Intro to RStudio and GitHub

Paul de Barros

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What are we going to do today?

- Talk about what R, RStudio, Git, and GitHub are.
- Take a look at the RStudio interface.
- Look at some Git vocabulary
- Get you set up and ready to go.

What are these things?

- **R**
  - a programming language and software environment for statistical computing and graphics
  - The language in which you write code
- **RStudio**
  - an integrated development environment (IDE) for R
  - The program in which you write your code
- **Git**
  - a version control system that is used for software development
  - The program that tracks the history a project and enables collaboration
- **GitHub**
  - a web-based Git repository hosting service
  - The website where you share your code, find other people's code, and collaborate on projects

The RStudio Interface

Edit what is shown in each pane in Tools -> Global Options -> Pane Layout
Learn more at wiki.mobilizingcs.org/rstudio/panes

Git Vocabulary

- **Repository** – the stored project
- **Commit** – like save, but more permanent, like a Windows restore point. The state of the project is stored forever.
- **Stage** – to mark a file for committing
- **Branch** – offshoot of a project, like a sandbox, so you can make changes before deciding to keep or discard them
- **Merge** – to incorporate changes from a branch into the project
- **Fork** –take someone else's project off in your own direction
- **Clone** – make a copy, e.g. pull a GitHub repository to your comp
- **Push** – send your recently committed changes to an external repository, e.g. GitHub
- **Pull** – to get recently committed changes (or just a new copy of a project) from an external repository, e.g. GitHub

http://help.fogcreek.com/9916/git-related-vocabulary

And now, the steps:

1. Install R
2. Install RStudio
3. Install Git
4. Get RStudio to use Git
5. Sign up for a GitHub account
6. Provide RStudio with your GitHub credentials
7. Pull a repository (checkout a project)
8. Add the necessary packages
9. Install Rtools (or Xcode if you have a Mac)
10. Give the UIASReader a test drive

RStudio Keyboard Shortcuts

	Description	Windows & Linux	Mac
Console	Navigate command history	Up/Down	Up/Down
	Popup command history	Ctrl+Up	Command+Up
	Interrupt currently executing command	Esc	Esc
Source	New document (except on Chrome/Windows)	Ctrl+Shift+N	Command+Shift+N
	Open document	Ctrl+O	Command+O
	Save active document	Ctrl+S	Command+S
	Run current line/selection	Ctrl+Enter	Command+Enter
	Run current line/selection (retain cursor position)	Alt+Enter	Option+Enter
	Navigate back	Ctrl+F9	Cmd+F9
	Navigate forward	Ctrl+F10	Cmd+F10
	Reindent lines	Ctrl+I	Command+I
	Comment/uncomment current line/selection	Ctrl+Shift+C	Command+Shift+C
	Find and Replace	Ctrl+F	Command+F
	Check Spelling	F7	F7
Both	Undo	Ctrl+Z	Command+Z
	Redo	Ctrl+Shift+Z	Command+Shift+Z
	Cut	Ctrl+X	Command+X
	Copy	Ctrl+C	Command+C
	Paste	Ctrl+V	Command+V
	Select All	Ctrl+A	Command+A
	Jump to Word	Ctrl+Left/Right	Option+Left/Right
	Jump to Start/End	Ctrl+Home/End or Ctrl+Up/Down	Command+Home/End or Command+Up/Down
	Delete Line	Ctrl+D	Command+D
	Show help for function at cursor	F1	F1
	Show source code for function at cursor	F2	F2
	Attempt completion	Tab or Ctrl+Space	Tab or Command+Space

https://support.rstudio.com/hc/en-us/articles/200711853-Keyboard-Shortcuts

Things to learn

If you want to…	You should learn about…
Work on things and keep them organized	Projects in RStudio
Share things you've created	Putting an existing repository on GitHub
Customize/alter someone else's work	Forking on GitHub
Experimenting with an idea, taking a project off in a new direction	Branching and merging in Git
Collaborating on a project	Organizations in GitHub
Contributing to a project	Pull requests in GitHub
Be a part of a community of R users	The Albany R Users Group Meetup
Making an interface that works in a browser	R Shiny
Putting a Shiny app on the web	Shinyapps.io
Get answers to questions about programming	StackOverflow.com
Report bugs or request features	The Issues feature on GitHub
Read about goings-on in the R community	The R-Bloggers mailing list
Make really cool graphics	R ggplot2