Worksheet 5 - Do chapter 3 of online R tutorial

http://tryr.codeschool.com/

1. How could you make a matrix that is 5 columns wide and 2 rows deep and that

has the value 1 in each cell?

Matrix(1,2,5)

2. How could you make a matrix that is 2 wide and 2 deep and that has the values

10, 14, 20 and 30 in it?

> a<-c(10,14,20,30)

> matrix(a,2,2)

3. What does the dim assignment function do to a vector?

Dim rearranges a linear vector in the dimensions you specify. Therefore, making that linear vector into a matrix with the specified dimensions.

4. This chapter is about matrices. Can you think of data that would come in the form

of a matrix? Remember that in a matrix, all cells have the same datatype.

As we learned in the previous part of the course, any genetic data collected on the expression of genes can be expressed in a matrix form.

5. You learned three commands to plot a matrix. Which are they? Which one do you

think would be most useful?

We learned about contour, persp, and image. I believe that for the purpose of bioinformatics analysis image can be a more useful tool because we could create a heat map and visually identify genes that are expressed differently. So that those with higher expression levels would show a certain color and those with lower expression would show a less intense version of that same color.

Finished!

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Date:10/20/16

Worksheet 6: Do chapter 4 of Try R codeschool

You can do all the exercises in the online tutorial first, then come back to this

worksheet to answer a few questions.

1. You used about 5 functions in this tutorial. Write down the functions and how

they work.

2. Several objects were used in this tutorial. Two of them are vectors - which ones?

Which ones were simple "numeric"s?

3. How would you use the function abline to create a horizontal line that crosses the

y-axis at 10? And a vertical line that crosses the x-axis at 10?

If you want to try this out (which would be great! use Rstudio), you need to first

create a plot with some data, for example:

x<-1:12

y<-1:12

plot(x,y)

Now you can play with the abline() function to add horizontal and vertical lines.

Awesome! Another tutorial done!

Name:

Date:

\*\*Install R and RStudio prior to working on this worksheet\*\*

Worksheet 7 Getting to know Rstudio through videos from Udacity.

If you are doing this at home, you should first install R studio (worksheet 11). If you

are in the computer room, you can start with this worksheet.

Rstudio is installed on the computers, find it in the "dock" and start the program.

Task 1. Watch video on Rstudio basics:

https://www.youtube.com/watch?&v=FDSmlIBy7ko

Task 2. Watch video on changing the settings of Rstudio (up to 45 seconds).

https://www.youtube.com/watch?&v=vLlj5nNj8x4

Task 3. Change the settings for "appearance" and enjoy the new colors.

Task 4. Watch video on getting help for R

https://www.youtube.com/watch?v=ABVX527RODE

Task 5. Go to the quick R website (google quick R or go to

http://www.statmethods.net/). Search for information on bar plots. You'll need it

for the next task.

Task 6. Create a new R script in Rstudio

Write code to make two numeric vectors of equal length, and plot them in a scatter

plot.

Then plot one of them in a barplot. Make the barplot horizontal.

Create a matrix that combines both vectors using rbind(vector1,vector2) and create

a barplot of that matrix.

Save your code in a place on your computer where you can find it back. Submit your

.R code file along with your worksheets through iLearn.

How to save your code in an R script : https://vimeo.com/142568715

Doing great!

Name:

Date:

Worksheet 8: Chapter 5 of Try R codeschool

Chapter 5 is about factors. Nominal data should be stored as factors.

The following are examples of data that should be stored as factors:

1. Gender (male / female / unspecified)

2. Nationality (e.g., US, Canada, Mexico)

3. Type of animal (e.g., dog, fish, cat, horse)

4. Age if range is used (below 40, 40 or older)

The following are examples of data that should not be stored as factors:

1. Age if years or months are used (numeric)

2. Height (numeric)

3. Price (numeric)

Task 1. Come up with at least 4 examples of data that should be stored as factors.

Task 2. Explain all parts of the command

plot(weights, prices, pch=as.integer(types))

On your way to becoming an R ninja!

Name:

Date: