```
# Import library
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
#library(ggplot2)
#library(tidyverse)
library(janitor)
```

```
##
## Attaching package: 'janitor'
```

```
## The following objects are masked from 'package:stats':
##
##     chisq.test, fisher.test
```

```
#library(gganimate)
#library(gifski)
#library(png)
#library(ggrepel)
#library(scales)
#library(reshape2)
#library(xlsx)
library(lubridate)
```

```
##
## Attaching package: 'lubridate'
```

```
## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
```

```
path <- "/Users/jason/Documents/GitHub/STAT440/weatherAUS.csv"
df <- read.csv(path)
# df
# df_tempx <- df %>%
#   filter(month(as.Date(Date)) == 6 & year(as.Date(Date)) == 2016)
# df_tempx
```

```
# {Date Location MinTemp MaxTemp}
df_temp <- df %>% select(c(1:4))
# Winter Data
df_temp_winter <- df_temp %>%
  filter(month(as.Date(Date)) >= 6 & month(as.Date(Date)) <= 8)
# df_temp_winter

# Summer Data
df_temp_summer <- df_temp %>%
  filter(month(as.Date(Date)) == 12 | month(as.Date(Date)) <= 2)
# df_temp_summer

# Albury 2016 Winter Data
df_Albury_2016 <- df_temp_winter %>% filter(Location == "Albury" & year(as.Date(Date)
) == 2016)
df_Albury_2016
```

```
##          Date Location MinTemp MaxTemp
## 1  2016-06-01   Albury     3.2    17.3
## 2  2016-06-02   Albury     3.3    18.1
## 3  2016-06-03   Albury     4.7    13.6
## 4  2016-06-04   Albury     9.8    14.9
## 5  2016-06-05   Albury    10.8    14.6
## 6  2016-06-06   Albury     7.2    12.3
## 7  2016-06-07   Albury     9.0    12.6
## 8  2016-06-08   Albury     9.8    14.6
## 9  2016-06-09   Albury    11.4    15.7
## 10 2016-06-10   Albury    10.5    13.8
## 11 2016-06-11   Albury     9.6    13.0
## 12 2016-06-12   Albury     0.4    12.7
## 13 2016-06-13   Albury    -0.6    13.8
## 14 2016-06-14   Albury     0.9    15.2
## 15 2016-06-15   Albury     0.9    11.4
```

```
## 16 2016-06-16   Albury     0.0    12.9
## 17 2016-06-17   Albury     4.1    15.9
## 18 2016-06-18   Albury     9.0    17.6
## 19 2016-06-19   Albury     8.1    14.3
## 20 2016-06-20   Albury    10.0    16.6
## 21 2016-06-21   Albury     8.8    11.6
## 22 2016-06-22   Albury     9.1    13.7
## 23 2016-06-23   Albury     9.0    13.2
## 24 2016-06-24   Albury     6.6     8.2
## 25 2016-06-25   Albury    -0.8    10.5
## 26 2016-06-26   Albury    -1.3     7.5
## 27 2016-06-27   Albury     2.1    10.6
## 28 2016-06-28   Albury     2.5    11.8
## 29 2016-06-29   Albury     6.2    13.5
## 30 2016-06-30   Albury     3.0    11.2
## 31 2016-07-01   Albury     5.2    11.4
## 32 2016-07-02   Albury     7.2    12.5
## 33 2016-07-03   Albury     7.9    12.7
## 34 2016-07-04   Albury     8.2    11.7
## 35 2016-07-05   Albury     6.7    10.6
## 36 2016-07-06   Albury     7.2    15.4
## 37 2016-07-07   Albury     4.0    16.5
## 38 2016-07-08   Albury     6.5    11.8
## 39 2016-07-09   Albury     7.0    15.8
## 40 2016-07-10   Albury     6.2    14.0
## 41 2016-07-11   Albury     9.1    16.2
## 42 2016-07-12   Albury     8.6    12.9
## 43 2016-07-13   Albury     3.6     9.5
## 44 2016-07-14   Albury    -0.3    10.8
## 45 2016-07-15   Albury     4.4    12.8
## 46 2016-07-16   Albury    -0.4    14.0
## 47 2016-07-17   Albury     0.4    16.5
## 48 2016-07-18   Albury     2.1    13.4
## 49 2016-07-19   Albury     7.3    15.2
## 50 2016-07-20   Albury     8.5    17.3
## 51 2016-07-21   Albury     6.2    16.8
## 52 2016-07-22   Albury     9.9    18.2
## 53 2016-07-23   Albury     7.1    10.8
## 54 2016-07-24   Albury    -0.2    10.1
## 55 2016-07-25   Albury     4.7    11.5
## 56 2016-07-26   Albury     4.5    11.3
## 57 2016-07-27   Albury     6.9    12.6
## 58 2016-07-28   Albury     5.9    10.8
## 59 2016-07-29   Albury     7.7    12.2
## 60 2016-07-30   Albury     8.3    12.1
## 61 2016-07-31   Albury     8.0    14.3
## 62 2016-08-01   Albury     9.6    11.8
```

```
## 63 2016-08-02   Albury     8.3    13.7
## 64 2016-08-03   Albury    -0.2    15.4
## 65 2016-08-04   Albury     1.4    15.1
## 66 2016-08-05   Albury     0.5    15.3
## 67 2016-08-06   Albury     1.2    13.0
## 68 2016-08-07   Albury     0.7    15.6
## 69 2016-08-08   Albury     1.4    15.1
## 70 2016-08-09   Albury     1.8    17.2
## 71 2016-08-10   Albury     7.4    15.0
## 72 2016-08-11   Albury     4.7    13.4
## 73 2016-08-12   Albury     0.7    11.6
## 74 2016-08-13   Albury     4.7    15.4
## 75 2016-08-14   Albury     4.7    16.6
## 76 2016-08-15   Albury     2.2    16.8
## 77 2016-08-16   Albury     1.7    18.5
## 78 2016-08-17   Albury     6.0    18.0
## 79 2016-08-18   Albury     4.0    19.6
## 80 2016-08-19   Albury     9.3    16.4
## 81 2016-08-20   Albury     5.3    12.0
## 82 2016-08-21   Albury     5.4    15.4
## 83 2016-08-22   Albury     8.4    13.9
## 84 2016-08-23   Albury     4.2    15.7
## 85 2016-08-24   Albury     2.6    12.2
## 86 2016-08-25   Albury     3.3    14.1
## 87 2016-08-26   Albury     0.2    13.6
## 88 2016-08-27   Albury     0.7    13.5
## 89 2016-08-28   Albury     2.1    16.9
## 90 2016-08-29   Albury     3.4    18.2
## 91 2016-08-30   Albury     7.8    15.3
## 92 2016-08-31   Albury    10.6    18.4
```

```
# WaggaWagga 2016 Winter Data
df_WaggaWagga_2016 <- df_temp_winter %>% filter(Location == "WaggaWagga" & year(as.Da
te(Date)) == 2016)
df_WaggaWagga_2016
```

```
##          Date   Location MinTemp MaxTemp
## 1  2016-06-01 WaggaWagga     7.5    16.9
## 2  2016-06-02 WaggaWagga     5.3    17.7
## 3  2016-06-03 WaggaWagga     8.8    12.8
## 4  2016-06-04 WaggaWagga     9.9    15.5
## 5  2016-06-05 WaggaWagga    10.6    13.7
## 6  2016-06-06 WaggaWagga     8.1    12.1
## 7  2016-06-07 WaggaWagga     7.9    11.8
## 8  2016-06-08 WaggaWagga     9.3    15.3
## 9  2016-06-09 WaggaWagga    11.5    16.5
```

```
## 10 2016-06-10 WaggaWagga     9.8    13.6
## 11 2016-06-11 WaggaWagga     8.1    13.5
## 12 2016-06-12 WaggaWagga    -0.1    12.8
## 13 2016-06-13 WaggaWagga     1.5    15.1
## 14 2016-06-14 WaggaWagga     3.4    16.2
## 15 2016-06-15 WaggaWagga     0.2    13.9
## 16 2016-06-16 WaggaWagga     2.0    15.9
## 17 2016-06-17 WaggaWagga     6.2    15.3
## 18 2016-06-18 WaggaWagga    12.1    17.7
## 19 2016-06-19 WaggaWagga     9.9    13.0
## 20 2016-06-20 WaggaWagga    11.1    15.1
## 21 2016-06-21 WaggaWagga     9.4    11.5
## 22 2016-06-22 WaggaWagga     9.2    12.9
## 23 2016-06-23 WaggaWagga     7.8    12.7
## 24 2016-06-24 WaggaWagga     6.8     8.2
## 25 2016-06-25 WaggaWagga     0.9     8.9
## 26 2016-06-26 WaggaWagga    -1.1     6.6
## 27 2016-06-27 WaggaWagga     0.0     9.0
## 28 2016-06-28 WaggaWagga     5.0    12.6
## 29 2016-06-29 WaggaWagga     6.9    14.3
## 30 2016-06-30 WaggaWagga     1.8    11.9
## 31 2016-07-01 WaggaWagga     5.9    11.1
## 32 2016-07-02 WaggaWagga     7.0    12.3
## 33 2016-07-03 WaggaWagga     5.2    12.0
## 34 2016-07-04 WaggaWagga     5.2    12.4
## 35 2016-07-05 WaggaWagga     7.6    10.2
## 36 2016-07-06 WaggaWagga     8.0    14.9
## 37 2016-07-07 WaggaWagga     3.3    17.4
## 38 2016-07-08 WaggaWagga     9.0    12.0
## 39 2016-07-09 WaggaWagga     9.2    14.2
## 40 2016-07-10 WaggaWagga     6.0    14.2
## 41 2016-07-11 WaggaWagga    10.3    16.0
## 42 2016-07-12 WaggaWagga     4.7    14.1
## 43 2016-07-13 WaggaWagga     3.9     8.9
## 44 2016-07-14 WaggaWagga    -1.0    10.7
## 45 2016-07-15 WaggaWagga     2.9    12.7
## 46 2016-07-16 WaggaWagga     0.7    15.8
## 47 2016-07-17 WaggaWagga     1.6    17.1
## 48 2016-07-18 WaggaWagga     4.3    16.0
## 49 2016-07-19 WaggaWagga     8.9    16.3
## 50 2016-07-20 WaggaWagga    12.0    17.0
## 51 2016-07-21 WaggaWagga     7.4    16.2
## 52 2016-07-22 WaggaWagga    10.4    19.9
## 53 2016-07-23 WaggaWagga     7.1    10.9
## 54 2016-07-24 WaggaWagga    -1.1    10.4
## 55 2016-07-25 WaggaWagga     3.8    10.8
## 56 2016-07-26 WaggaWagga     5.0    11.9
```

```
## 57 2016-07-27 WaggaWagga     7.1    11.7
## 58 2016-07-28 WaggaWagga     3.2    10.5
## 59 2016-07-29 WaggaWagga     6.6    10.5
## 60 2016-07-30 WaggaWagga     5.5    11.4
## 61 2016-07-31 WaggaWagga     4.1    15.7
## 62 2016-08-01 WaggaWagga     7.8    11.9
## 63 2016-08-02 WaggaWagga     8.2    12.2
## 64 2016-08-03 WaggaWagga    -0.2    14.9
## 65 2016-08-04 WaggaWagga     0.8    15.2
## 66 2016-08-05 WaggaWagga     0.8    15.5
## 67 2016-08-06 WaggaWagga     0.7    14.0
## 68 2016-08-07 WaggaWagga     2.8    14.9
## 69 2016-08-08 WaggaWagga     2.0    16.0
## 70 2016-08-09 WaggaWagga     5.2    17.1
## 71 2016-08-10 WaggaWagga     8.8    16.0
## 72 2016-08-11 WaggaWagga     5.4    12.4
## 73 2016-08-12 WaggaWagga    -0.7    11.7
## 74 2016-08-13 WaggaWagga     3.3    15.8
## 75 2016-08-14 WaggaWagga     1.2    16.5
## 76 2016-08-15 WaggaWagga     0.5    17.1
## 77 2016-08-16 WaggaWagga     4.6    18.9
## 78 2016-08-17 WaggaWagga     9.3    17.5
## 79 2016-08-18 WaggaWagga     5.4    20.4
## 80 2016-08-19 WaggaWagga     9.0    17.5
## 81 2016-08-20 WaggaWagga     5.6    10.7
## 82 2016-08-21 WaggaWagga     4.5    14.7
## 83 2016-08-22 WaggaWagga     5.7    12.7
## 84 2016-08-23 WaggaWagga     5.4    10.9
## 85 2016-08-24 WaggaWagga     2.9    12.9
## 86 2016-08-25 WaggaWagga     4.2    11.3
## 87 2016-08-26 WaggaWagga    -2.0    13.0
## 88 2016-08-27 WaggaWagga    -0.5    13.3
## 89 2016-08-28 WaggaWagga     0.5    16.8
## 90 2016-08-29 WaggaWagga     4.6    15.4
## 91 2016-08-30 WaggaWagga     8.3    19.2
## 92 2016-08-31 WaggaWagga    13.1    18.4
```

```
# Correlation
# Correlation between Albury min temp and max temp
cor(df_Albury_2016$MinTemp, df_Albury_2016$MaxTemp)
```

```
## [1] 0.1370009
```

```
# Correlation between min temp in Albury and in WaggaWagga
cor(df_Albury_2016$MinTemp, df_WaggaWagga_2016$MinTemp)
```

```
## [1] 0.8776075
```

```
# Correlation between min temp in Albury and in WaggaWagga
cor(df_Albury_2016$MaxTemp, df_WaggaWagga_2016$MaxTemp)
```

```
## [1] 0.9012049
```

```
###########
# df_temp_9_3 <- df %>% select(c(1:2,20:21))
# df_temp_9_3_winter <- df_temp_9_3 %>%
#   filter(month(as.Date(Date)) >= 6 & month(as.Date(Date)) <= 8)
# temp_9_3_winter <- df_temp_9_3_winter %>% filter(Location == "Albury" & year(as.Dat
e(Date)) == 2016)
# cor(temp_9_3_winter$Temp9am, temp_9_3_winter$Temp3pm, method = "spearman")
#
# lmmm <- lm(Temp3pm ~ Temp9am, data = temp_9_3_winter)
# summary(lmmm)$r.squared
#
# write.csv(df_temp_summer,"/Users/jason/Documents/GitHub/STAT440/df_temp_summer.csv"
, row.names = FALSE)
```