

UTAustinX: UT.7.10x Foundations of Data Analysis - Part 1



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- Week 1: Introduction to Data

Readings

Reading Check due Mar 15, 2016 at 18:00 UTC

Lecture Videos

Comprehension Check due Mar 15, 2016 at 18:00 UTC

R Tutorial Videos

due Mar 15, 2016 at 18:00 UTC

Pre-Lab

Pre-Lab due Mar 15, 2016 at 18:00 UTC

Lab

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Week 2: Univariate Descriptive Statistics Week 1: Introduction to Data > Pre-Lab > Prepare for the Analysis

Reflect on the Question

Analyze the Data

Draw Conclusions

■ Bookmark

Prepare for the Analysis

In this section of pre-lab, you will be shown the R script needed to run the analysis. You will then be asked a series of questions to help you understand what that code is doing. Note that you will **always** be given the R code that you need to run an analysis. When you get to Lab, you will be able to **copy and modify** this code for your new lab question. Follow the directions below.

Primary Research Question

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

Let's break this analysis into its required steps:

- 1. Find the number of students in the dataset.
- 2. Pull out the student data into a separate dataframe for analysis.
- 3. Make a table to find how often the students ride.
- 4. Find the average distance ridden.

Here is the R script you will use: (Remember that # indicates a comment)

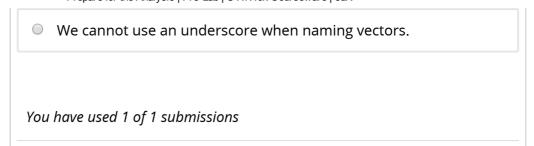
Find the number of students in the dataset table(bike\$student)

Pull out student data into a new dataframe student <-bike[bike\$student==1,]</pre>

- Week 3: Bivariate Distributions
- Week 4:
 Bivariate
 Distributions
 (Categorical
 Data)
- Prepare for the Analysis | Pre-Lab | UT.7.10x Courseware | edX # Find how often the students ride, using the new dataframe table(student\$cyc_freq) # Create a vector for the distance variable distance <-student\$distance # Find average distance ridden mean(distance) (2/2 points) Look at the first line of code: table(bike\$student) 1a. What is the name of the dataframe? bike 1b. What is the name of the variable? student ▼ You have used 1 of 1 submissions (1/1 point) This line creates a new dataframe called "student": student <- bike[bike\$student==1,] 2. What is the role of the comma? It tells R to include all the variables (columns) for the riders that are students. > It tells R to include all the students (rows), beginning with the first one. You have used 1 of 1 submissions (1/1 point) 3. What does "student" refer to in this line of code?: table(student\$cyc_freq)

the original variable called "student"

the new dataframe called "student" You have used 1 of 1 submissions (1 point possible) This line of code creates a vector called "distance:" distance <-student\$distance 4. What does this vector consist of? It is a string of numbers, each of which is the distance ridden by a student in the dataset. It is a matrix of numbers, showing all the distances ridden by each student. You have used 1 of 1 submissions (1/1 point) Suppose we have run the following code to try to create a list of the times. #Read in the dataset and name it bike bike<-BikeData #Create a vector of the times rider times<-bike\$times #Check the contents of our rider times vector rider_times **NULL** 5. What error has caused the vector of rider_times to be empty? (Examine the data set in R for help.) We should have named the vector "time" instead. The variable "times" is not spelled the same way in our datafile. We cannot check the contents of vectors in R.



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