Stat 185 - In class problems

Monday, November 6

1. Suppose that we'd like to compare the average salaries of web developers vs database managers. A random sample of 45 web developers found that their average salary was \$78,434 per year with a standard deviation of \$3126. A random sample of 52 database managers found that their average salary was \$82,942 per year with a standard deviation of \$4096.

   (a) Write down the hypothesis test.

   (b) Compute the standard error for the problem.

   (c) Compute the test statistic.

   (d) Use the our normal table to find the p-value.
   And, why is it OK to use a normal table?

   (e) What is the conclusion of the test?

2. In this problem, we're going to play with the data here: `https://goo.gl/1ky5Qs`. If you go to that URL, you should see some data that you can copy and paste into an R command like so:

```
df = read.csv(text = "past-your-data-here")
```

   (a) Based on recent class presentations, can you guess what the data represents?

   (b) Figure 1 two side-by-side box and whisker plots - one for our data and one that's an imposter. Can you tell which is which?

   (c) Find a 95% confidence interval for `df$younger_times`.

   (d) Find a 95% confidence interval for the difference between `df$younger_times` and `df$older_times`.

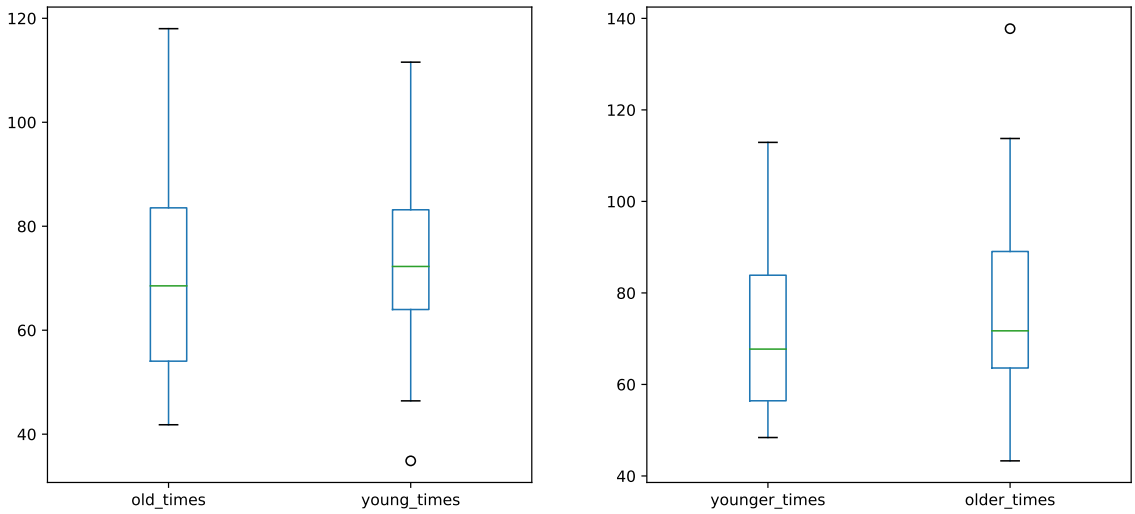

Figure 1: Box and whisker plots for two data frames