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Us

Carolyn Saund
Msc student, RMPS

Likes: ultimate frisbee, onesies
Dislikes: matlab, IPAs

Shannon McNee
Msc student, RMPS

Likes: podcasts, deadlifting
Dislikes: running out of coffee, staying up past 10pm

Rebecca Lai
PhD Student, Neuroscience and psychology

Likes: baking cakes
Dislikes: eating aforementioned cakes

Anna Henschel
PhD Student, Social Robots & Neuroscience

Likes: books, good music
Dislikes: the patriarchy

Jack Taylor
PhD Student, Neuroscience and Psychology

Likes: chocolate, guitar
Dislikes: non-matching socks

Stephanie Allen

Likes: cats
Dislikes: furballs

Lovisa Sundin
PhD Student, School of Computing Sciences

Likes: drawing, history
Dislikes: not eating sweets, not drinking coffee

Don’t hesitate to reach out!

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Use The Stickies!

¡¡¡Admin!!!

- You are responsible for reimbursing yourself for travel and accommodation costs
  - Contact SGSSS
- All our lessons are here: https://psyteachr.github.io/hack-your-data

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What We're Going to Cover

	Monday	Tuesday	Wednesday
9:45-11:15	**Caro & Shannon** Thinking like a computer & Fun datasets for intro to R environment	**Lisa** Why bother with coding in qual sciences & reproducible workflows	**Lovisa & Anna** Understanding aesthetic mappings
11:30-13:00	**Rebecca & Steph** R Markdown	**Shannon & Anna** Visualizing the headlines	**All** Wrap up
Lunch			
14:00-15:30	**Jack & Steph** Basic tidy data, quantitative data visualizations	**Anna, Jack, & Emily** Tidytext tutorial/RTweet	
15:45-16:45	**Jack & Steph** Qualitative data visualizations	**Rebecca & Steph** R Markdown pt. 2	
Dinner & Social!			

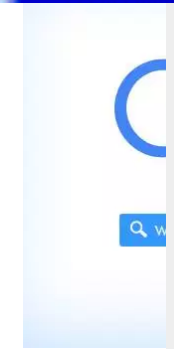
Rules for the Session

1. Don’t be a jerk

2. There are no stupid questions


GOOGLE IT, BABY


BUT DID YOU
GOOGLE IT?




idk, google


NOT
SURE?
GOOGLE
IT!!!!

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```
> split_data <- survey_data %>%
+   filter(elaboration != "") %>%
+   unnest_tokens(word, elaboration)
Error in check_input(x) :
  Input must be a character vector of any length or a list of character
  vectors, each of which has a length of 1.
>
```

r unnest_tokens input must be a character

frequency of values dataframe r

https://github.com/rstudio/cheatsheets/blob/master/data-transformation.pdf

cheat sheet - Google Search

rstudio/**cheat**sheets: RStudio **Cheat Sheet**s - github.com/rstudio/**cheat**sheets/blob/master/data-transformation.p

our Review_Text column is a factor, not a character vector a

convert int to character vector R

```
In max(frec
> ?mutate
>
```

iframe not showing up R app

All Videos News Images Shopping More Setting

About 50,100,000 results (0.52 seconds)

Shiny Iframe not showing any website - Stack Overflow

https://stackoverflow.com/questions/49842460/shiny-iframe-not-showing-any-website

1 answer

15 Apr 2018 - So the problem you are facing is that the site you were referencing to had the

How do I embed tutorial questions from 'learnr' into a full shiny app?

I am trying to embed a tutorial Rmd from the `learnr` package into a full shiny app. However, learnr uses the `shiny_prerendered` runtime, I cannot call it within my app. How do I get an interactive tutorial to run within my shiny app?

I have have three files right now: ui.R, server.R, and tutorial.Rmd.

My tutorial looks like this (one ` removed for formatting)

```
---
title: "my tutorial"
tutorial:
  id: "com.example.tutorials.a-tutorial"
  version: 1.0
output: learnr::tutorial
runtime: shiny_prerendered
---

```{r setup, include=FALSE}
library(learnr)
knitr::opts_chunk$set(echo = FALSE)
```

Exercise Example
```

asked toda
viewed 40 ti
active toda

BLOG
FEATURED
HOT META
18

Buncha questions I've been googling

Outcomes

- Get to know the tools you can use for quantitative (and qualitative!) data analysis
- Become familiar with R and RStudio environment
  - New packages
  - New forms of analysis
  - Use R markdown to create reports and web pages

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Thinking Like A Computer

Hack Your Data Beautiful Workshop

Carolyn Saund

15 April 2019

Quick poll….

- Who has coded before (in any language)?
- Who has used R before?
- Who has a specific study in mind they might want to use these techniques with?
- Who is anxious or nervous about learning to code?

What a Computer Does

- Converts programs from instructions we write to instructions the CPU can understand
  - Takes things that are easy for us to write, expresses them in binary (compiled)
- CPU carries out simple operations (like, really simple.)
- Essentially a big calculator
  - That works really fast. Circa 2016, 3b calculations per second.

What is a “Program?”

- An **algorithm** is a set of detailed, exact instructions, to carry out some task or solve some problem.
- A **computer program** is the expression of an algorithm in a language a computer can understand.
- A high level **programming language** is something that is used to implement an algorithm.
  - supposed to be easy for humans to understand
- **Functions** are basically mini-programs.

What is a “Programming Language?”

- A way of giving written instructions to the computer
- Many different programming languages
  - Java, C, C++, Scheme, Haskell, Visual Basic, Perl, Tcl/Tk, Pascal, Basic, Lisp, Prolog, Cobol, C#, Smalltalk, Eiffel, Fortran, Ada, Mathematica, LabView, Scratch, Bash
  - Researchers often use **R, MatLab, Python**
- Programming languages are divided into many different types
  - Object Oriented, Procedural, Functional, Graphical...
- **All this shows is there are many different ways to solve a problem**

Programming as a Recipe

1. Heat oven to 180º
2. Mix eggs, sugar, butter, vanilla
3. Mix flour, baking soda, salt
4. Mix two mixtures together
5. Stir in chocolate chips
6. Spread into pan
7. Bake 9 minutes

Programming as a Recipe: Functions

1. **Heat** oven to 180º
2. **Mix** eggs, sugar, butter, vanilla
3. **Mix** flour, baking soda, salt
4. **Mix** two mixtures together
5. **Stir** in chocolate chips
6. **Spread** into pan
7. **Bake** 9 minutes

Programming as a Recipe: Parameters

1. Heat oven to **180º**
2. Mix **eggs, sugar, butter, vanilla**
3. Mix **flour, baking soda, salt**
4. Mix **two mixtures** together
5. Stir in **chocolate chips**
6. Spread into **pan**
7. Bake **9 minutes**

Programming as a Recipe: The Computer Is Dumb

1. Heat oven to 180º
2. Mix eggs, sugar, butter, vanilla
3. Mix flour, baking soda, salt
4. Mix two mixtures together
5. Stir in chocolate chips
6. Spread into pan
7. Bake 9 minutes

(8. Take out of oven

9. Remove from pan

10. Cool on rack

11. Clean up)

Programming as a Recipe: Comments

1. Heat oven to 180º
2. Mix eggs, sugar, butter, vanilla
3. Mix flour, baking soda, salt
4. Mix two mixtures together
5. Stir in chocolate chips
6. Spread into pan
7. Bake 9 minutes

(8. Take out of oven

9. Remove from pan

10. Cool on rack

11. Clean up)

Actually 170 works better in our oven

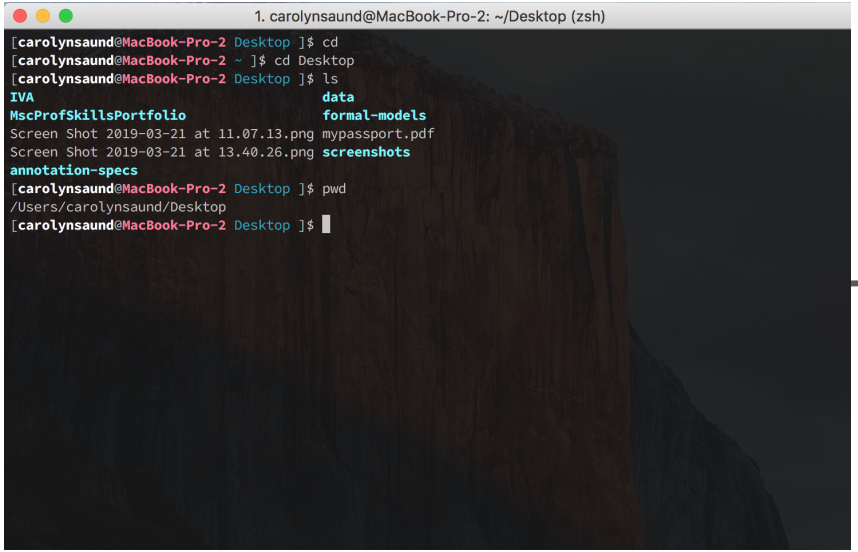
Do not overbeat!

Add peanuts!?

Why Program?

- Programming is just an incredibly powerful tool to solve problems
- Promotes sound research practices
  - Reproducibility
  - Organization
- Allows incredible flexibility and independence in research

File Structure



Other things to keep in mind

- It’s just code, it can’t hurt you, and you can’t hurt it
- You cannot break the computer
- Try it, see if it works

What to do when see red text

1. READ IT!!!
2. Check your code
3. Google the error
4. Ask someone else to check your code (this can be one of us!)
5. Check your code again

Let's Go to R

(https://psyteachr.github.io/hack-your-data/r_instructions.html)