

rbtl - Research Beyond the Lab

Version control and more tools

Lars Schöbitz

2022-03-28

Today

1. Assignment grading and conversion
2. What is Version Control?
3. RStudio Cloud & RStudio IDE

Assignments & Grades

Due dates: Assignments 1, 2, and 3

Full points for assignment 1, 2, and 3 if submitted by:

15th March

Submission complete? Full points?

- If you haven't heard from me by Wednesday, then you have successfully submitted your assignment.

Grade conversion

grade	points
6.00	100
5.75	95
5.50	90
5.25	85
5.00	80
4.75	75
4.50	70
4.25	60
4.00	50
3.50	40
3.00	30
2.50	20
2.00	10
1.00	0

Grading scheme and conversion details in syllabus on course website

What is Version Control?

Version Control

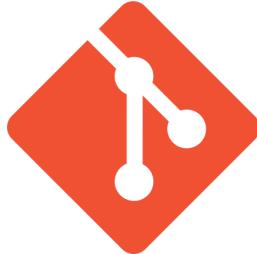
A way to share files with others, so they can:

- download
- re-use
- contribute

You can view the history of files, and jump back in time to any point.

Why is it useful?

Git and GitHub



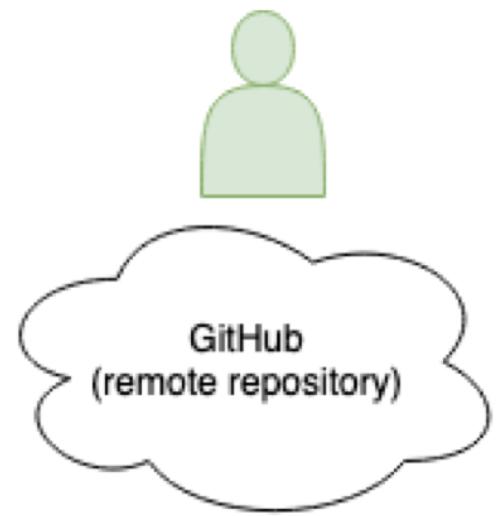
- Git is a software for version control
- Released in 2005
- Popular among programmers collaboratively developing code
- Tracks changes in a set of files (directory/folder/repository)

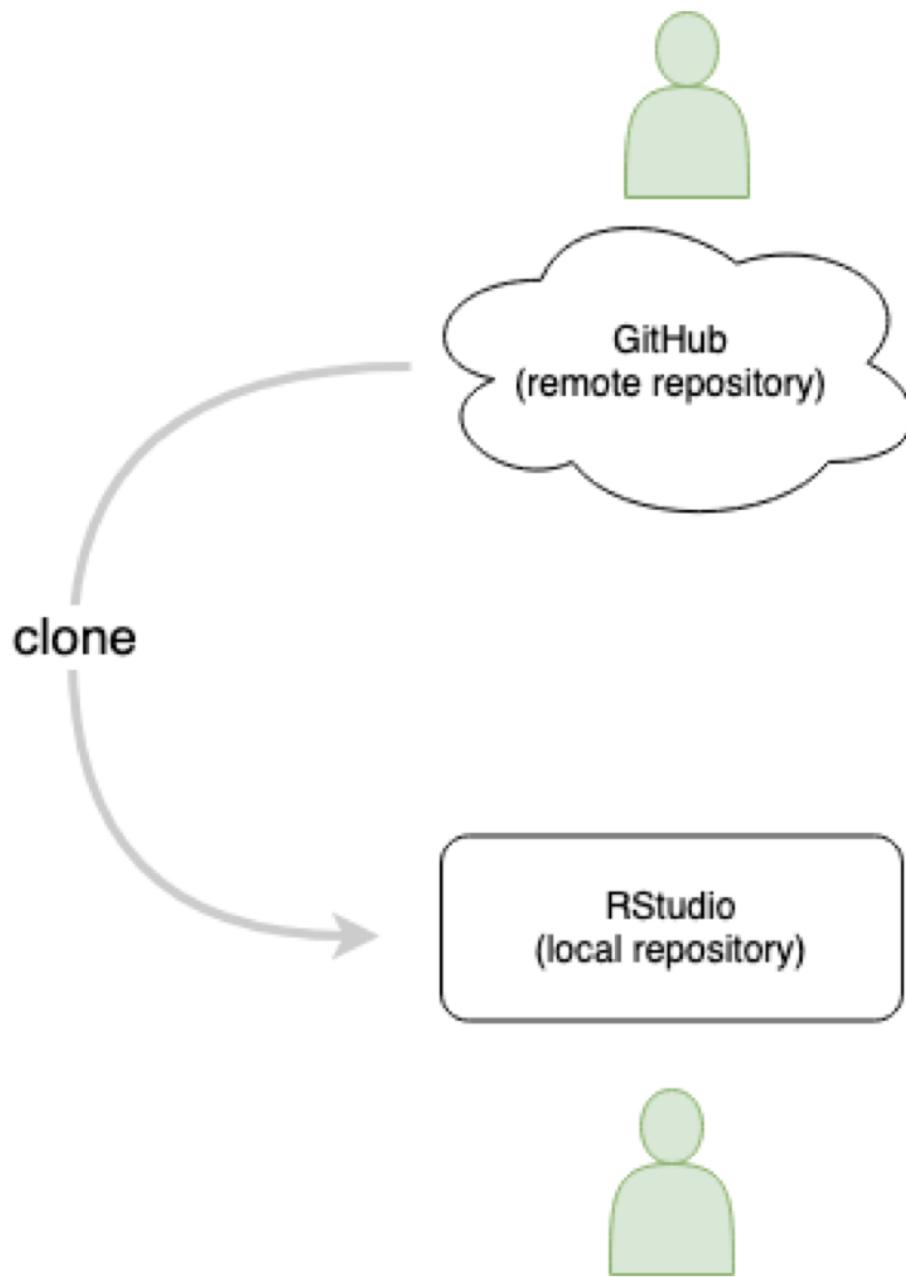


- GitHub is a hosting platform for version control using Git
- Launched in 2008, acquired by Microsoft in 2018, Microsoft for US\$ 7.5 billion
- 73 million Users ([February, 2022](#))
- Facebook for Software Developers

Homework Assignment 2

Version Control - Terminology

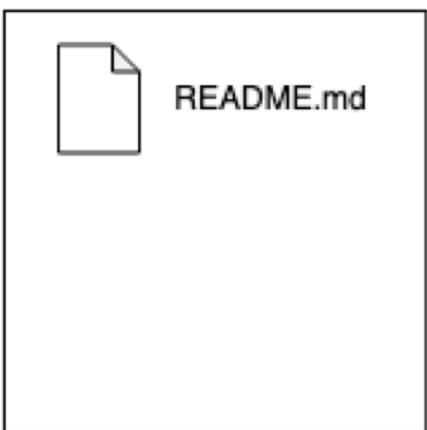


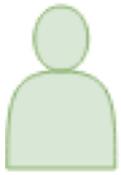




Create README.md

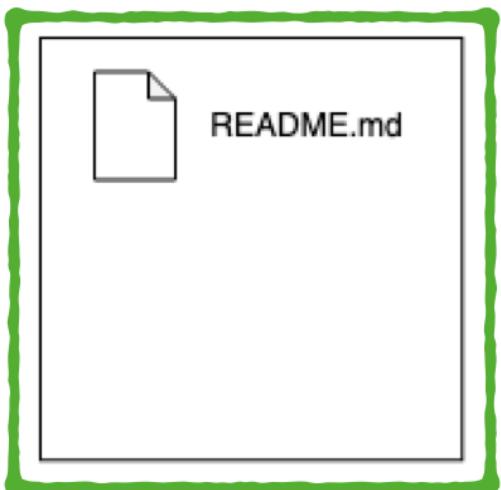
75aa637





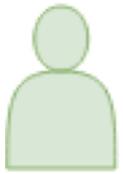
Create README.md

75aa637



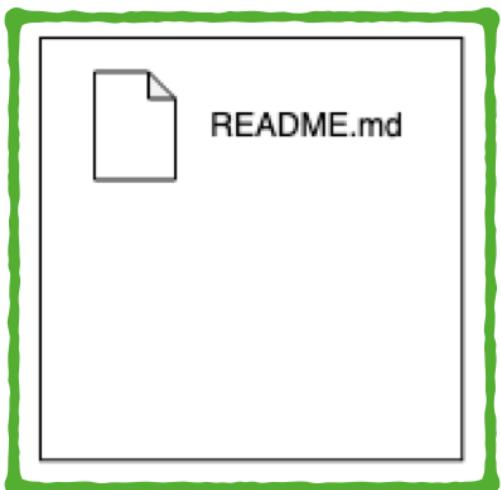
Repo(sitory)

Commit
message



Create README.md

75aa637



Repo(sitory)

Commit
message



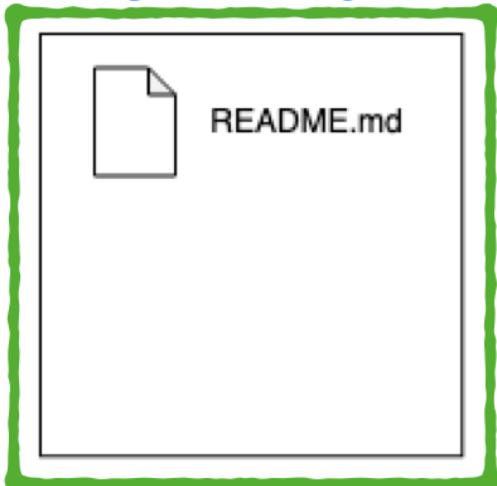
Create README.md

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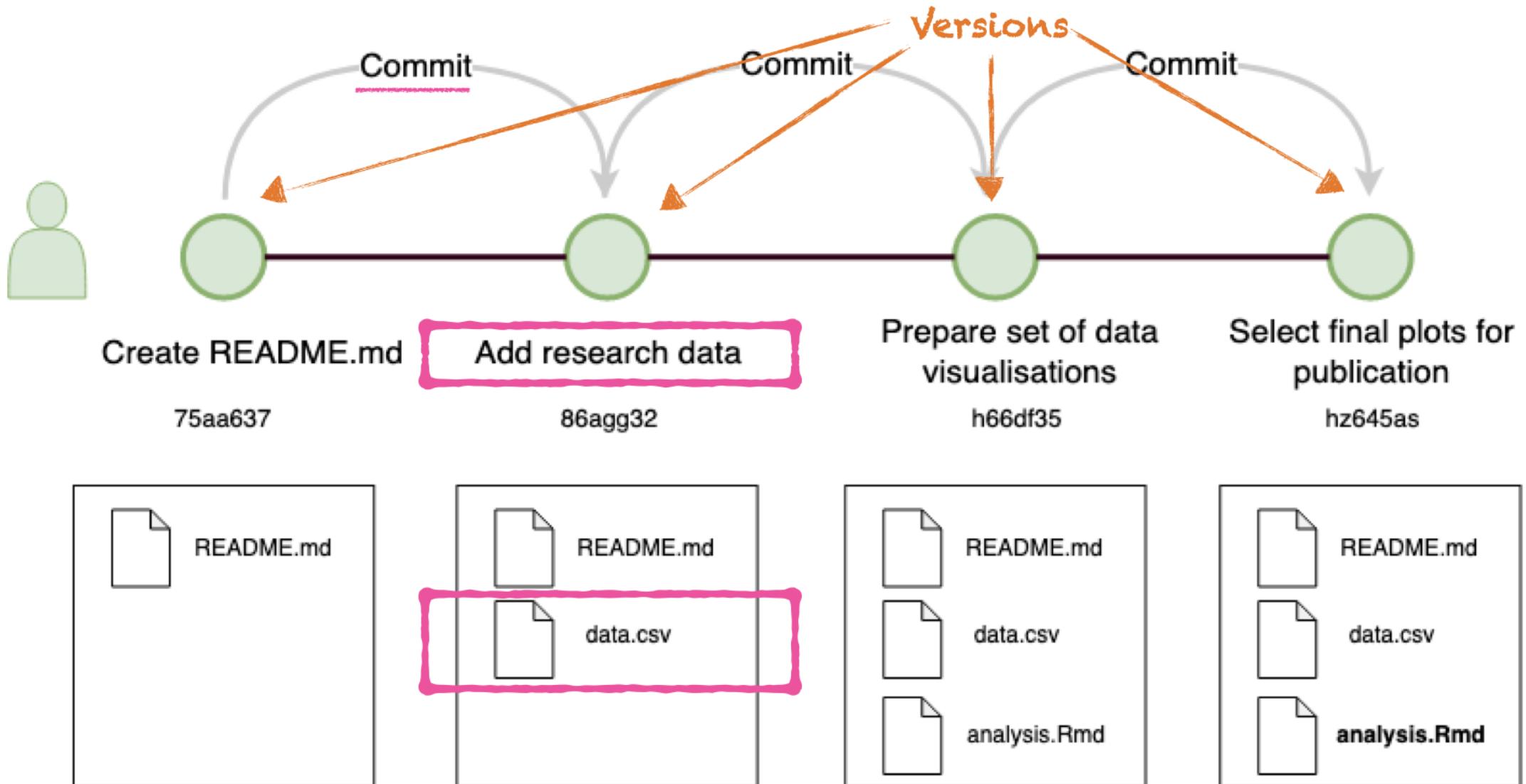
SHA-1 hash

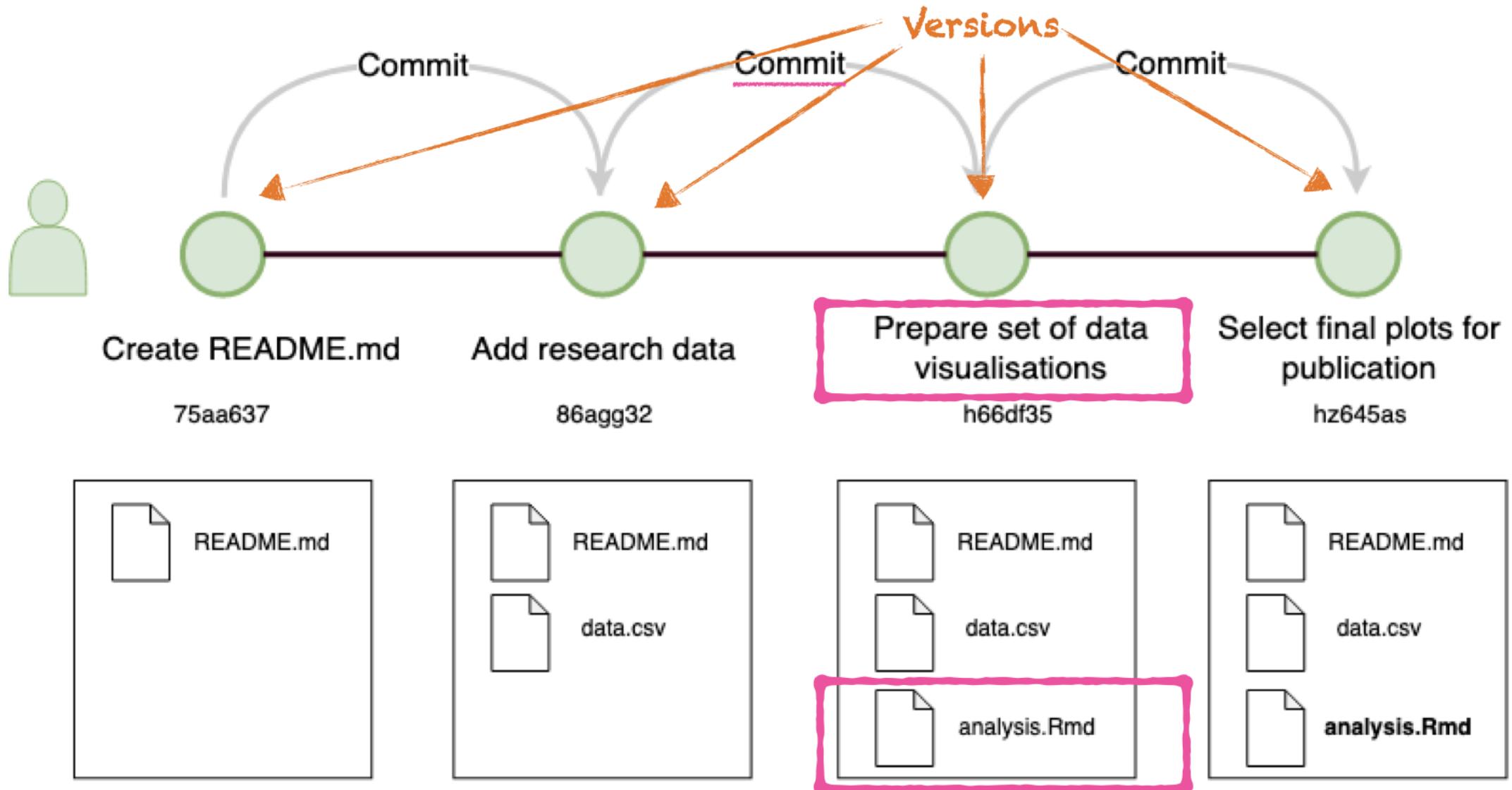


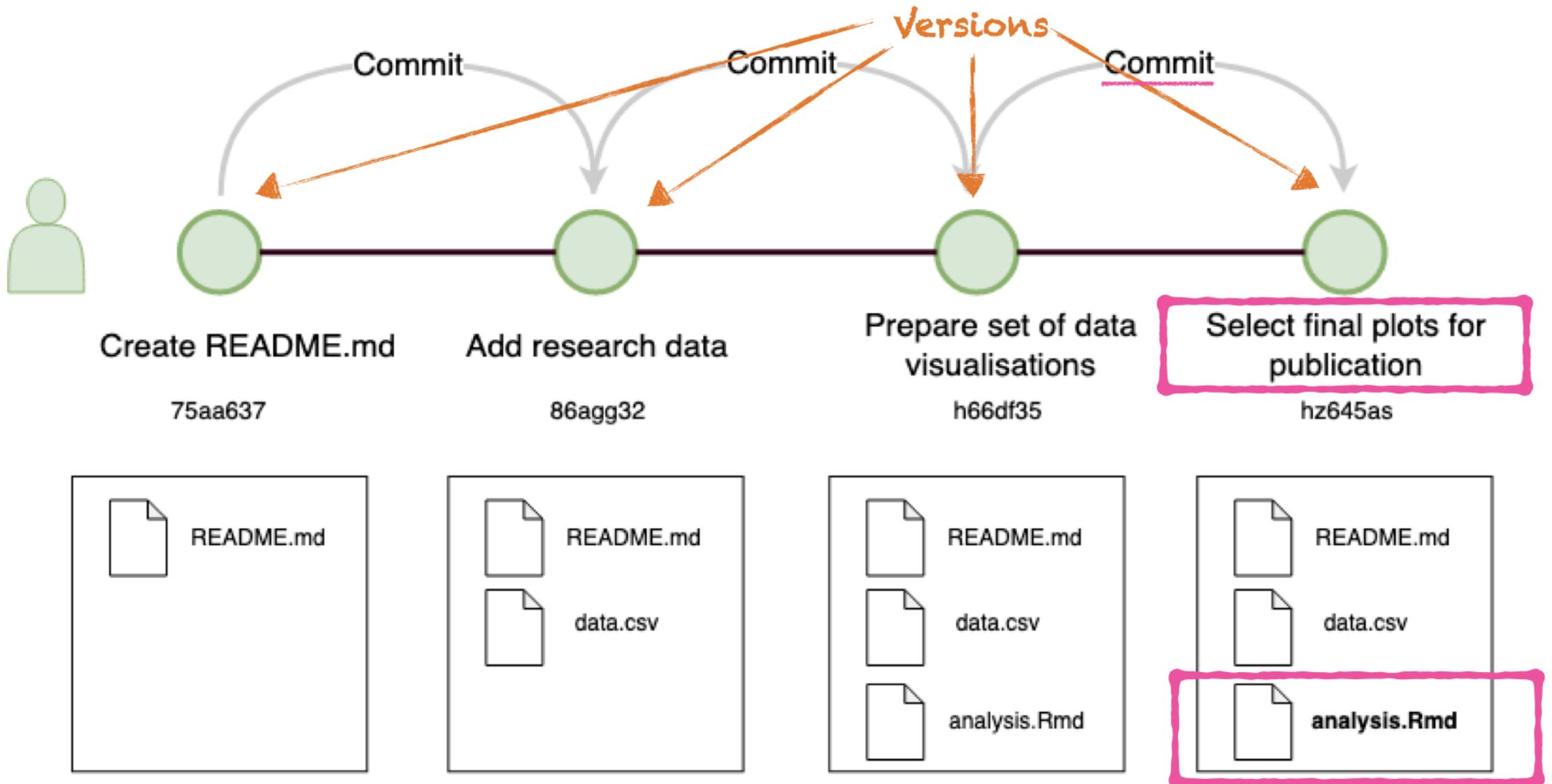
README.md

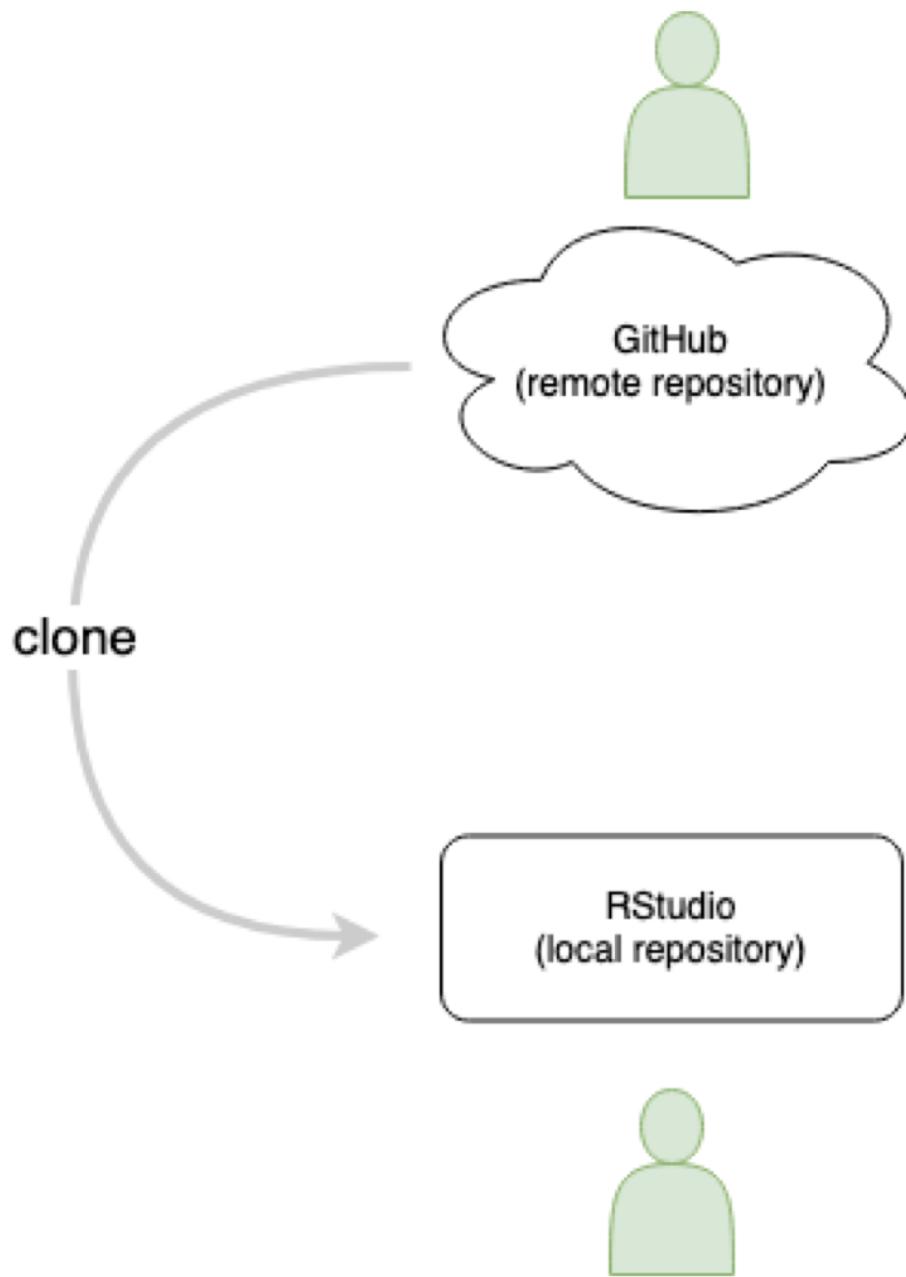


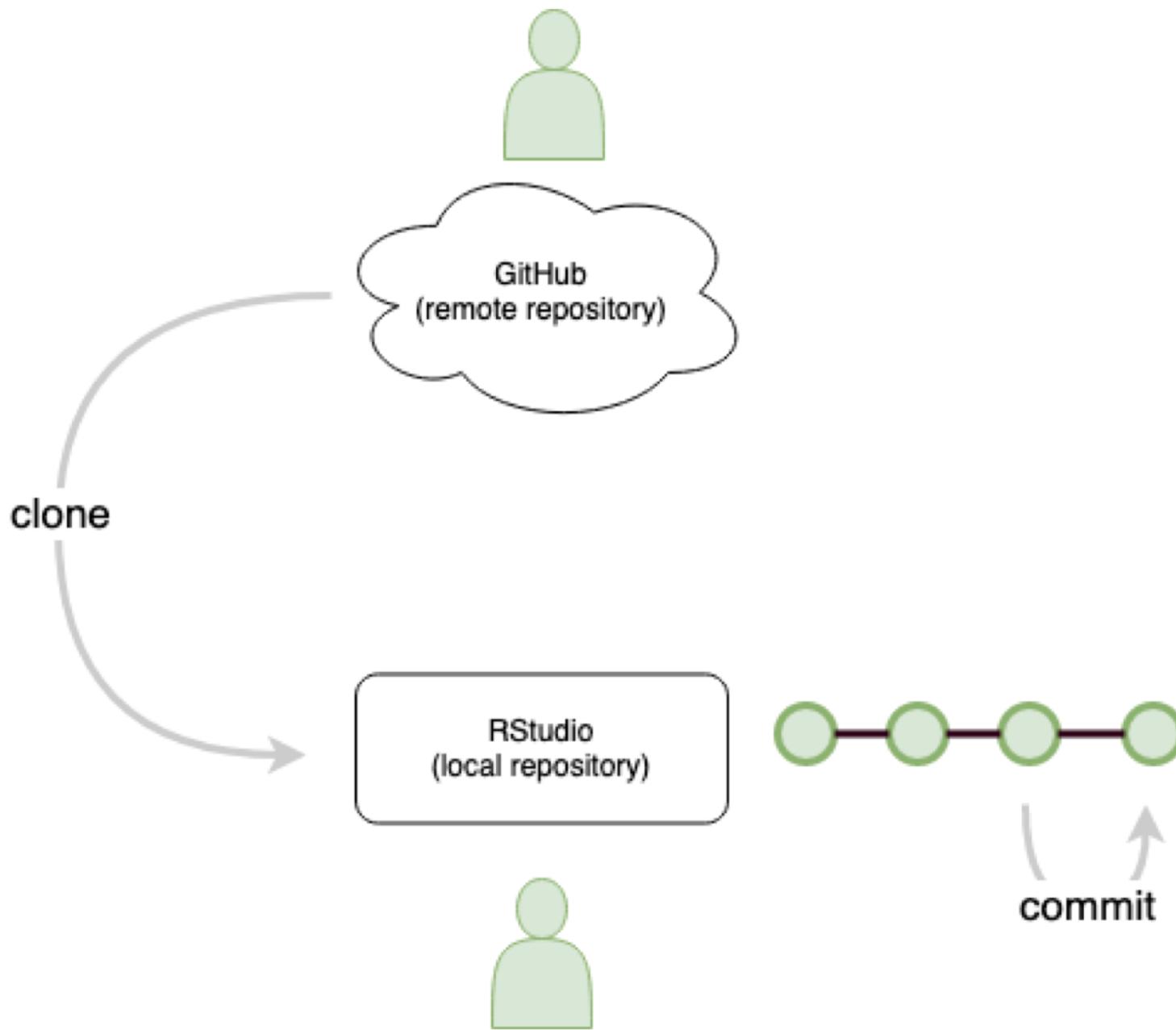
Repo(sitory)

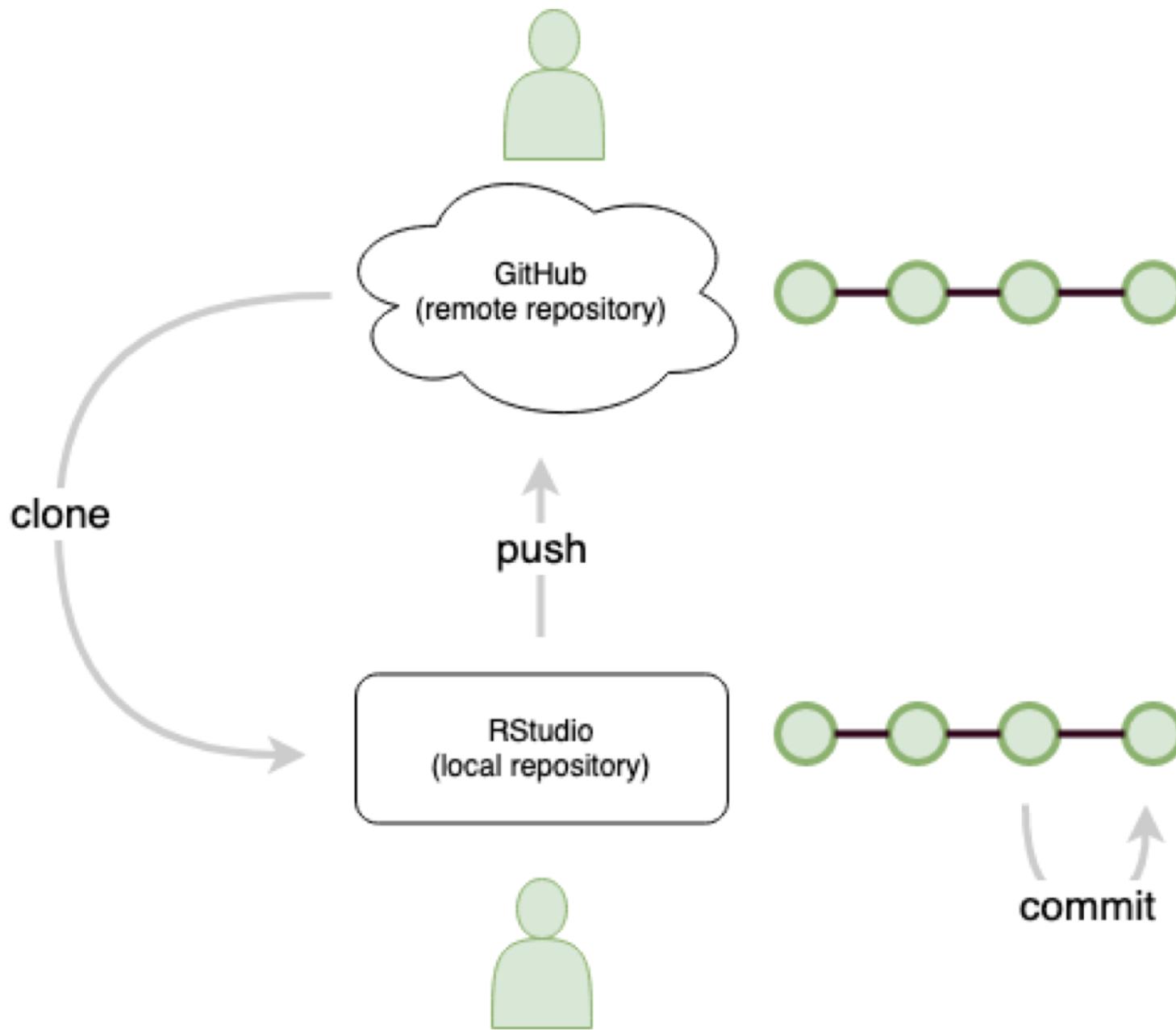






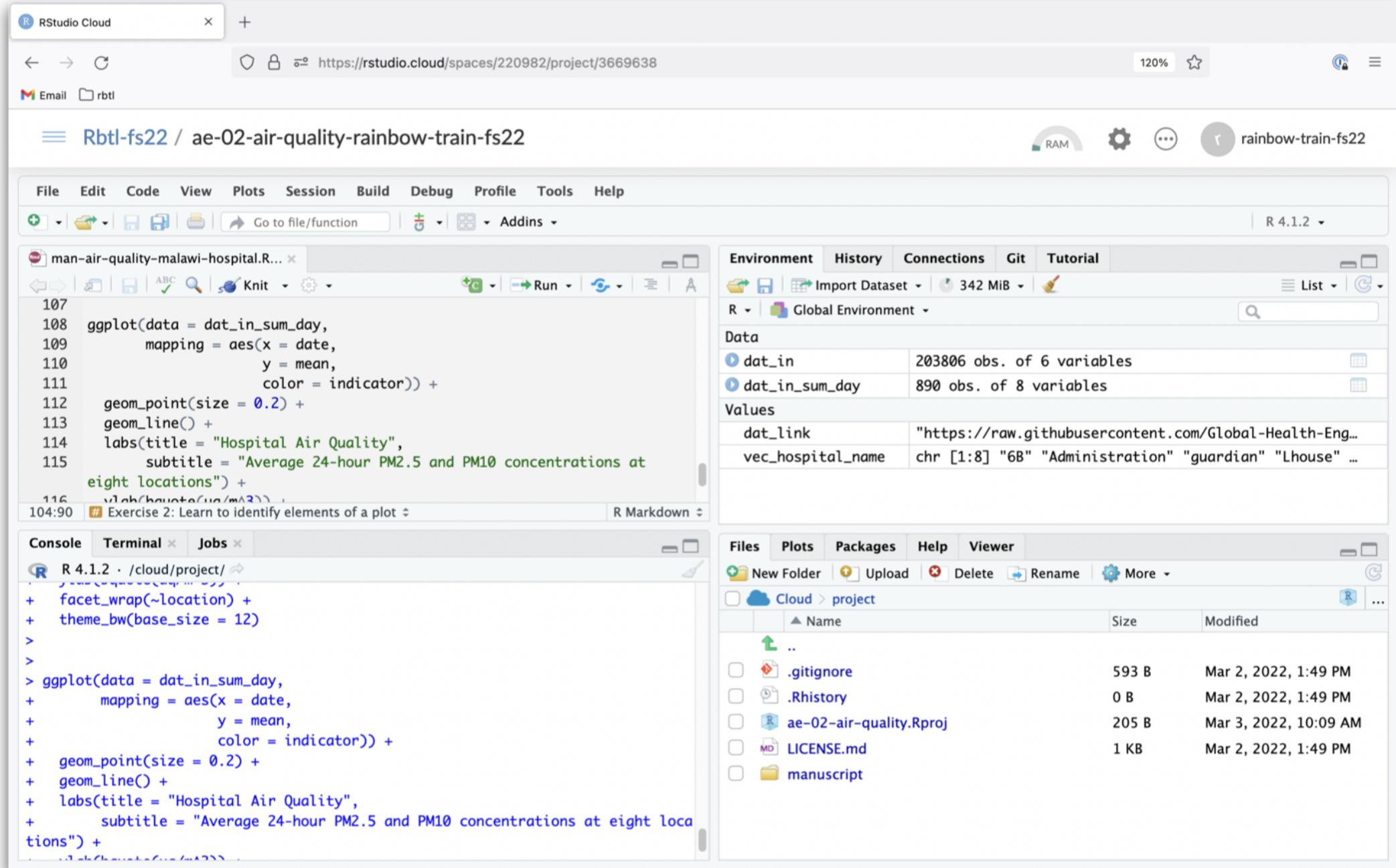






RStudio

RStudio Cloud & RStudio IDE



browser tab

RStudio Cloud https://rstudio.cloud/spaces/220982/project/3669638 120% ⚡

R Email rbt1 RStudio Cloud Workspace RAM gear ⚡ rainbow-train-fs22

Rbt-fs22 / ae-02

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins R 4.1.2

man-air-quality-malawi-hospital.R... x

```
107
108 ggplot(data = dat_in_sum_day,
109   mapping = aes(x = date,
110     y = mean,
111     color = indicator)) +
112   geom_point(size = 0.2) +
113   geom_line() +
114   labs(title = "Hospital Air Quality",
115     subtitle = "Average 24-hour PM2.5 and PM10 concentrations at
116     eight locations") +
117   facet_wrap(~location) +
118   theme_bw(base_size = 12)
```

Exercise 2: Learn to identify elements of a plot R Markdown

Console Terminal Jobs

```
R 4.1.2 · /cloud/project/
+ facet_wrap(~location) +
+ theme_bw(base_size = 12)
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```

Environment History Connections Git Tutorial

Import Dataset 342 MiB List C

Global Environment

Data

dat_in	203806 obs. of 6 variables
dat_in_sum_day	890 obs. of 8 variables

Values

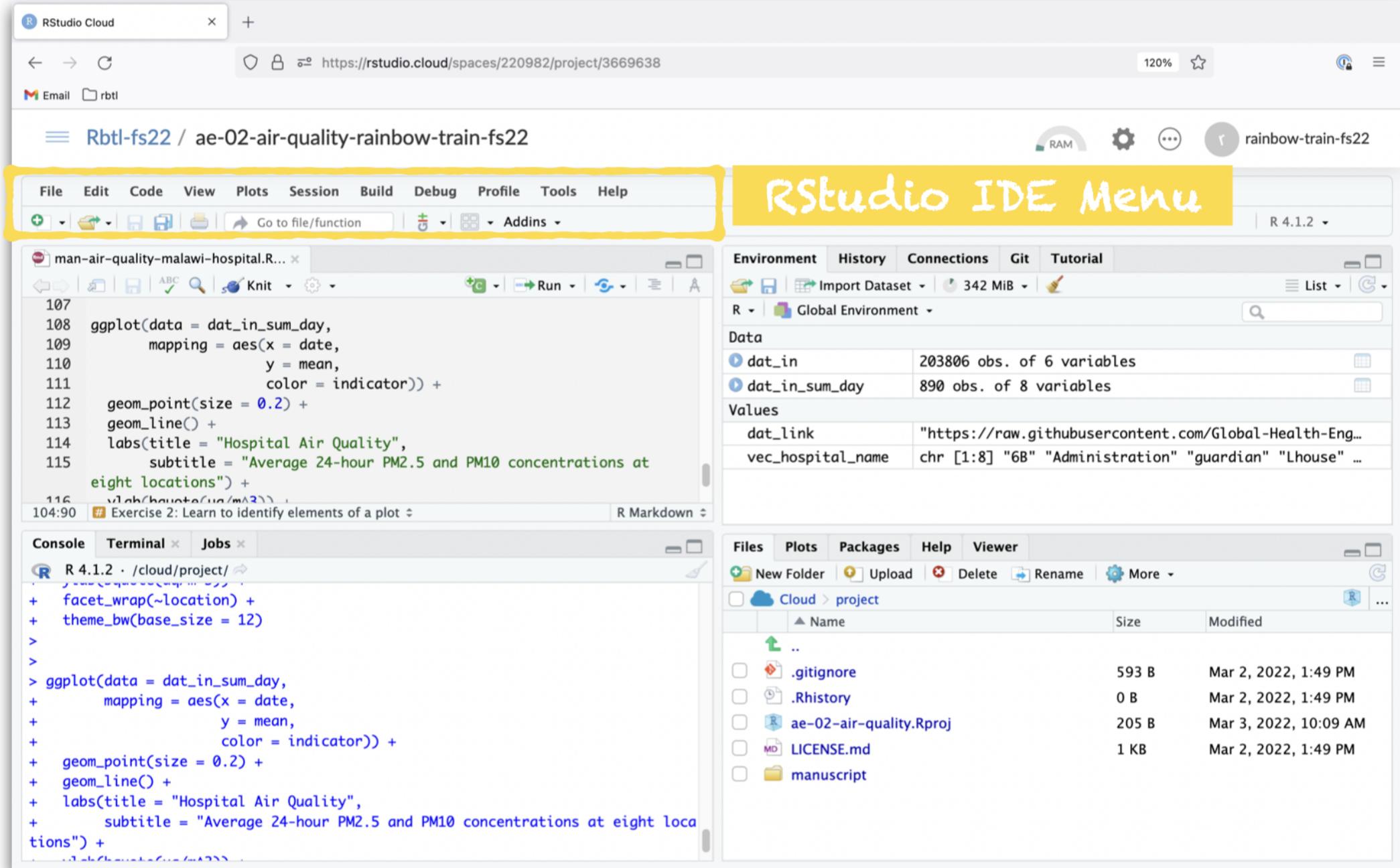
dat_link	"https://raw.githubusercontent.com/Global-Health-Eng...
vec_hospital_name	chr [1:8] "6B" "Administration" "guardian" "Lhouse" ...

Files Plots Packages Help Viewer

New Folder Upload Delete Rename More

Cloud > project

Name	Size	Modified
..		
.gitignore	593 B	Mar 2, 2022, 1:49 PM
.Rhistory	0 B	Mar 2, 2022, 1:49 PM
ae-02-air-quality.Rproj	205 B	Mar 3, 2022, 10:09 AM
LICENSE.md	1 KB	Mar 2, 2022, 1:49 PM
manuscript		



RStudio Cloud

https://rstudio.cloud/spaces/220982/project/3669638

120% ⚡

Email rbtl

RStudio IDE Menu

R 4.1.2

RAM

rainbow-train-fs22

File Edit Code View Plots Session Build Debug Profile Tools Help

Addins

man-air-quality-malawi-hospital.R... x

ABC Knit Run

Code Editor

107
108 ggplot(data = dat_in_sum_day,
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114 eight locations") +
115 # Exercise 2: Learn to identify elements of a plot

104:90 R Markdown

Console Terminal Jobs

R 4.1.2 · /cloud/project/ ↵

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RStudio Cloud

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Rbt-fs22 / ae-02-air-quality-rainbow-train-fs22

RAM  Settings  More  rainbow-train-fs22

File Edit Code View Plots Session Build Debug Profile Tools Help

Addins

man-air-quality-malawi-hospital.R... x

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116 
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Exercise 2: Learn to identify elements of a plot

R Markdown

Environment History Connections Git Tutorial

Import Dataset 342 MiB

R Global Environment

Data

- dat_in
- dat_in_s

Values

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Environment Git

Console Terminal Jobs

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R 4.1.2 · /cloud/project/
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Email rbtl

Rbt-fs22 / ae-02-air-quality-rainbow-train-fs22

RAM  120%   

RStudio IDE Menu

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man-air-quality-malawi-hospital.R... x

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Files Plots Packages Help Viewer

New Folder Upload Delete Rename More

Cloud > project

Name	Size	Modified
..		9 PM
.gitig		9 PM
.Rhist		9 PM
ae-02-air-quality.Rproj	205 B	Mar 3, 2022, 10:09 AM
LICENSE.md	1 KB	Mar 2, 2022, 1:49 PM
manuscript		

File Manager

The screenshot displays the RStudio Cloud interface with several panels highlighted by hand-drawn colored boxes:

- Code Editor** (Yellow Box): Shows an R Markdown script for creating a plot of hospital air quality. The code includes ggplot, geom_point, and geom_line layers, along with a title and subtitle. A placeholder text "Code Editor" is overlaid on the panel.
- RStudio IDE Menu** (Yellow Box): Shows the main menu bar (File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help) and the toolbar below it. A placeholder text "RStudio IDE Menu" is overlaid on the panel.
- Environment** (Orange Box): Shows the Global Environment pane with variables like dat_in, dat_in_s, dat_link, and vec_hospital_name. A placeholder text "Environment" is overlaid on the left side of the panel, and "Git" is overlaid on the right side.
- Console** (Pink Box): Shows the R console output for running the R Markdown script. The code is identical to the one in the Code Editor. A placeholder text "Console" is overlaid on the panel.
- File Manager** (Green Box): Shows the project file structure in the Cloud. It includes a .gitignore file, a Rhistory file, an Rproj file named ae-02-air-quality.Rproj, a LICENSE.md file, and a manuscript folder. A placeholder text "File Manager" is overlaid on the panel.

Browser Headers:

- RStudio Cloud
- https://rstudio.cloud/spaces/220982/project/3669638
- RAM, Settings, Help, Project Name: rainbow-train-fs22

Bottom Navigation:

- Email, rbt1
- R 4.1.2



Photo by: Matt Walsh

Thanks! 🌻

Slides created via the R packages:

xaringan
gadenbuie/xaringanthemer

The chakra comes from [remark.js](#), [knitr](#), and [R Markdown](#).

Access slides as PDF on [GitHub](#)

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