Bootstrap Calculations

In this example, we want to estimate the mean wage for a target population: 3000 workers in the Mid-Atlantic region. We happen to have the information about the population, so we can compare the performance of bootstrap when we’re done. We can get the data with the following code:

```r
set.seed(1)
#install.packages("ISLR")
library(ISLR) #Load ISLR package
data(Wage) #Load Wage data set
```

And then we will subsample 25 people from this data set:

```r
wagedat = Wage[sample(3000,25),]$wage #sample 25 out of 1-3000 from the "wage" column
wagedat #Visualize the contents of wagedat vector
```

1. We want to create a confidence interval for the mean. Which of the three types of intervals should we create given this data?

2. Regardless of your previous answer, create a Bootstrap type confidence interval at $\alpha = 0.05$ (the standard 95% CI) with 3000 resamples.

Population Proportion Calculations

A sample of 130 college students were surveyed and asked if they have a part-time job. Of the 130 students, 76 said they work part-time. What is the 95% CI for the proportion of all college students who have a part-time job?