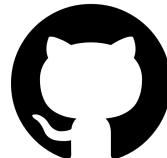


GitHub & RStudio Integration

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GitHub

The Basics

- Git is a version control system
 - Track changes, share code, combine code
- GitHub is a website that centralizes storing and sharing code
 - No more emailing code
 - No more worrying about multiple people working simultaneously and creating conflicts
 - No more losing code if your computer explodes!

RStudio The RStudio logo icon, which is a blue circle with a white letter 'R' inside.

- Interactive developer environment for R
 - Provides a GUI to make some aspects of coding more point + click
- Allows you to organize code into Projects
 - Switching projects automatically switches your working directory
- Git integration can be done with GUI instead of working from the shell
 - Also provides access to shell if you prefer

Why Version Control?



Why Version Control?

Katy Hosbein committed 2 days ago

1 parent 6ff90e4 commit 130da44ef136358ba620a8a702d2a316f7720076

Showing 1 changed file with 21 additions and 11 deletions.

Unified Split

32 Analysis/FocusGroup.R View

#	Line	Code	#	Line	Code
	6	@@ -6,12 +6,13 @@ require(XLConnect)		6	
	7	##pulling out and grouping students for focus groups		7	##pulling out and grouping students for focus groups
	8			8	
	9	-HHMIPre<-read_spss("Data/HHMI_Pre_Fall2016_10.17.16.10AM.sav") ## 1454 responses as of 10/17/16		9	+HHMIPre<-read_spss("Data/HHMI_Pre_Fall2016_10.20.16.sav") ## 1454 responses as of 10/17/16
	10			10	+
	11	colnames(HHMIPre) ##what are the available column names in this file		11	
	12			12	colnames(HHMIPre) ##what are the available column names in this file
	13	##rename columns		13	
	14	-HHMIPreMod<-select(HHMIPre, Name_3.0, Name_4.0, Focus, ODIN, Course, Age, Gender_1, Gender_2, Gender_3, Gender_3_TEXT)		15	+HHMIPreMod<-select(HHMIPre, Name_3_TEXT, Name_4_TEXT, Focus, ODIN, Course, Age, Gender_1, Gender_2, Gender_3, Gender_3_TEXT)
	15	colnames(HHMIPreMod)<-c("First", "Last", "Focus", "ODIN", "Course", "Age", "Female", "Male", "Other", "OtherNotes")		16	colnames(HHMIPreMod)<-c("First", "Last", "Focus", "ODIN", "Course", "Age", "Female", "Male", "Other", "OtherNotes")
	16			17	
	17			18	



Getting Set Up

- Create a GitHub account online
 - <https://education.github.com/>
 - Unlimited free private repositories for your code

The screenshot shows the GitHub Education homepage with a dark green background. On the left, there's a white chalk drawing of laboratory glassware: a round-bottom flask on a stand with a condenser tube leading to an Erlenmeyer flask. In the center, the text "TEACH AND LEARN BETTER, TOGETHER" is written in a white, hand-drawn style. Below this text is a green button with white text that says "Request a discount". On the right side, there's a cartoon illustration of the GitHub logo character, a black cat wearing safety goggles and a lab coat, holding a test tube. At the bottom of the page, there's a thin red horizontal bar. Above this bar, the text "STUDENT DEVELOPER PACK" is centered. At the very top of the page, there's a navigation bar with links: "Stories", "Events", "Student pack", "Classroom", "Community", and "Contact us".

Getting Set Up

- Create a GitHub account online
- Install Git on your computer
 - <https://git-scm.com/>

 **git** --local-branching-on-the-cheap Search entire site...

Git is a **free and open source** distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient **staging areas**, and **multiple workflows**.

 Learn Git in your browser for free with [Try Git](#).



Getting Set Up

- Create a GitHub account online
- Install Git on your computer
- Configure RStudio to work with Git

The image shows two side-by-side screenshots illustrating the configuration of RStudio for Git integration.

RStudio Options Dialog (Left):

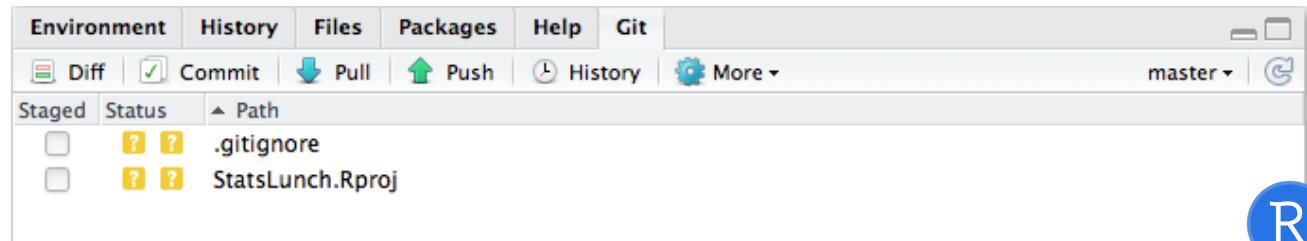
- The "General" tab is selected in the sidebar.
- The "SSH RSA Key:" field contains the value `~/.ssh/id_rsa`, which is highlighted with a red box.
- A link "[? Using Version Control with RStudio](#)" is also highlighted with a red box.
- Other visible fields include "Git executable" set to `/usr/bin/git` and "SVN executable" set to `/usr/bin/svn`.

Github.com Settings (Right):

- The URL <https://github.com/settings/keys> is shown in the browser header.
- The "Title" field is empty.
- The "Key" text area contains the placeholder text: "Begins with 'ssh-rsa', 'ssh-dss', 'ssh-ed25519', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp521'".
- A green "Add SSH key" button is present.
- At the bottom, a note says: "Check out our guide to generating SSH keys or troubleshoot common SSH Problems."

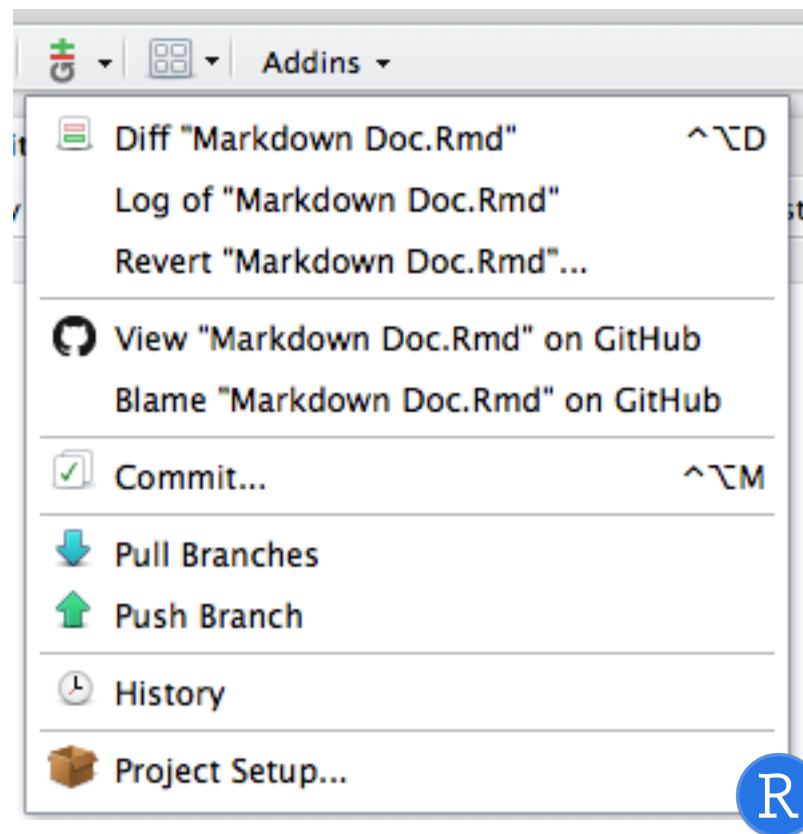
Git in RStudio

- Git Pane



R

- Git Options

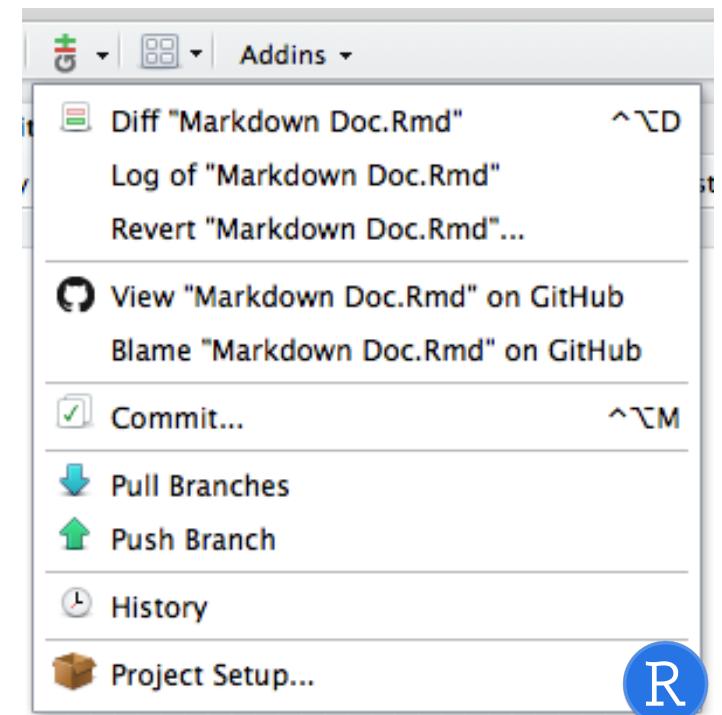


R

Speaking the language of Git

<https://help.github.com/articles/github-glossary/>

- **Repo** – short for repository, the folder where your code lives
- **Commit** – like a save, but creates a record of the change at that point
- **Push** – send local changes to GitHub
- **Pull** – fetch changes from GitHub and merge them locally
- **Branch** – a copy of a repository that can be edited without changing the master branch
- **Fork** – like a branch but with a different owner of the master
- **Pull Request** – a request to merge branches/forks



My workflow

1. Create a new repo in GitHub (online)

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner Repository name

 RegisBK / StatsLunch 

Great repository names are short and memorable. Need inspiration? How about [reimagined-memory](#).

Description (optional)

 **Public**
Anyone can see this repository. You choose who can commit.

 **Private**
You choose who can see and commit to this repository.

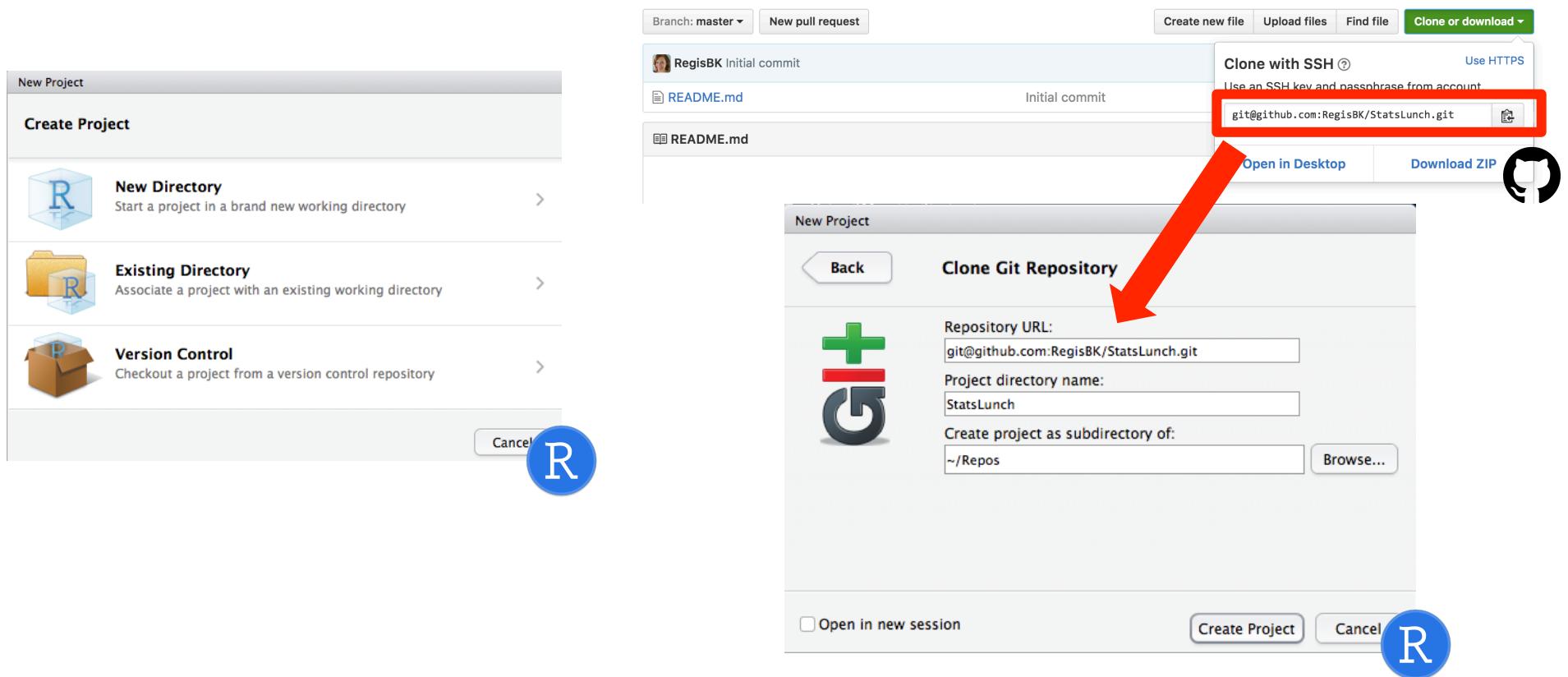
Initialize this repository with a README
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **None** Add a license: **None** 

Create repository 

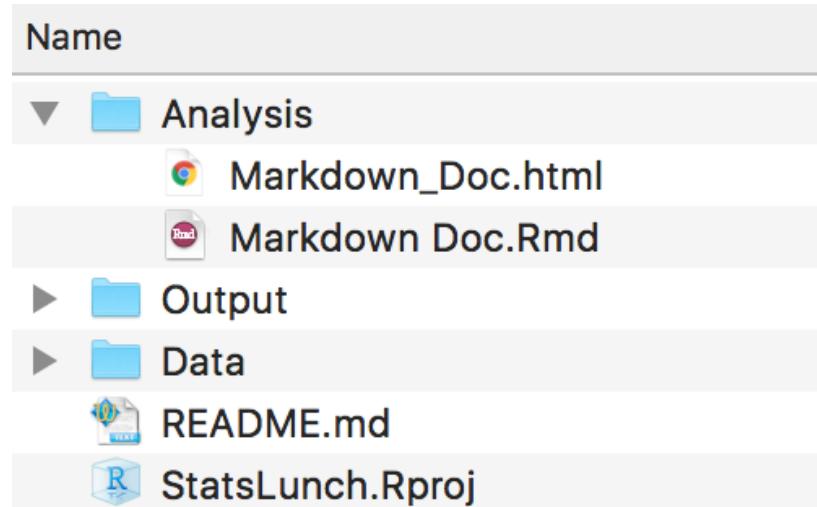
My workflow

1. Create a new repo in GitHub (online)
2. In RStudio, create a new project using version control
 - This will clone the GitHub repo onto your computer, creating a new folder



My workflow

1. Create a new repo in GitHub (online)
2. In RStudio, create a new project using version control
3. Organize your project
 - I create Data, Analysis, and Output folders
4. Code as normal!

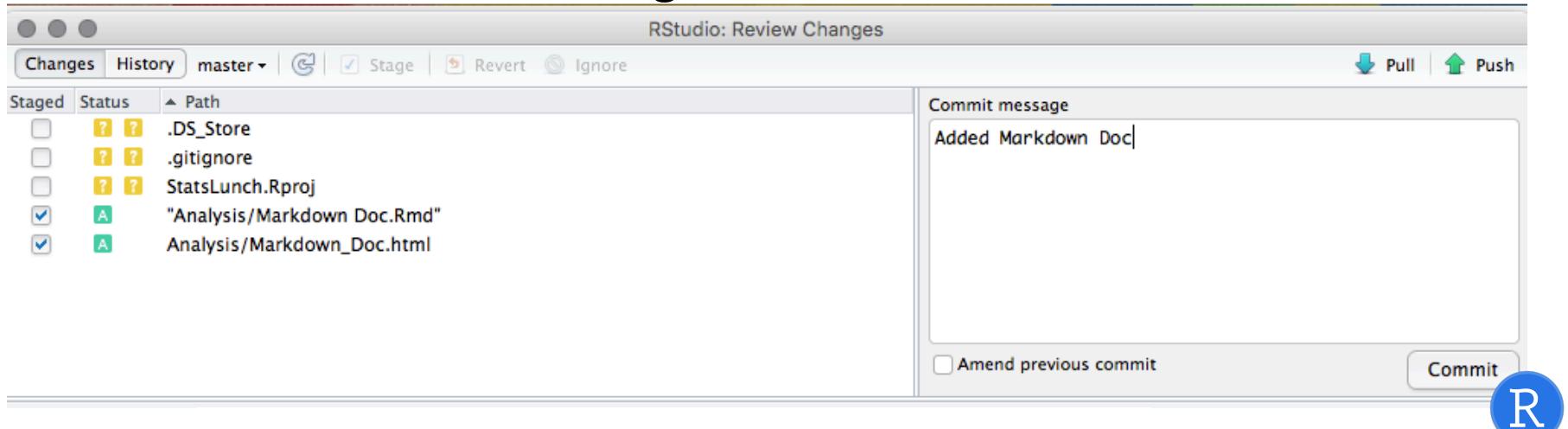


My workflow

1. Create a new repo in GitHub (online)
2. In RStudio, create a new project using version control
 - This will clone the GitHub repo onto your computer, creating a new folder
3. Organize your project
 - I create Data, Analysis, and Output folders
4. Code as normal!
5. Commit changes + push to GitHub
6. Repeat steps 4 & 5
 - If someone else is working on the project, and I've accepted their edits on GitHub, I'll do a pull request before I start work the next time

Git in RStudio

- Commit
 - Select files with changes (I keep only a local copy of data)
 - Add a commit message



M, Modified. You've changed the contents of the file.

?, Untracked. You've added a new file that Git hasn't seen before.

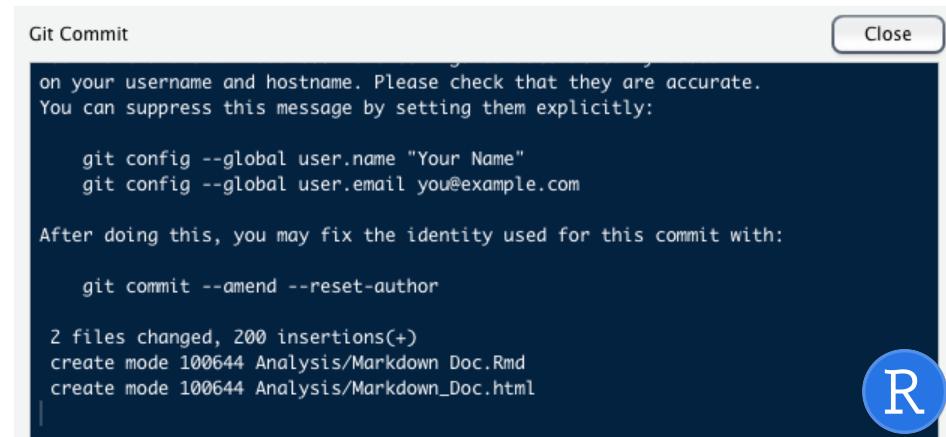
D, Deleted. You've deleted a file.

Added: **A**: after staging an untracked file, Git now knows that you want to add it to the repo.

Renamed: **R**: If you rename a file, Git initially sees it as a deletion and addition. Once you stage both changes, Git will recognise that it's a rename.

Git in RStudio

- Commit
 - Select files with changes (I keep only a local copy of data)
 - Add a commit message
 - Commit confirmation



- Then push

The screenshot shows the GitHub repository page for 'RegisBK / StatsLunch'. The repository is private. At the top, there are links for Code, Issues (0), Pull requests (0), Projects (0), Wiki, Pulse, Graphs, and Settings. Below that, there's a summary bar showing 2 commits, 1 branch, 0 releases, and 1 contributor.

The main area displays the commit history:

- Regis Komperda Added Markdown Doc (Latest commit 3d59443 22 seconds ago)
- Analysis Added Markdown Doc (21 seconds ago)
- README.md Initial commit (8 minutes ago)

At the bottom left, there's a terminal window showing the git push command:

```
To git@github.com:RegisBK/StatsLunch.git  
6562d0f..3d59443 master -> master
```

Collaborating with GitHub

- Add collaborators to your project in the project settings (they must have a GitHub account)

The screenshot shows the GitHub repository settings page for 'RegisBK / StatsLunch'. The repository is private, indicated by a yellow 'Private' button. The top navigation bar includes links for Code, Issues (0), Pull requests (0), Projects (0), Wiki, Pulse, Graphs, and Settings (which is highlighted with an orange border). On the left, a sidebar menu lists Options, Collaborators (selected and highlighted with an orange border), Branches, Webhooks, Integrations & services, and Deploy keys. The main content area is titled 'Collaborators' and contains a message: 'This repository doesn't have any collaborators yet. Use the form below to add a collaborator.' Below this is a search bar labeled 'Search by username, full name or email address' with a note: 'You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.' At the bottom right of the search bar is a 'Add collaborator' button and the GitHub logo.

Collaborating with GitHub

- Add collaborators to your project in the project settings (they must have a GitHub account)
- Collaborators can fork your master repo, then their edits can be merged back into the master with a pull request

The screenshot shows a GitHub repository page for 'katyhosbein / HHMI-Survey'. A red box highlights the 'forked from RegisBK/HHMI-Survey' link in the top navigation bar. Another red box highlights the message 'This branch is 1 commit ahead of RegisBK:master.' at the bottom of the page.

katyhosbein / HHMI-Survey Private
forked from RegisBK/HHMI-Survey

Unwatch 1 Star 0 Fork 1

Code Pull requests 0 Projects 0 Wiki Pulse Graphs

No description or website provided.

53 commits 1 branch 0 releases 2 contributors

Branch: master New pull request Create new file Upload files Find file Clone or download

This branch is 1 commit ahead of RegisBK:master.

Pull request Compare

katyhosbein committed on GitHub Merge pull request #4 from RegisBK/master ... Latest commit 9c8ed5c 19 hours ago

Collaborating with GitHub

- All changes can be reviewed, commented on, and reverted

Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also [compare across forks](#).

base fork: RegisBK/HHMI-Survey ▾ base: master ▾ ... head fork: katyhosbein/HHMI-Survey ▾ compare: master ▾

✓ Able to merge. These branches can be automatically merged.

Create pull request Discuss and review the changes in this comparison with others. [?](#)

1 commit 0 files changed 0 commit comments 1 contributor

Commits on Nov 01, 2016

katyhosbein Merge pull request #4 from RegisBK/master ... 9c8ed5c

Showing 0 changed files with 0 additions and 0 deletions.

Unified Split 

Collaborating with GitHub

- All changes can be reviewed, commented on, and reverted

Merge pull request #4 from RegisBK/master #6

Open RegisBK wants to merge 1 commit into `RegisBK:master` from `katyhosbein:master`

Conversation 0 Commits 1 Files changed 0

RegisBK commented just now
updating on 11/1
 Merge pull request #4 from RegisBK/master ...

Add more commits by pushing to the `master` branch on `katyhosbein/HHMI-Survey`.

This branch has no conflicts with the base branch
Merging can be performed automatically.

Merge pull request You can also [open this in GitHub Desktop](#) or view [command line inst](#)

Write Preview

Merge pull request #4 from RegisBK/master #6

Merged RegisBK merged 1 commit into `RegisBK:master` from `katyhosbein:master` just now

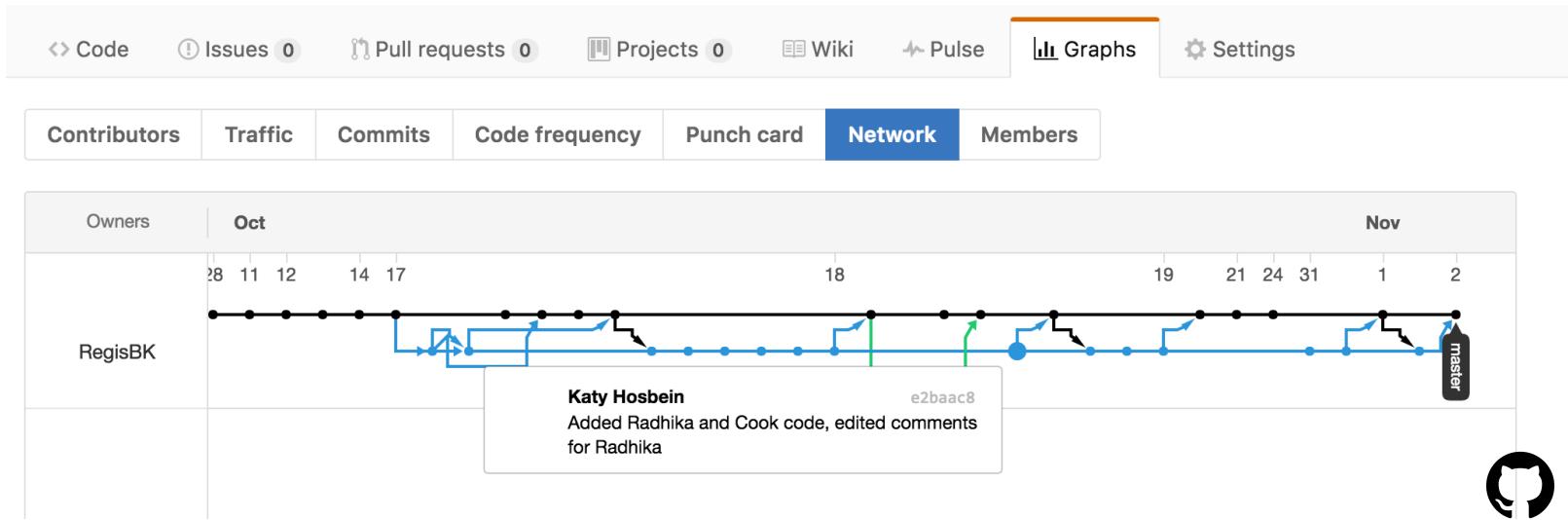
Conversation 0 Commits 1 Files changed 0

RegisBK commented just now
updating on 11/1
 Merge pull request #4 from RegisBK/master ... 9c8ed5c

RegisBK merged commit `2baee23` into `RegisBK:master` just now **Revert**

Avoid bugs by automatically running your tests.
Continuous integration can help catch bugs by running your tests automatically.
Merge your code with confidence using one of our continuous integration providers. **Learn more**

Reviewing Version Histories



Added Radhika and Cook code, edited comments for Radhika

master (#3)

Katy Hosbein committed 15 days ago

1 parent 209118d commit e2baac8991f12fa1bb5dc842a82d05ec6811763

Browse files

Showing 1 changed file with 126 additions and 0 deletions.

Unified Split

126 Analysis/ResponseRostersF16Pre.R

View

Line Number	Code
307	@@ -307,5 +307,131 @@ writeWorksheetToFile("Output/Peyton CH 223 Fall Pre Survey Responses.xlsx", Peyt
308	
309	
310	+## Reddy BI 221_1 #####
311	+Reddy.Roster<-subset(Rosters, CRN==10399) ## 318, matches official enrollment

A GitHub logo is visible in the bottom right corner.

Reviewing Version Histories

RStudio: Review Changes

Changes History master ▾ (all commits) | ↗

Search Pull

Subject	Author	Date	SHA
HEAD → refs/heads/master origin/master origin/HEAD Merge pull request #6 from kat RegisBK <RegisBK@users.noreply.github.com>	RegisBK <RegisBK@users.noreply.github.com>	2016-11-02	2baee23c
Merge pull request #4 from RegisBK/master	katyhosbein <khosbein@pdx.edu>	2016-11-02	9c8ed5c5
Merge pull request #5 from katyhosbein/master	RegisBK <RegisBK@users.noreply.github.com>	2016-11-02	5aa9f33d
Added Barbera CH221_1 code with comments	Katy Hosbein <Katy Hosbein>	2016-11-01	befc813c
edited to include Sheagley CH 221_2 yes to focus group and export to a spreadsheet	Katy Hosbein <Katy Hosbein>	2016-10-31	130da44e
Added code for cleaning and preliminary descriptives + uploaded deidentified dataset	Regis Komperda <regis@che-ls-5s020-rl>	2016-10-25	53868996
Edits to roster code to ID students who aren't being matched to rosters + updates to	Regis Komperda <regis@che-ls-5s020-rl>	2016-10-21	7bb5e2de
Merge pull request #4 from katyhosbein/master	RegisBK <RegisBK@users.noreply.github.com>	2016-10-19	9fa79dd5
added Radhika BI 201 and Sheagley to the code and ran them	Katy Hosbein <Katy Hosbein>	2016-10-19	6ff90e4f
added comments to Cook code, fixed BI 221 to BI 211	Katy Hosbein <Katy Hosbein>	2016-10-18	53c2aebe
Merge pull request #3 from RegisBK/master	katyhosbein <khosbein@pdx.edu>	2016-10-18	fb2e8811
Merge pull request #3 from katyhosbein/master	katyhosbein <khosbein@pdx.edu>	2016-10-18	f6501d4f
Added Radhika and Cook code, edited comments for Radhika	Katy Hosbein <Katy Hosbein>	2016-10-18	e2baac89
Merge branch 'master' of github.com:RegisBK/HHMI-Survey	Regis Komperda <regis@che-ls-5s020-rl>	2016-10-18	0f8e3b5e
Small edits to Peyton code	Regis Komperda <regis@che-ls-5s020-rl>	2016-10-18	ed737a2e
Delete Fall 2016 HHMI Course Rosters.csv	RegisBK <RegisBK@users.noreply.github.com>	2016-10-18	73864446
Merge pull request #2 from katyhosbein/master	RegisBK <RegisBK@users.noreply.github.com>	2016-10-18	ac0eed0e
Ran and finished commenting on Peyton's portion of the code	Katy Hosbein <Katy Hosbein>	2016-10-18	209118d1
Loaded startup code	Katy Hosbein <Katy Hosbein>	2016-10-17	dc8b9946

Commits 1-54 of 54

SHA e2baac89
Author Katy Hosbein <Katy Hosbein>
Date 2016-10-18 20:36
Subject Added Radhika and Cook code, edited comments for Radhika
Parent 209118d1

Analysis/ResponseRostersF16Pre.R

Analysis/ResponseRostersF16Pre.R View file @ e2baac89

```
@@ -307,5 +307,131 @@ writeWorksheetToFile("Output/Peyton CH 223 Fall Pre Survey Responses.xlsx", Peyt
307 307
308 308
309 309
310 ## Reddy BI 221_1 ####
311 Reddy.Roster<-subset(Rosters, CRN==10399) ## 318, matches official enrollment numbers as of 10/14/16
```

R

Resources

- Rstudio (<https://www.rstudio.com/>)
 - Help with Git
 - <https://support.rstudio.com/hc/en-us/articles/200532077-Version-Control-with-Git-and-SVN>
- FREE GitHub for Education account
 - <https://education.github.com/>
- Git (<https://git-scm.com/>)
- Hadley Wickham's description of setting up Git/GitHub in Rstudio
 - <http://r-pkgs.had.co.nz/git.html>
- The R class – R programming for biologists
 - <http://r-bio.github.io/intro-git-rstudio/>

Blame

HHMI-Survey / Analysis / ResponseRostersF16Pre.R



Newer Older

100644 | 630 lines (403 sloc) | 30.8 KB

Raw

Normal view

History

Added code for creating roster... 28f1190 Regis Komperda authored 19 days ago	1 2 3 4	## Importing Fall 2016 Qualtrics data and merging with rosters from DataMASTER ## loading required packages require(haven)
Updates to roster code to form... e56a8d5 Regis Komperda authored 16 days ago	5	require(sjmisc)
Added code for creating roster... 28f1190 Regis Komperda authored 19 days ago	6 7 8 9 10 11 12 13 14 15	require(dplyr) require(XLConnect) ## In DataMASTER, pull report for internal use only (otherwise students with confident ## Download as Excel file. In Excel, delete all columns except for CRN, Student_Last_N ## ID, and email. Also delete header row 1. ## At this point, it would be good to update the file in the HHMI drive with the actual ## "Participating Course Information and Survey Numbers.xlsx"
Edits to roster code to ID stud... 7bb5e2d Regis Komperda authored 12 days ago	16	Rosters<-read.csv("Data/Fall2016HHMICourseRosters.csv") ## Rosters as of 10/14 have 17
Added code for creating roster... 28f1190 Regis Komperda authored 19 days ago	17 18 19 20 21	## Rename columns colnames(Rosters)<-c("CRN", "Last", "First", "MI", "PSU_ID", "email") ## Turn email into ODIN by stripping @pdx.edu
fixed typo in line 22 e434588 Katy Hosbein authored 16 days ago	22	Rosters\$ODIN<-gsub("@.*", "", Rosters\$email) # Replace @ and everything after (.) with



GitHub for Education

Teach more effectively



Distribute starter code

GitHub [Repositories](#) allow you to maintain and distribute starter code for your assignments. Git makes it easy for your students to pull in any updates you make, even after they've started working on their solution.



Give students feedback

[Pull Requests](#) are a great way to give students feedback on their code. Give suggestions for improvement and observe how they adapt their code based on your feedback.



Provide automated tests

Trigger an automated build each time new commits are pushed to GitHub using [WebHooks](#). When the automated tests finish, you can display the passing or failing status along with the build output using the [Commit Status API](#).