IS606 Homework 5

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October 22, 2015

5.6 Working Backwards, Part II (p257)

A 90% confidence interval for a population mean is (65, 77). The population distribution is approx. normal and the population standard deviation is unknown. This confidence interval is based on a simple random sample of 25 observations. Calculate the sample mean, the margin of error and the sample standard deviation.

First we can work out the sample mean, by finding the mid point of the confidence interval range. We also get the T * SE segment of the confidence interval equation out of these computations.

```
n <- 25
diff <- 77 - 65
TxSE <- diff / 2

mean56 <- 65 + TxSE
mean56
```

```
## [1] 71
```

Next we need to resolve the t value for a 90% confidence interval of n=25, df=24:

```
df <- n - 1
t <- qt(.1, df)

t
```

```
## [1] -1.317836
```

5.14

5.20

5.32

5.48