# Homework 3

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This homework is based on Shiny app.

Q1. Create the following 3 Shiny apps.

1. Print a `table` of first n observations from `mpg` data set, where n is the number of observations to print. The default value of n will be 6 while users can select a numeric input anywhere between 1 and 20 observations. (3 points)

Shiny app is visible here: https://malshe.shinyapps.io/problem_1_1/

2. Let users select a city from among the five Texan cities and then print "You selected [name of the city]". Cities: Austin, Dallas, El Paso, Houston, San Antonio (2 points)

Shiny app is visible here: https://malshe.shinyapps.io/problem_1_2/

3. Let users select a date and then you print the day of the date. For this use the `day` function from `lubridate` package. The default value selected is 2018-09-18. (2 points)

Shiny app is visible here: https://malshe.shinyapps.io/problem_1_3/

Q2. Create a Shiny app to display a histogram of n randomly chosen values from a standard normal distribution. The histogram will be plotted using `geom_histogram` in `ggplot2`. The app must have the following 4 controls:

- Number of observations for the histogram. The default number is 100 and the range of number is minimum 50 and maximum 200. Use **slider input** for this.
- Number of bins for the histogram with 20 as the default. The minimum is 10 and the maximum is 50. Use **slider input** for this.
- The `fill` used in the histogram. Use a **dropdown list** of the following 5 colors: blue, red, green, yellow, and black
- The `color` used in the histogram. Use a **dropdown list** of the following 3 colors: red, white, and black

Use a 2-column layout with selectors in the left column (`width = 4`) and plot in the right column (`width = 8`)

The code to generate random numbers is as follows. Don't use a random number seed for this exercise. (8 points)

```
n = # some number

randvec = rnorm(n)

# randvec is a vector of n random numbers.
# Remember that ggplot2 requires a data frame as the input
```

Shiny App is visible here: https://malshe.shinyapps.io/problem_2/