Each lab will be focused around a particular question. We will (1) Reflect on the Question, (2) Analyze the Data and finally (3) Draw Conclusions.

Reflect on the Question | Analyze the Data | Draw Conclusions

Welcome to Lab!

The **Unit Labs** in this course give you an opportunity to see statistics in action. All subsequent units will include R tutorial videos, a pre-lab and a lab exercise to help you learn how to apply the statistics you have learned to answer a real world question.

This **practice lab** is a combination of a pre-lab and a lab environment. It is meant to give you an opportunity to experience the R Studio environment and to become comfortable with the lab exercises you will encounter in this course. You may repeat this practice lab as often as you wish.

Lab 1: Cycling in Austin

Help

In 2011, researchers at the Texas Transportation Institute and the Center for Transportation Research at UT Austin ran an advertising campaign aimed at recruiting Austin cyclists to join the South Congress Bike Mapping Project. As members of the project, cyclists downloaded and used *Cycle Tracks*, a smartphone app developed by the San Francisco County Transportation Authority to track where people are riding their bikes based on their GPS points. The goal was to gain new information about bike commuting patterns and this data set is based on the results of the study: 3600 trips tracked from 315 users over a 6 month period. Data includes distances traveled, speed of travel, and reasons for travel among other variables.

Primary Research Question

In this lab, we will ask a question about the bike dataset:

How many of the cyclists were students, how often did they ride, and what was the average distance they rode?

(3/3 points)

Check the Data

We will always begin by checking the data. Follow the directions below.

Let's begin by examining our data in R.

1. Open RStudio. Make sure you've installed the SDSFoundations package.
2. Type **`library(SDSFoundations)`** This will automatically load the data for the labs.
3. Type **`BikeData <- BikeData`** This will assign the data to your Workspace.
4. Look at the spreadsheet view of the data to answer the following questions.

Alternatively, you can use follow the steps in the "Importing a Data Frame" R tutorial video, and use the BikeData.csv file. (Right-click and "Save As.") Make sure to **name** the dataframe "BikeData" when importing.

1. Open RStudio.
2. Click on "Import Dataset" button at the top of the workspace window. Choose *"from text file."*
3. Click on the location of the BikeData.csv file you just downloaded.
4. Click on the BikeData.csv file. Then, click Upload.
5. Look at the spreadsheet view of the data to answer the following questions.

Can you locate the answers to these questions by looking at the data frame?

What is the age of the 7th rider in the dataset?

45

45

How many of the first 10 riders in the dataset ride daily?

3

3

Help

What is the speed of the first female who cycles less than one time per month (in miles/hour)?

8.1

8.1

Final Check | Save | Show Answer | *You have used 1 of 2 submissions*

(3/3 points)

Check the Variables of Interest

You will be asked in pre-lab to examine the variables of interest and correctly categorize them. For example:

What type of variable is *student*?

Categorical

What type of variable is *cyc_freq*?

Categorical

What type of variable is *distance*?

Numerical

Help

Final Check | Save | Show Answer | *You have used 1 of 2 submissions*

Reflect on the Method

You will be asked a few questions about the method you will be using in lab. Since this is a practice lab, we will ask you about R basics.

In this lab, we will be creating a new dataset that includes just the **student** riders and all of their **variables**. What is the correct terminology for this new dataset?

- (•) data frame ✔
- ( ) index
- ( ) table
- ( ) vector

Final Check | Save | Show Answer

You have used 1 of 2 submissions

Help

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