**HW 6, STAT 450**
Due: Wednesday, December 1

**Reading**: Chapter 16 from *R for Data Science*

```
library(tidyverse)
library(lubridate)
```

**Exercise 1.** Run the following command to load the 2018 San Francisco crime data set discussed in lecture 21:

```
sfcrimes <- readRDS(url("https://ericwfox.github.io/data/sfcrimes.rds"))
```

**(a)** Make a subsetted data frame that only contains crime events that are categorized as `Larceny Theft`.

**(b)** Use the appropriate `lubridate` function to parse the date-times of the theft events (i.e., convert from a character vector to a date-time object in R). Then make a data frame that has columns for the date, month, day of week, and hour of day for the theft events.

**(c)** Make a bar plot that displays the counts of the number of theft events that occurred each hour of the day (0-23).

**(d)** Make a bar plot that displays the counts of the number of theft events that occurred each day of the week (Sun-Sat).

**(e)** Make a time series plot that displays the counts of the number of theft events that occurred on each day of 2018. Use `geom_smooth()` to add a trend line, and set `span = 0.3` to adjust the smoothness of the line.

**(f)** Describe any interesting trends or features that you discovered in the plots created in parts (c)-(e).

**Bonus.** Create a "zoomed-in" time series plot displaying the counts of the number of theft events that occurred on each day during the month of December 2018.