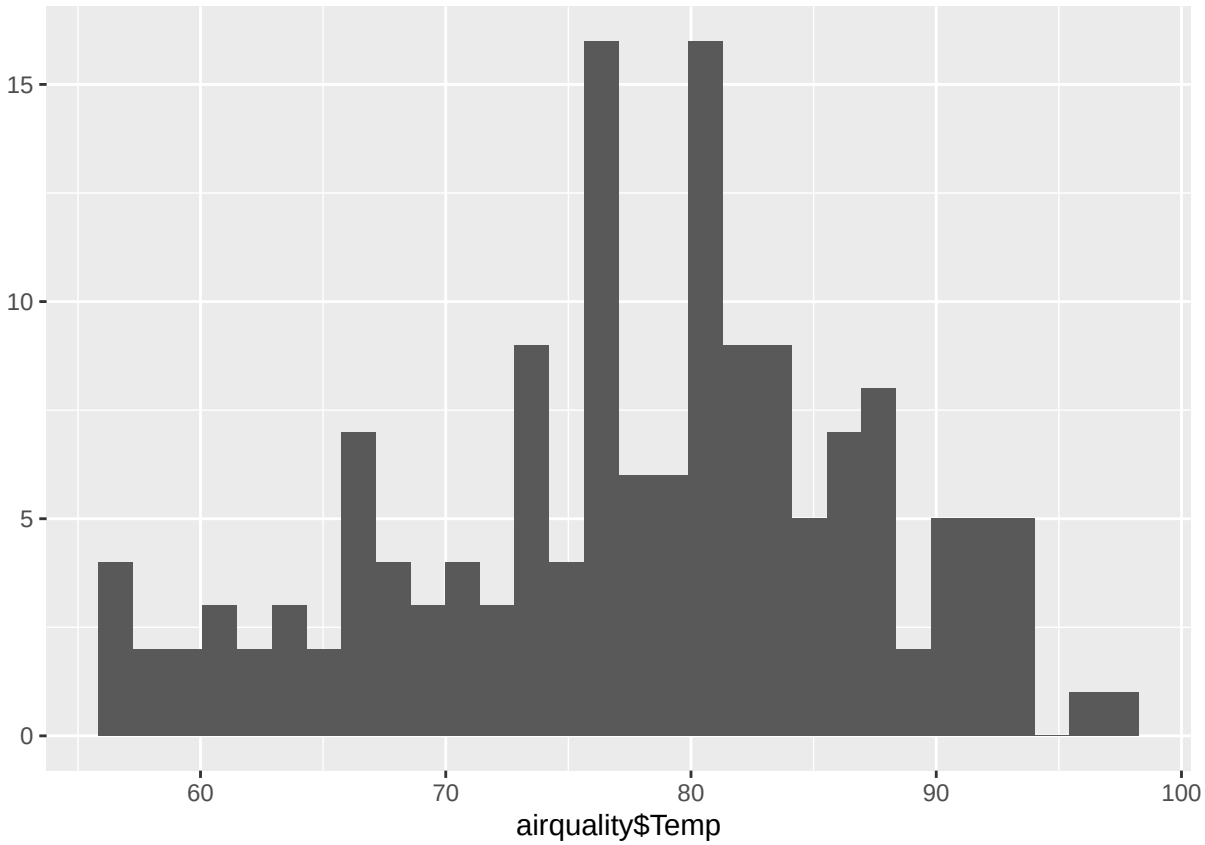
```
hist(airquality$Temp)
```




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

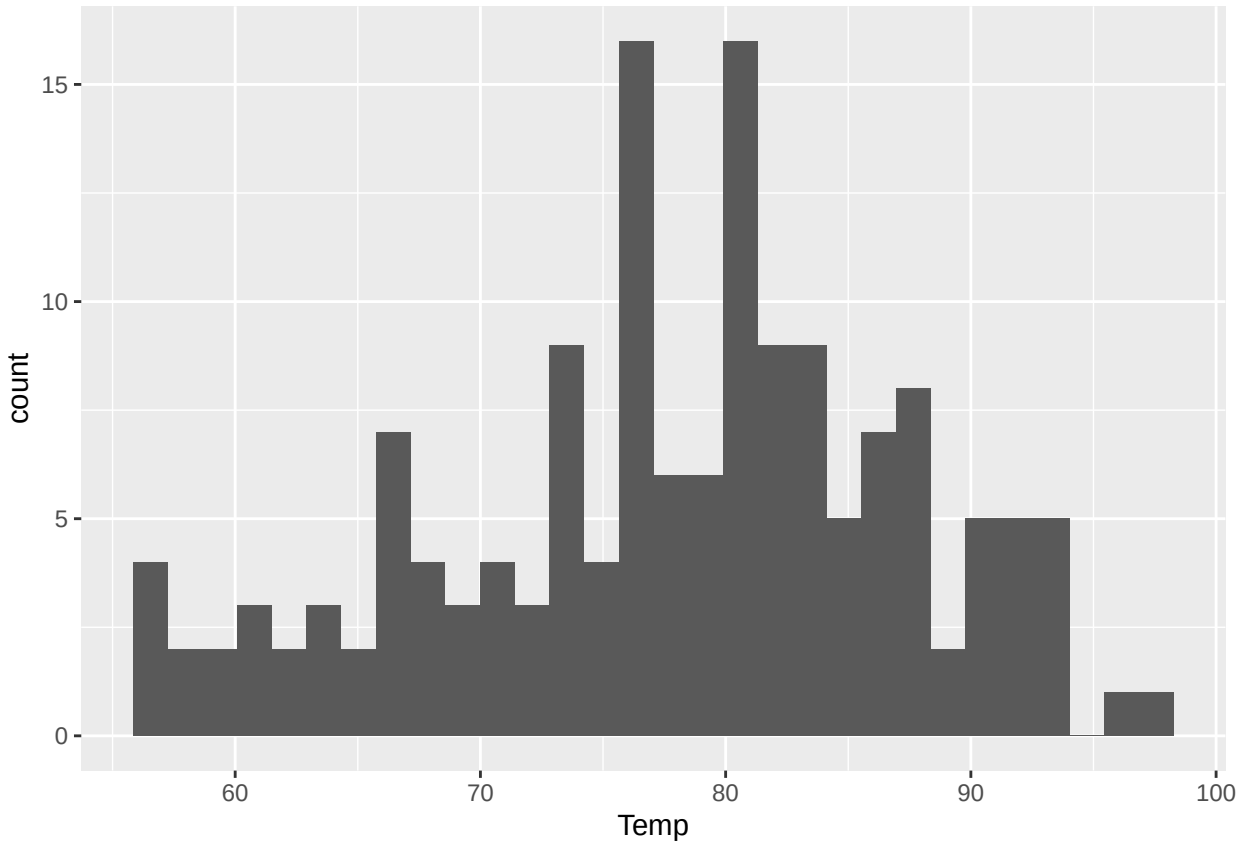
```
## Warning: `qplot()` was deprecated in ggplot2 3.4.0.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was
## generated.
```

```
## `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`.
```

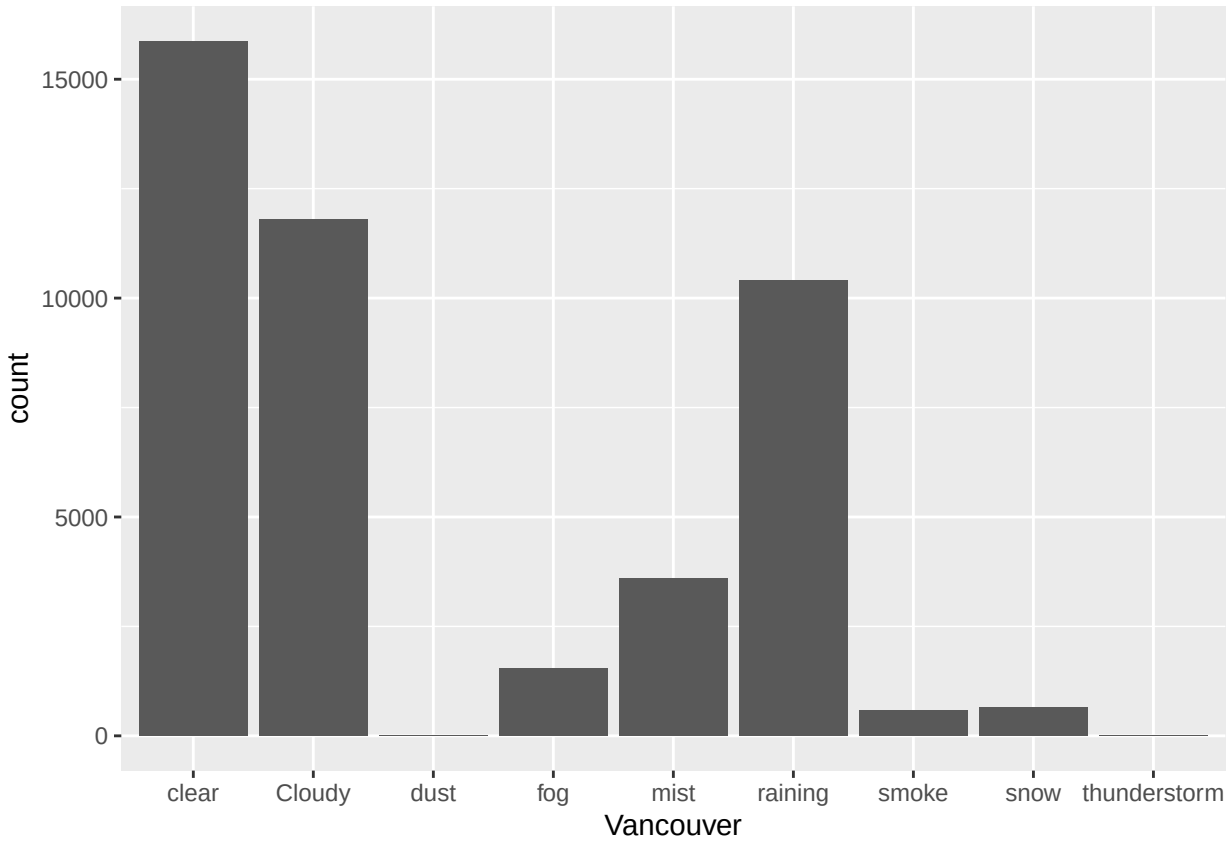


Bar plots

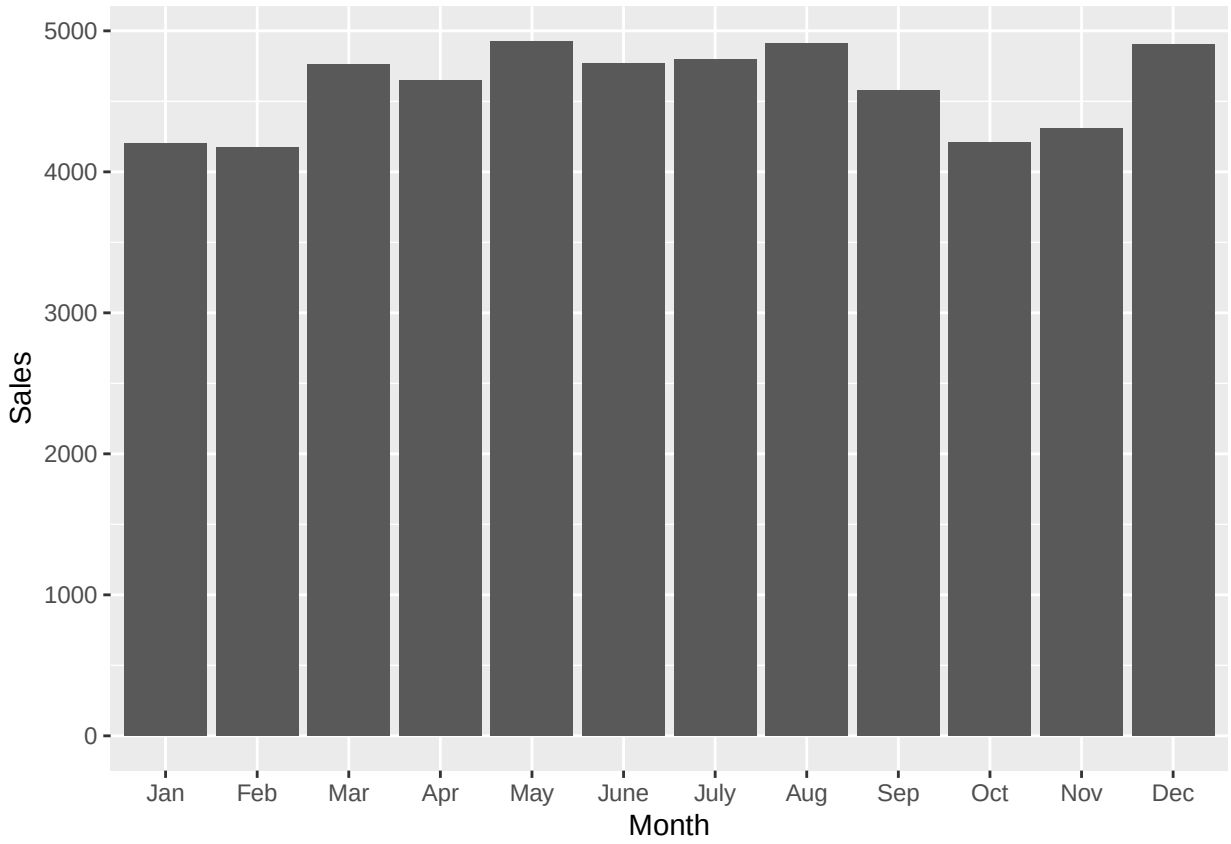
```
df_desc <- read_csv("../../data/historical-hourly-weather-data/weather_description.csv")
```

```
## New names:
## Rows: 44459 Columns: 4
## -- Column specification
## -------------------------------------------------------- Delimiter: "," chr
## (3): Vancouver, Seattle, San.Francisco dbl (1): ...1
## i Use `spec()` to retrieve the full column specification for this data. i
## Specify the column types or set `show_col_types = FALSE` to quiet this message.
## * `` -> `...1`
```

```
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")
```



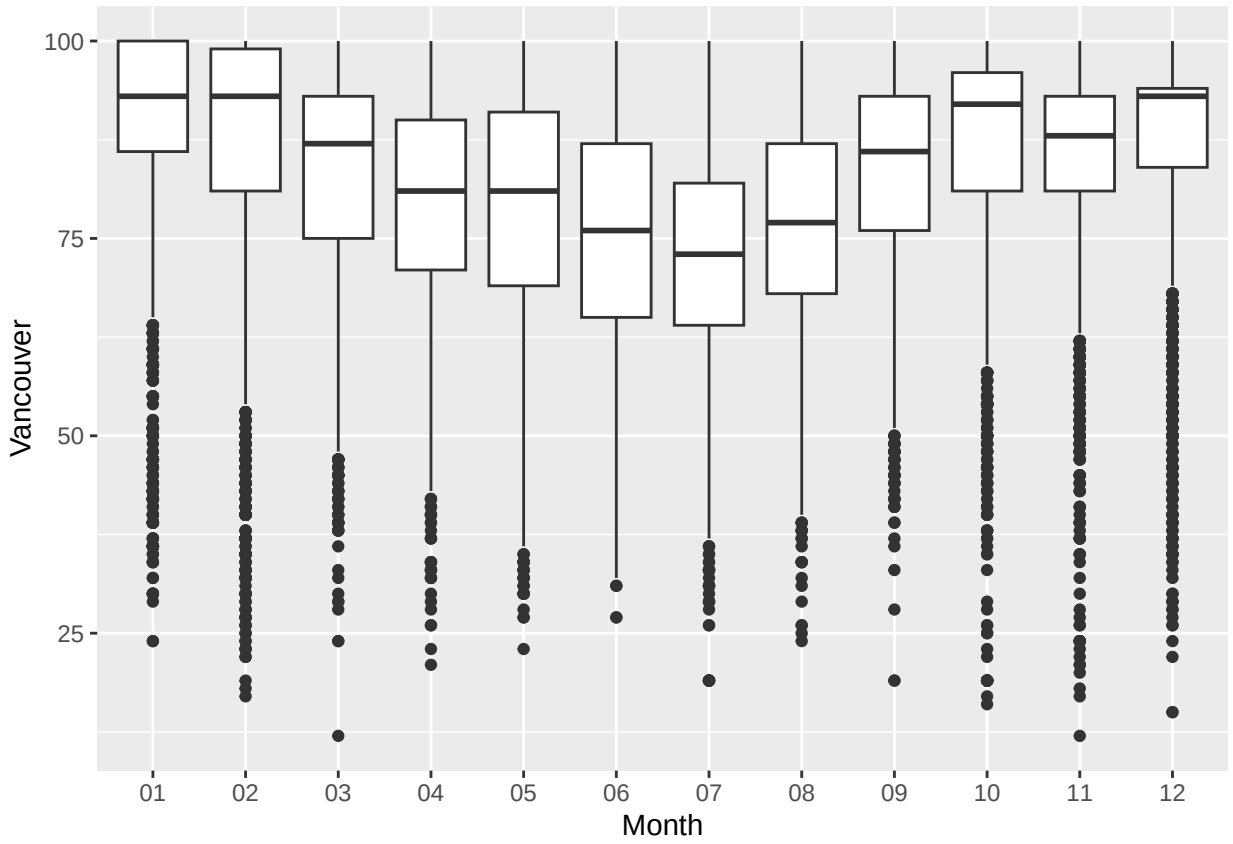
Box plots

```
df_hum <- read_csv("../../data/historical-hourly-weather-data/humidity.csv")
```

```
## Rows: 45253 Columns: 37
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## dbl  (36): Vancouver, Portland, San Francisco, Seattle, Los Angeles, San Die...
## dttm  (1): datetime
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

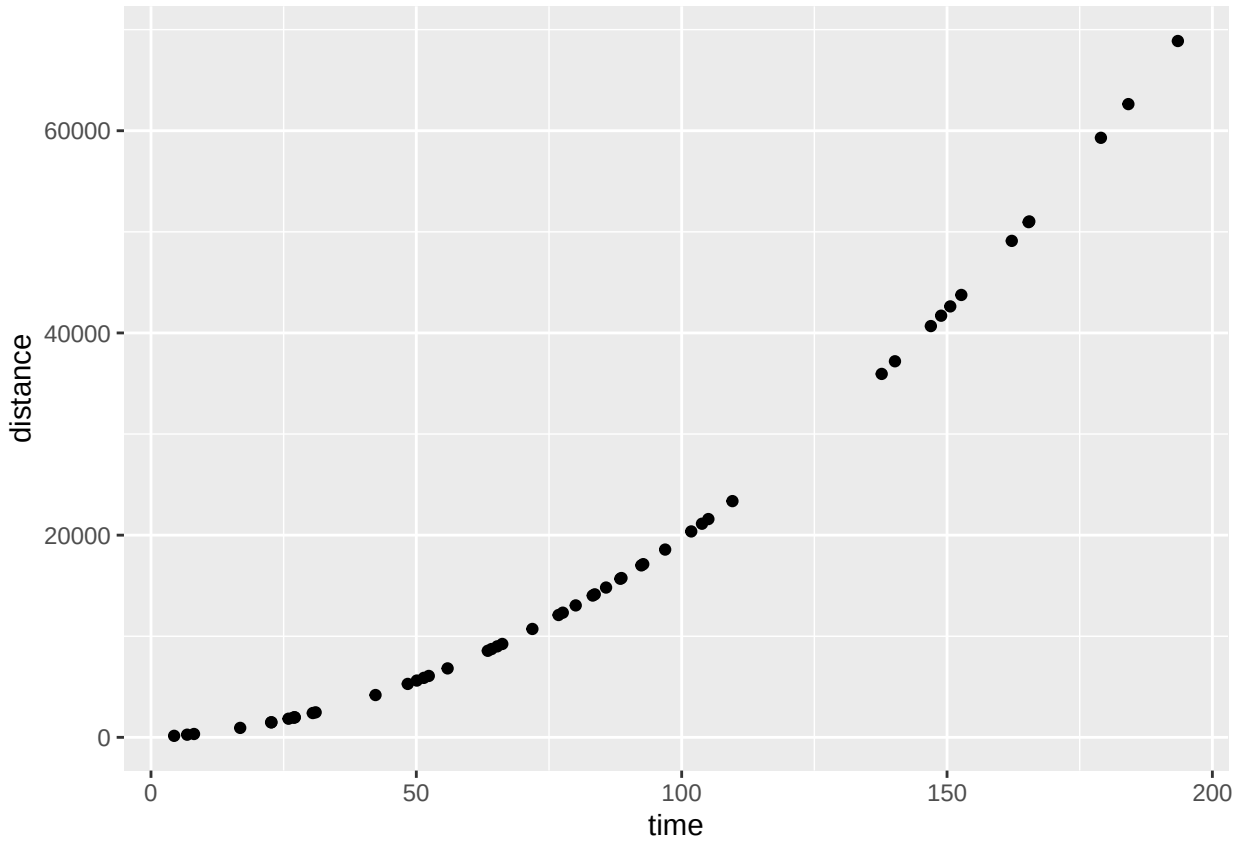
```
df_hum$datetime <- as.character(df_hum$datetime)
df_hum$Month <- substr(df_hum$datetime, 6, 7)
ggplot(df_hum, aes(x=Month, y=Vancouver)) +
geom_boxplot()
```

```
## Warning: Removed 1826 rows containing non-finite outside the scale range
## (`stat_boxplot()`).
```

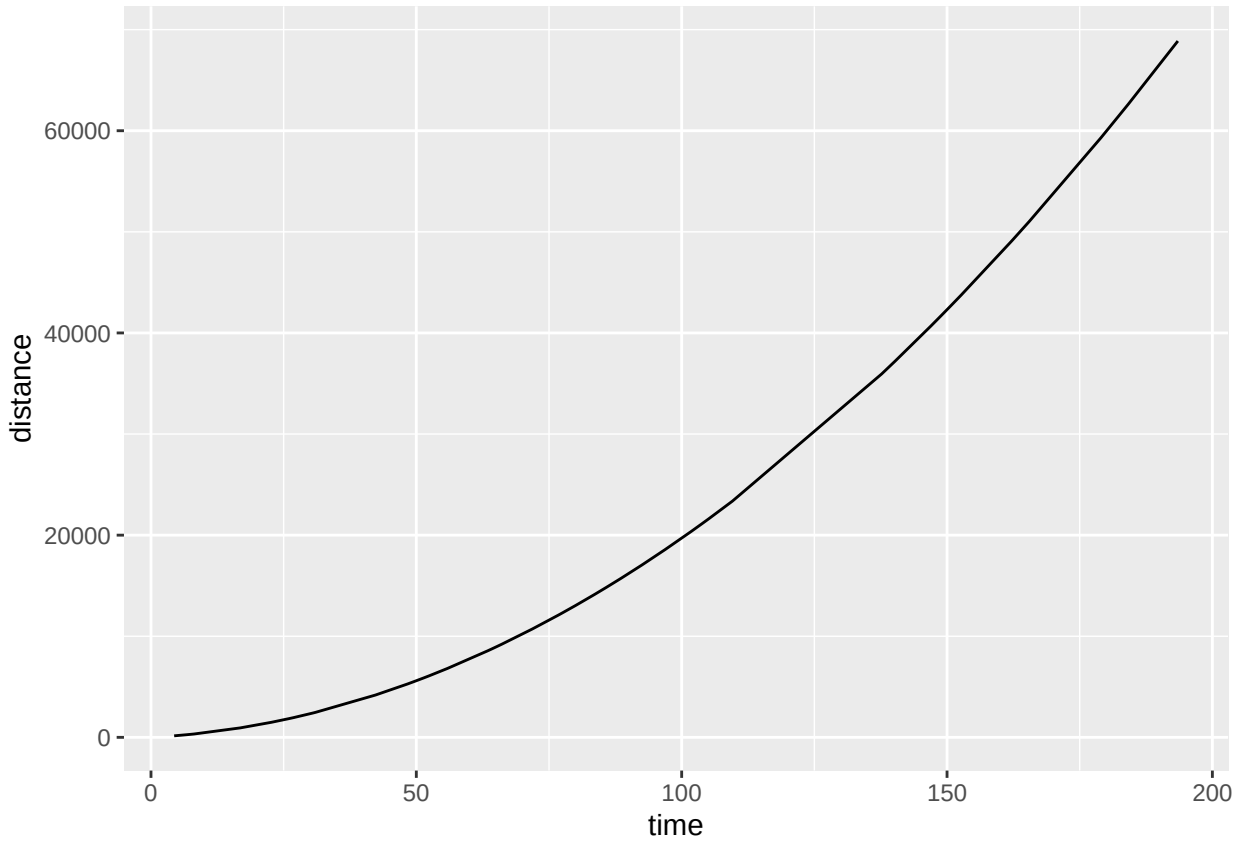


Scatter plots and line plots

```
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

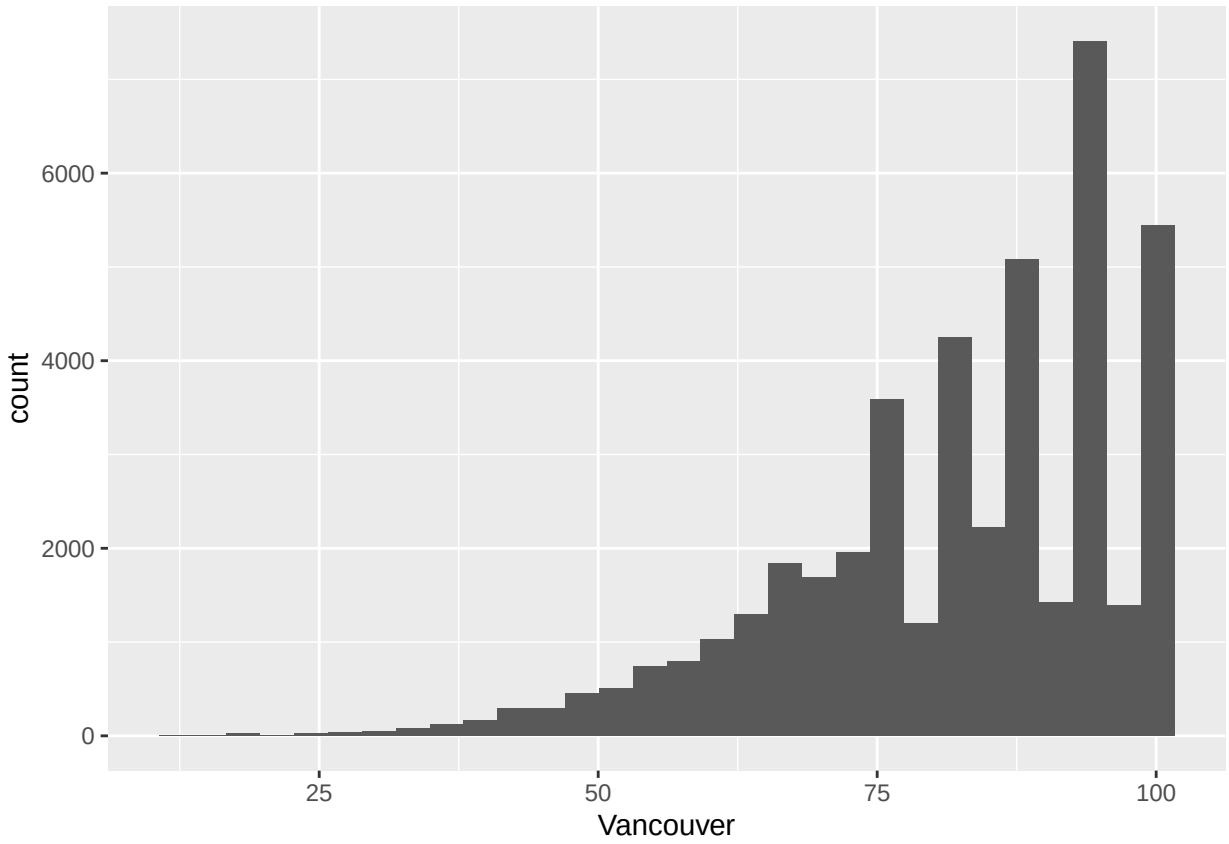
```
df_hum <- read_csv("../../data/historical-hourly-weather-data/humidity.csv")
```

```
## Rows: 45253 Columns: 37
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## dbl  (36): Vancouver, Portland, San Francisco, Seattle, Los Angeles, San Die...
## dttm  (1): datetime
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

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

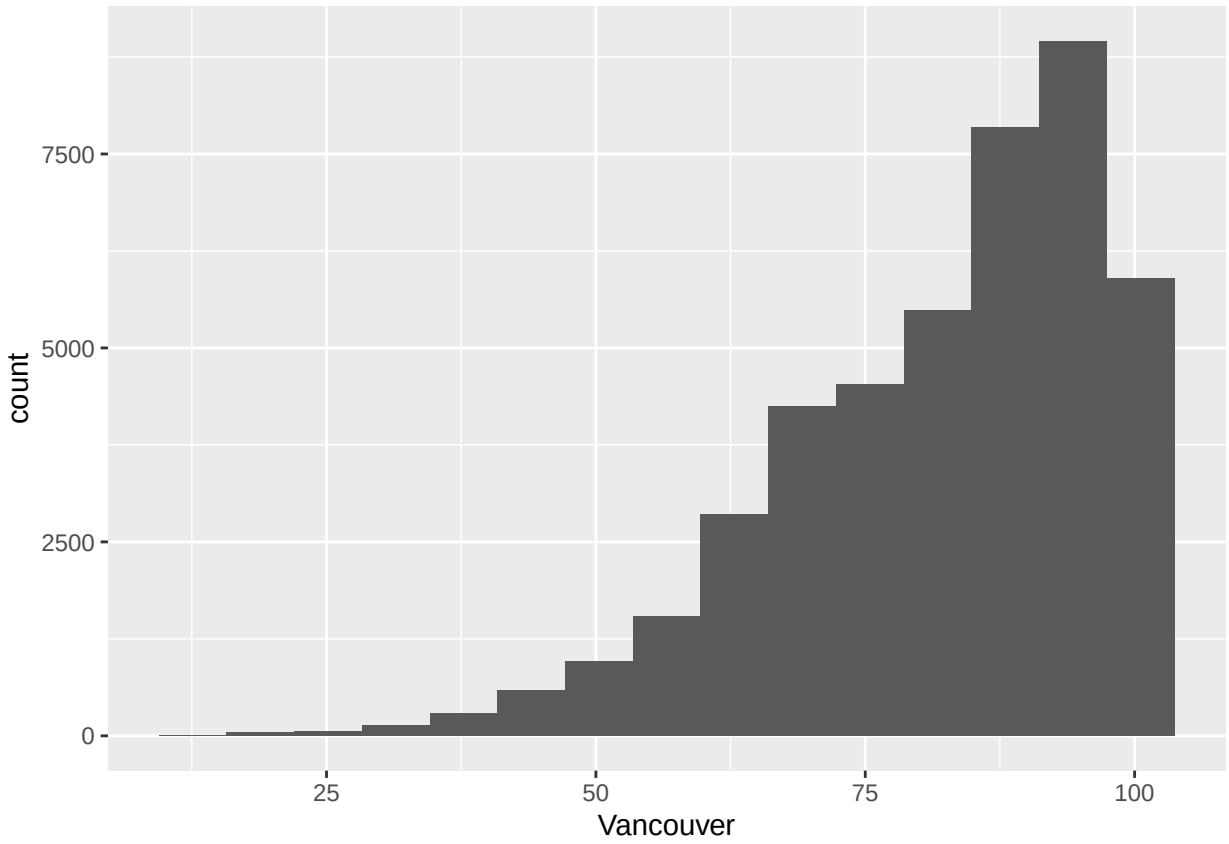
```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

```
## Warning: Removed 1826 rows containing non-finite outside the scale range
## (`stat_bin()`).
```



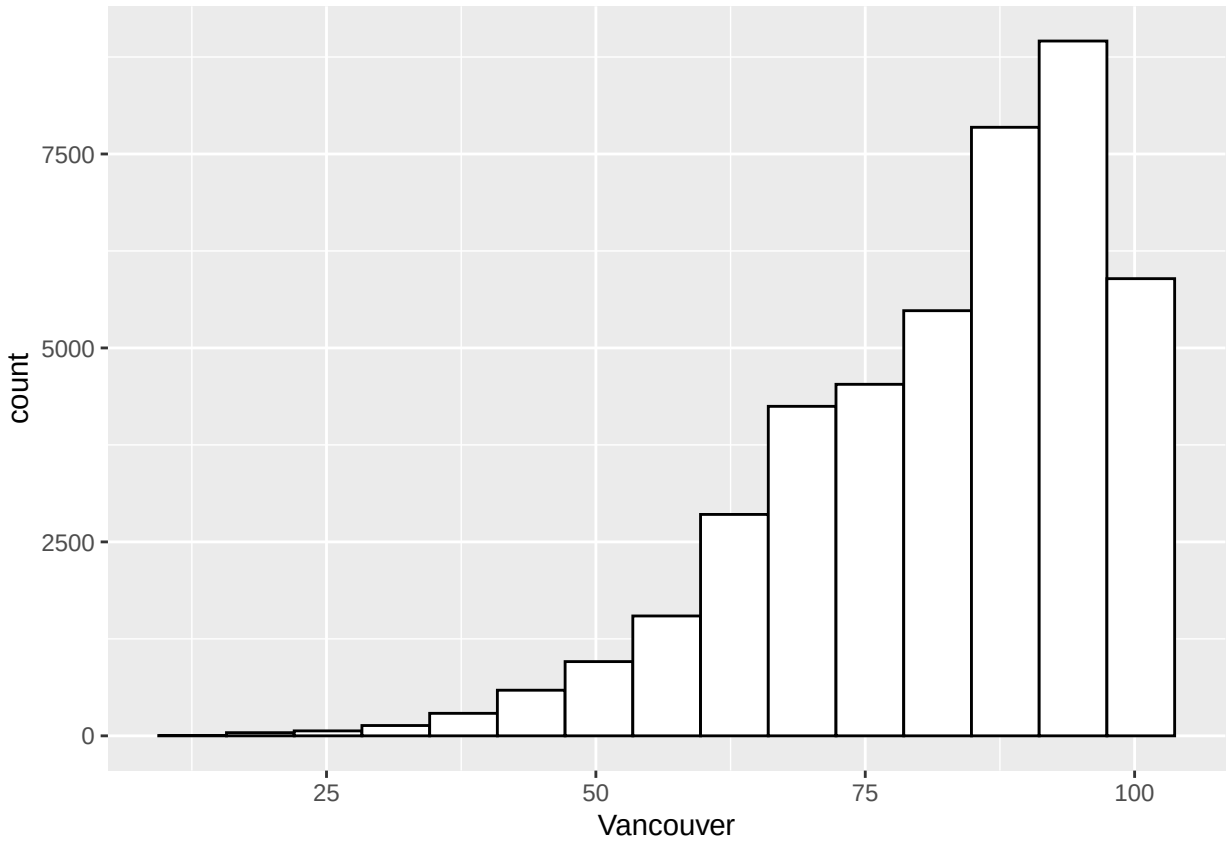

```
ggplot(df_hum, aes(x=Vancouver)) + geom_histogram(bins=15)
```

```
## Warning: Removed 1826 rows containing non-finite outside the scale range
## (`stat_bin()`).
```



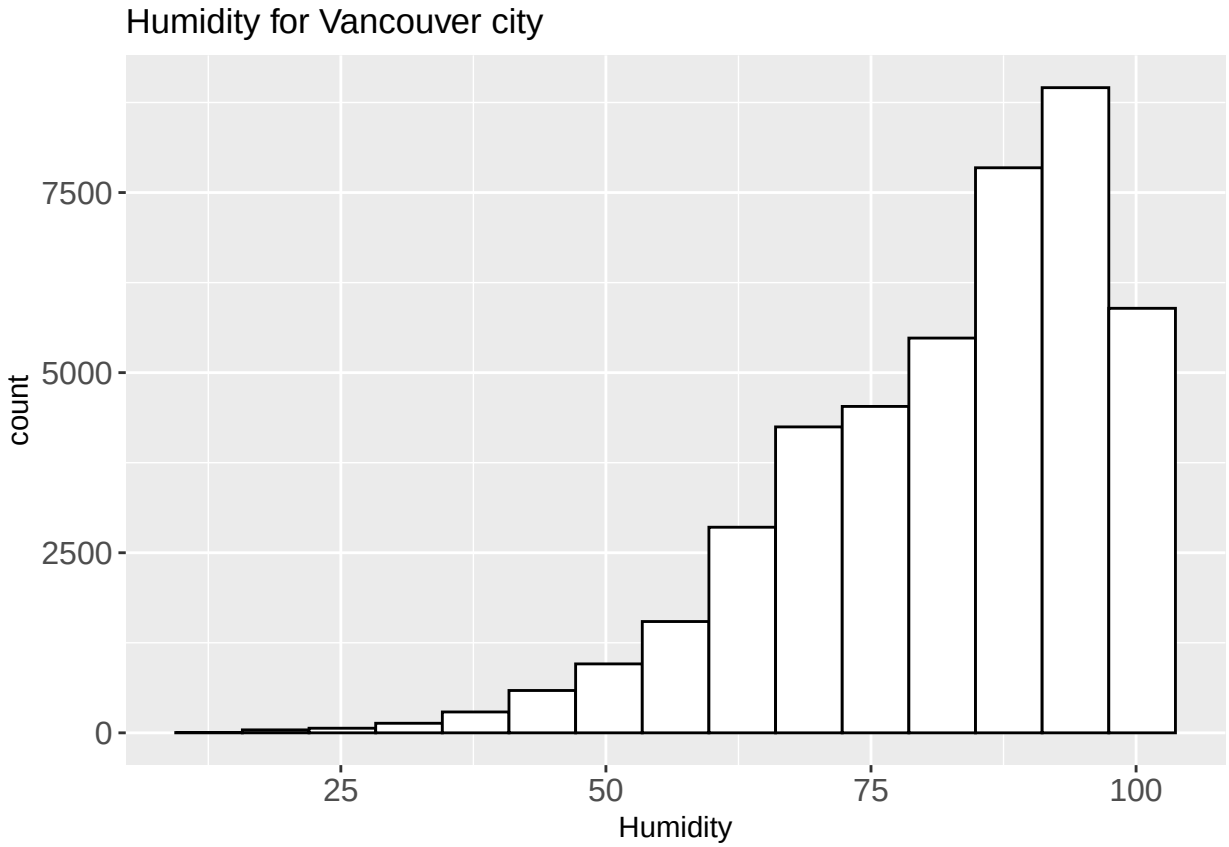

```
ggplot(df_hum, aes(x=Vancouver)) + geom_histogram(bins=15, fill="white", color=1)
```

```
## Warning: Removed 1826 rows containing non-finite outside the scale range
## (`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 outside the scale range
## (`stat_bin()`).
```



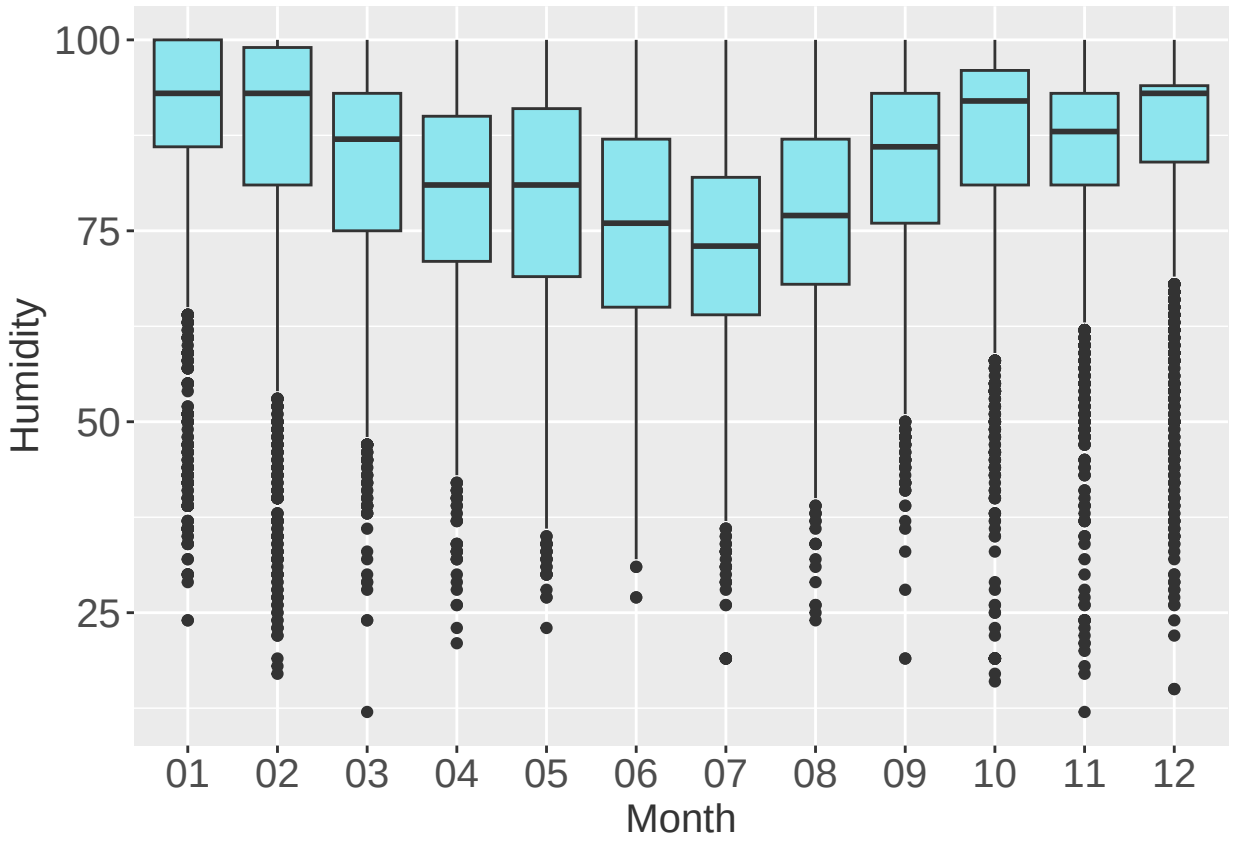
Changing boxplot defaults and adding aesthetics

```
df_hum <- read_csv("../../data/historical-hourly-weather-data/humidity.csv")
```

```
## Rows: 45253 Columns: 37
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## dbl  (36): Vancouver, Portland, San Francisco, Seattle, Los Angeles, San Die...
## dttm  (1): datetime
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
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 outside the scale range
## (`stat_boxplot()`).
```


100
75
50
25
Humidity
01
02
03
04
05
06
07
08
09
10
11
12
Month