Assignment_05

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```
#Libraries
library(tidyverse)
```

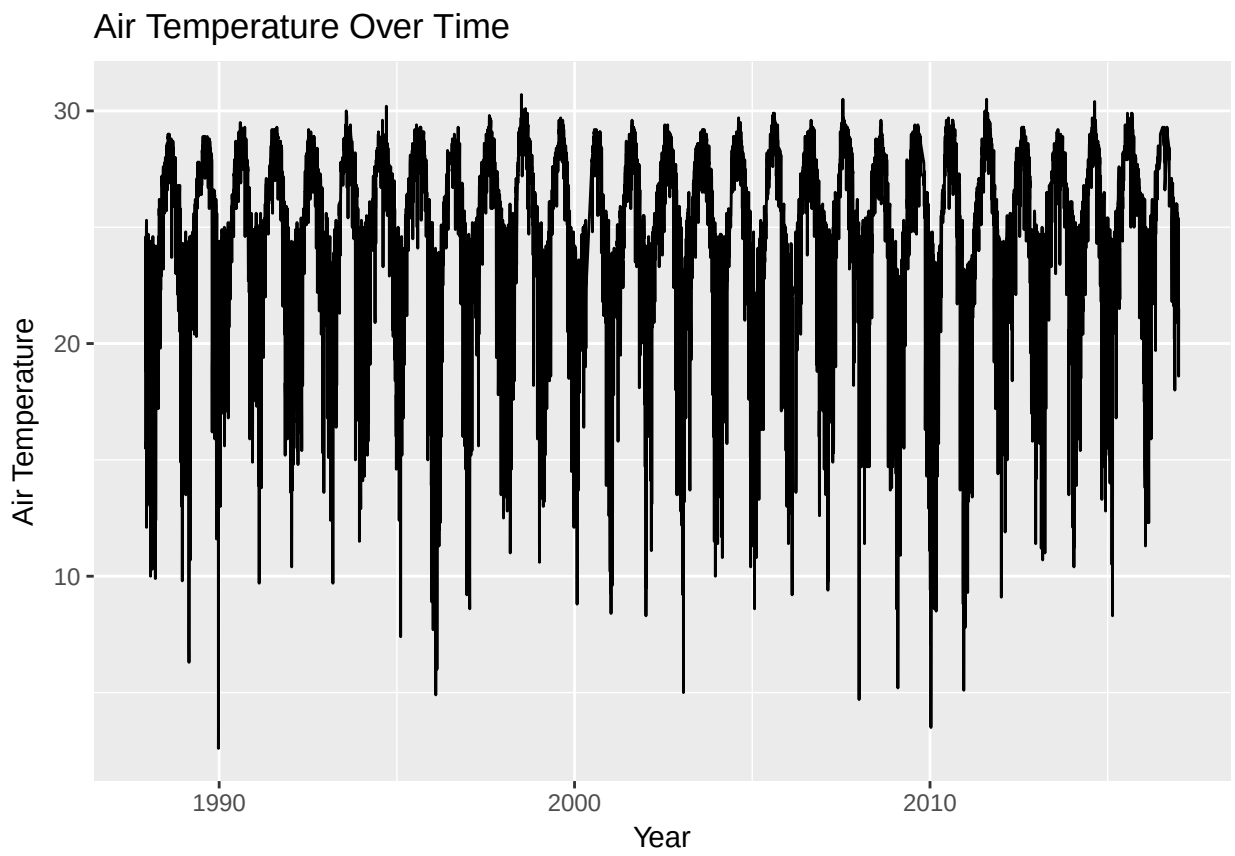
```
## -- Attaching packages ---------------------------------------------------------------------------
```

```
## v ggplot2 2.2.1     v purrr   0.2.4
## v tibble  1.4.2     v dplyr   0.7.4
## v tidyr   0.8.0     v stringr 1.2.0
## v readr   1.1.1     v forcats 0.2.0
```

```
## -- Conflicts ------------------------------------------------------------------------------------
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(stringr)
library(dplyr)
library(ggplot2)

# Obtaining Data
url1 <- "http://www.ndbc.noaa.gov/view_text_file.php?filename=mlrf1h"
url2 <- ".txt.gz&dir=data/historical/stdmet/"
years <- c(1987:2016)
urls <- str_c(url1, years, url2, sep = "")
filenames <- str_c("mr", years, sep = "")
N <- length(urls)

## Formatting Data
for (i in 1:N){
  suppressMessages(
    assign(filenames[i], read_table(urls[i], col_names = TRUE))
  )
  file <- get(filenames[i])
  colnames(file)[1] <-"YYYY"
  if(!is.numeric(file[1,1])){
    file <- file[2:nrow(file),]
    file$YYYY <- as.numeric(file$YYYY)
  }
  file$YYYY <- ifelse(as.numeric(file$YYYY%/%100)<1, file$YYYY+1900, file$YYYY)
  file <- file %>% filter(hh==12)

# Combining Data
  if(i == 1){
    MR <- file %>% select(YYYY, MM, DD, hh, ATMP, WTMP)
  }
  else{
    MR <- rbind.data.frame(MR, file %>% select(YYYY, MM, DD, hh, ATMP, WTMP))
    }
}
```

```r
# Making Data Numeric
MR$MM <- as.numeric(MR$MM)
MR$DD <- as.numeric(MR$DD)
MR$hh <- as.numeric(MR$hh)
MR$ATMP <- as.numeric(MR$ATMP)
MR$WTMP <- as.numeric(MR$WTMP)
MR <- MR %>%
  filter(ATMP<99) %>%
  filter(WTMP<99)

# Making Time Series for Air Temperature
A <- MR %>%
  select(YYYY,ATMP, MM, DD) %>%
  mutate(date=as.Date(paste(as.character(MM), "/", as.character(DD), "/", as.character(YYYY), sep="")), 
ggplot(data=A, aes(x=date, y=ATMP))+
  geom_line()+
  xlab("Year")+
  ylab("Air Temperature")+
  ggtitle("Air Temperature Over Time")+
  scale_x_date(date_labels = "%Y")
```




```r
# Making Time Series for Water Temperature
W <- MR %>%
  select(YYYY,WTMP, MM, DD) %>%
  mutate(date=as.Date(paste(as.character(MM), "/", as.character(DD), "/", as.character(YYYY), sep="")), 
ggplot(data=W, aes(x=date, y=WTMP))+
```

```
  geom_line()+
  xlab("Year")+
  ylab("Water Temperature")+
  ggtitle("Water Temperature Over Time")+
  scale_x_date(date_labels = "%Y")
```