

# rbtl - Research Beyond the Lab

## Version control and more tools

Lars Schöbitz

2022-03-10

# 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

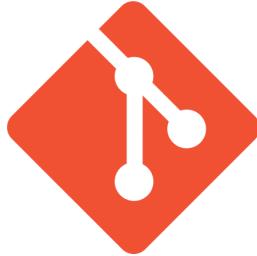
A way to share files with others, so they can:

- 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)

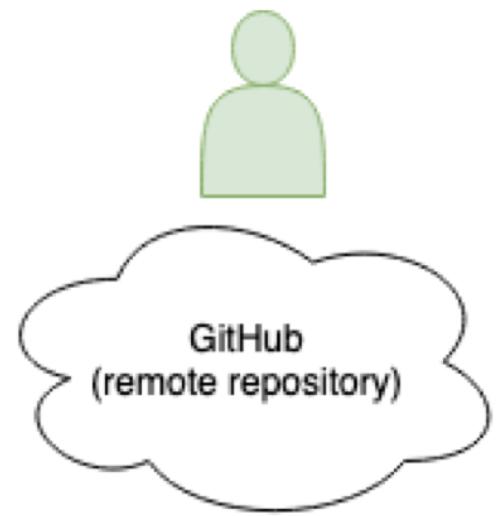


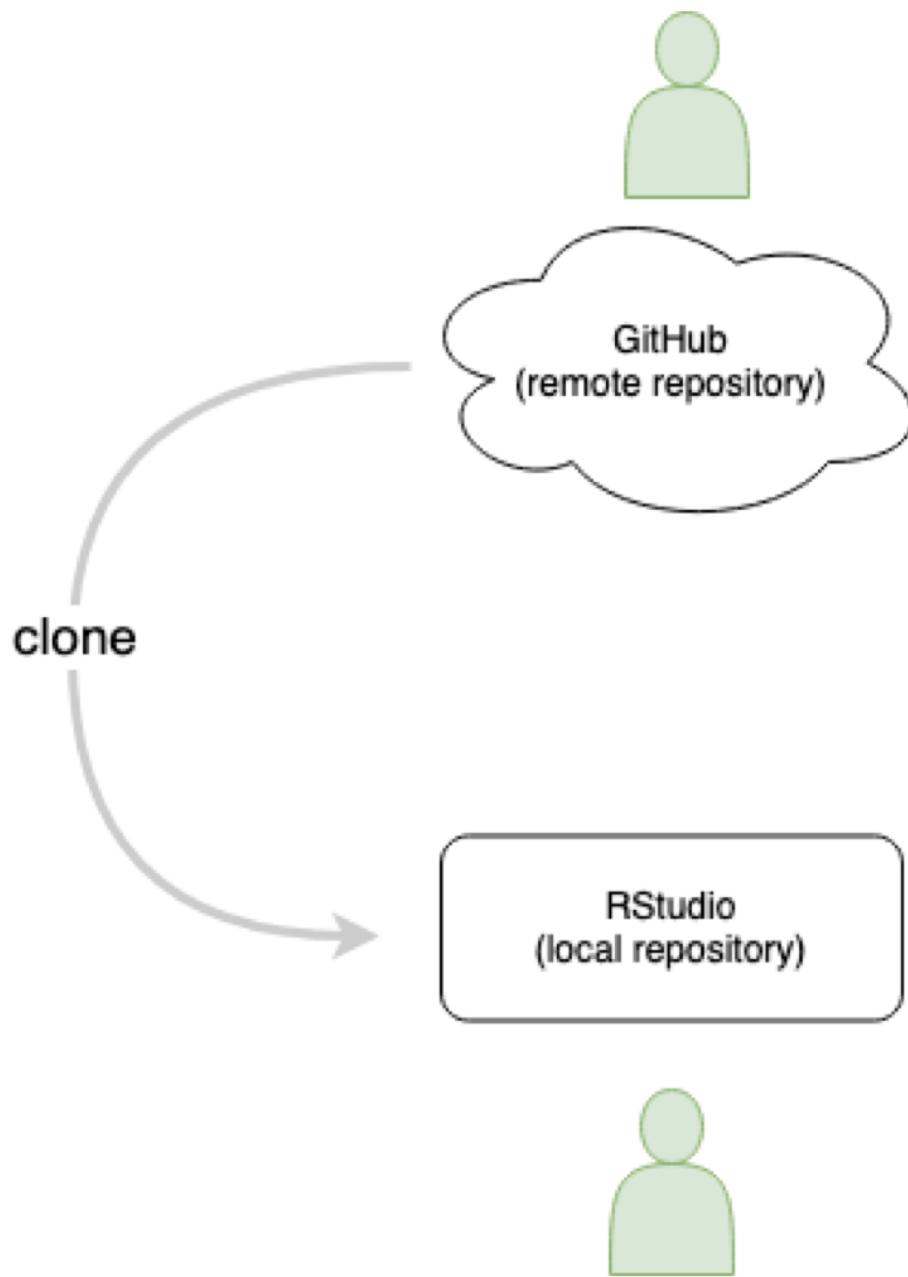
- GitHub is a hosting platform for version control using Git
- Launched in 2008, acquired by Microsoft in 2018, Microsoft for US\$ 7.5 billion
- 73 million Users ([February, 2022](#))
- Facebook for Software Developers

# Homework Assignment 2

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Version Control - Terminology

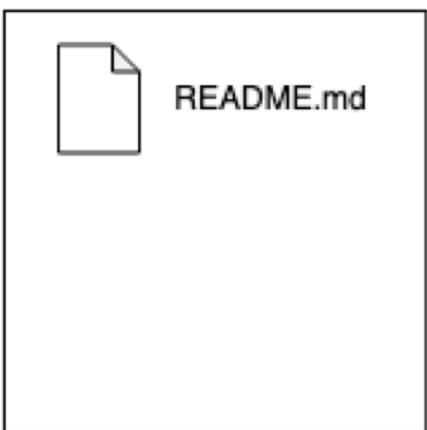


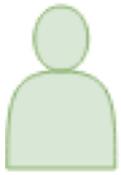




Create README.md

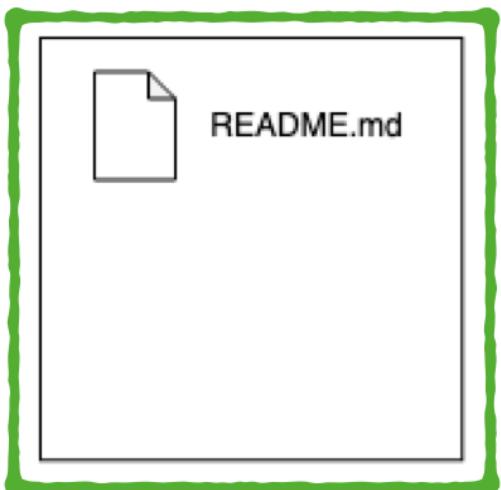
75aa637





Create README.md

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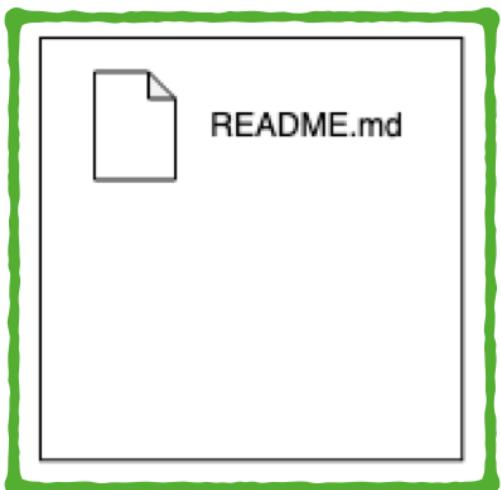
Repo(sitory)

Commit  
message



Create README.md

75aa637



Repo(sitory)

Commit  
message



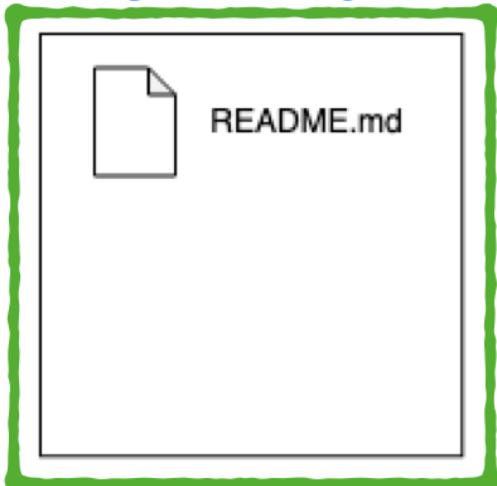
Create README.md

75aa637

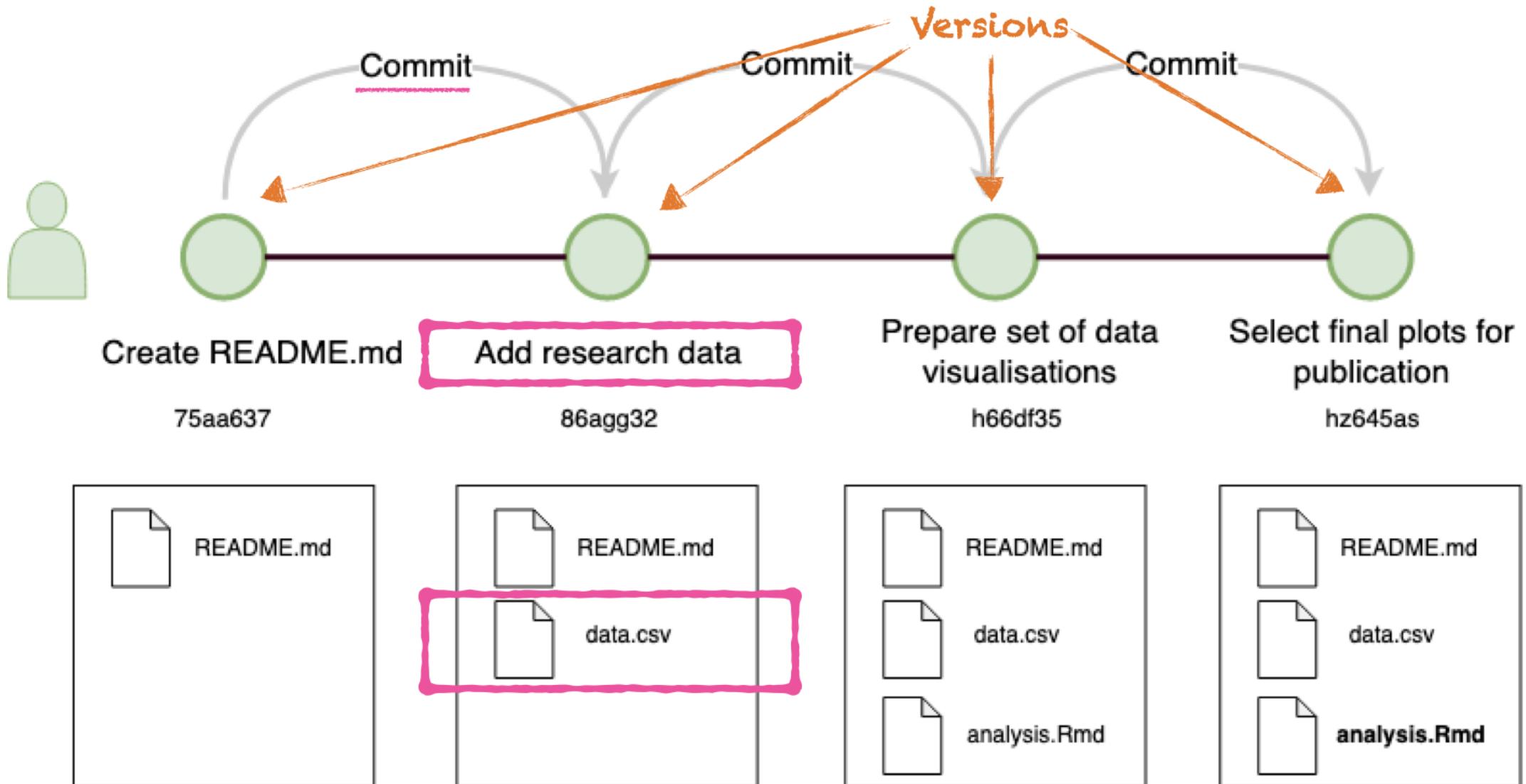
SHA-1 hash

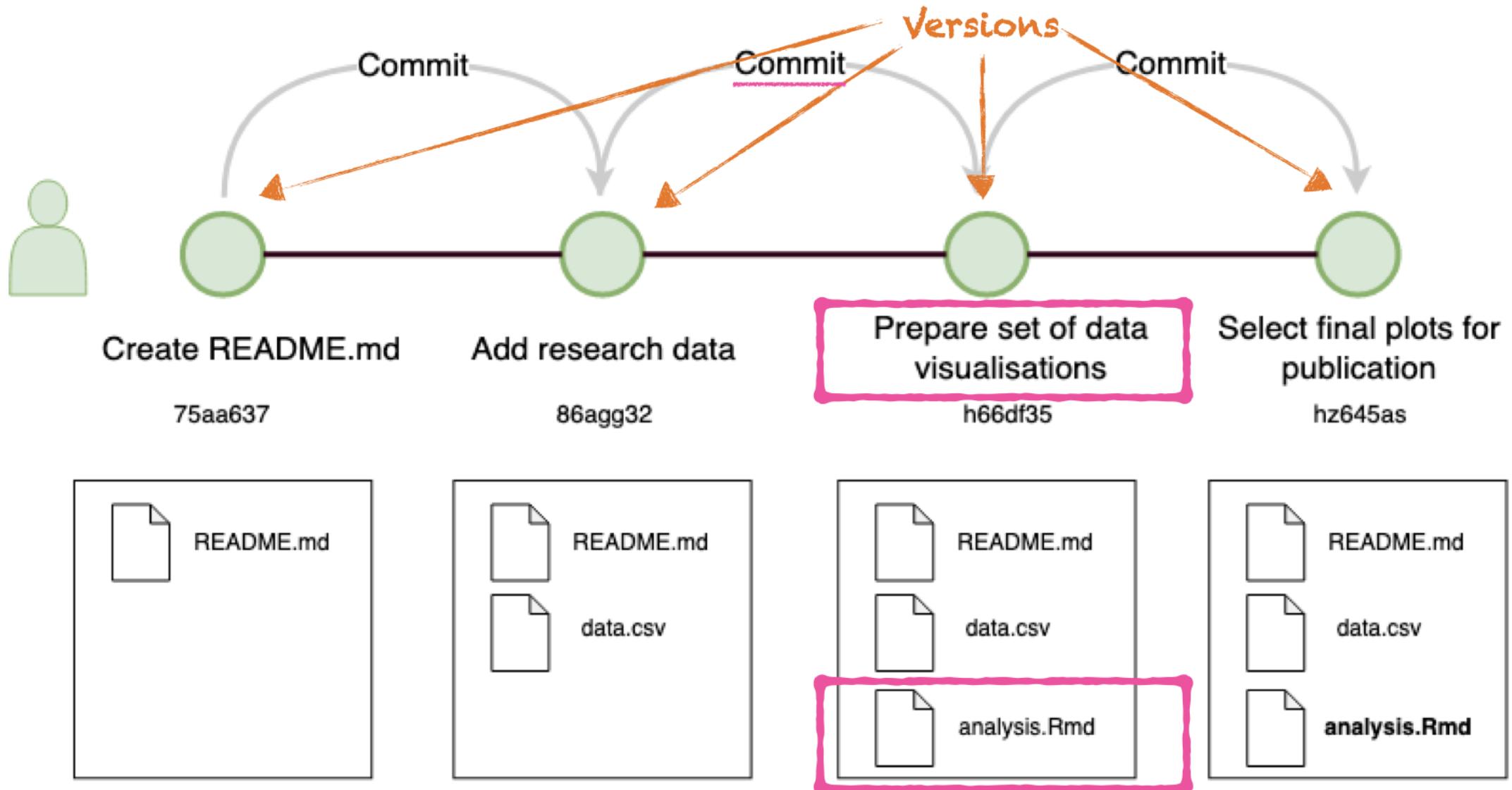


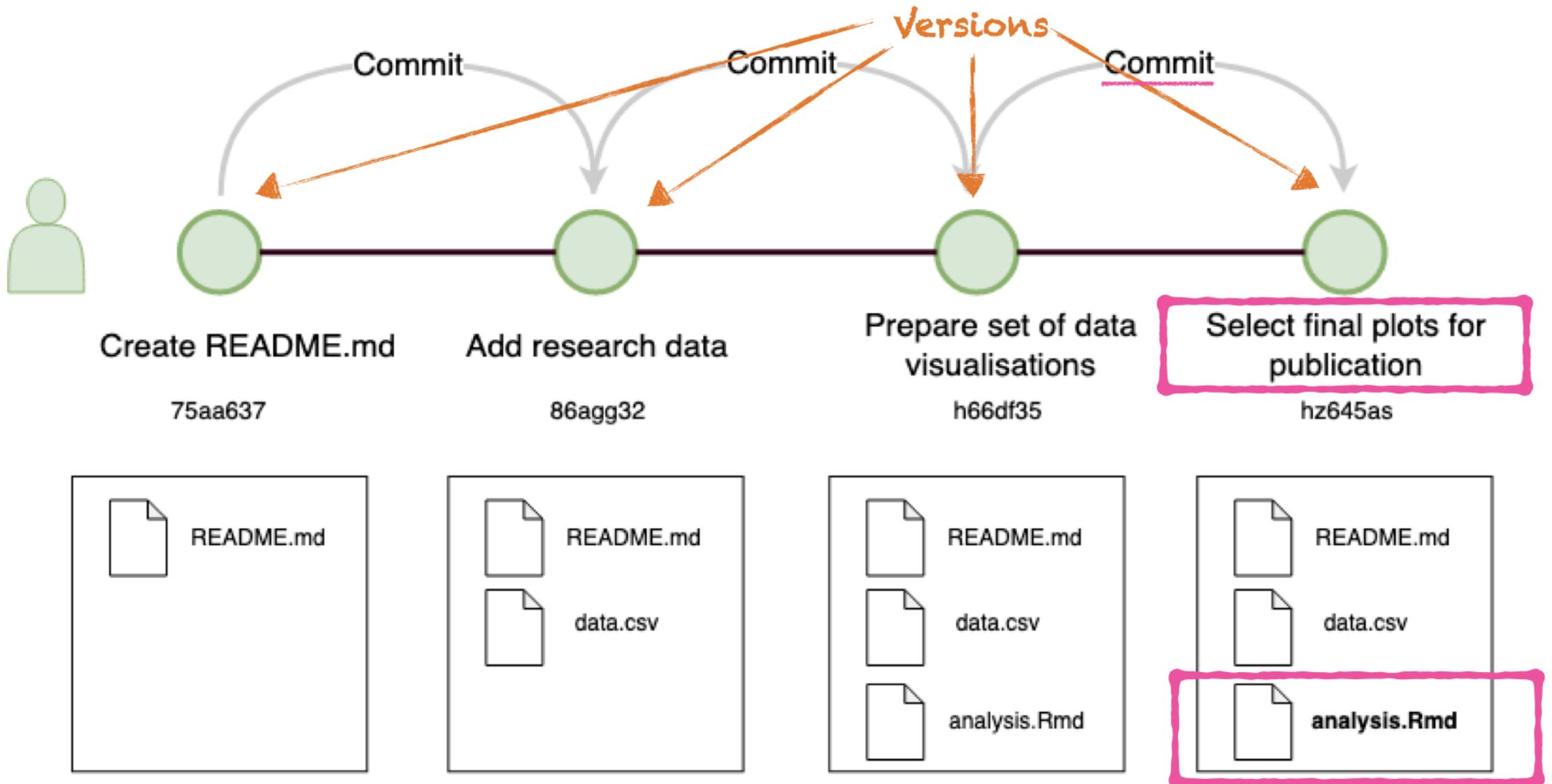
README.md

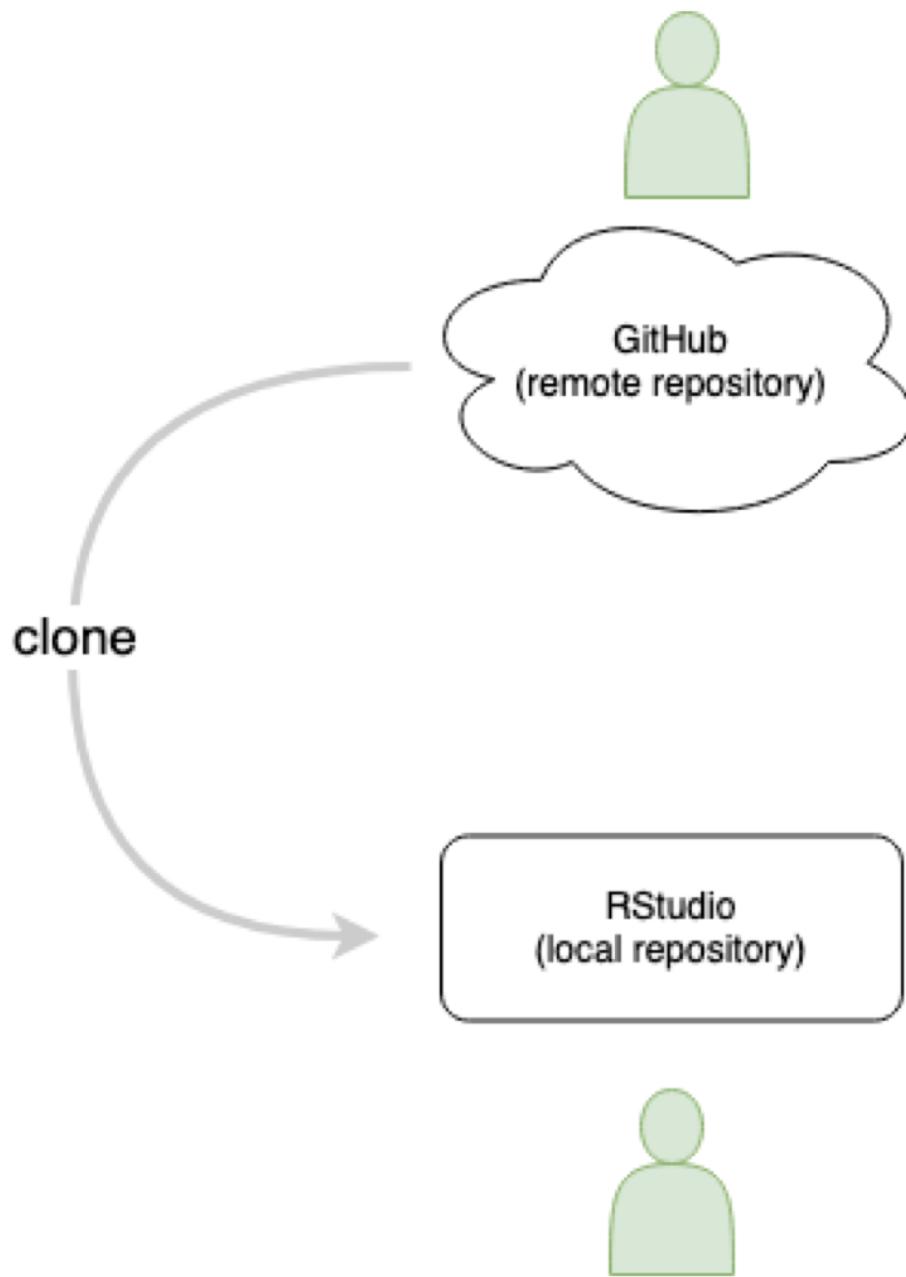


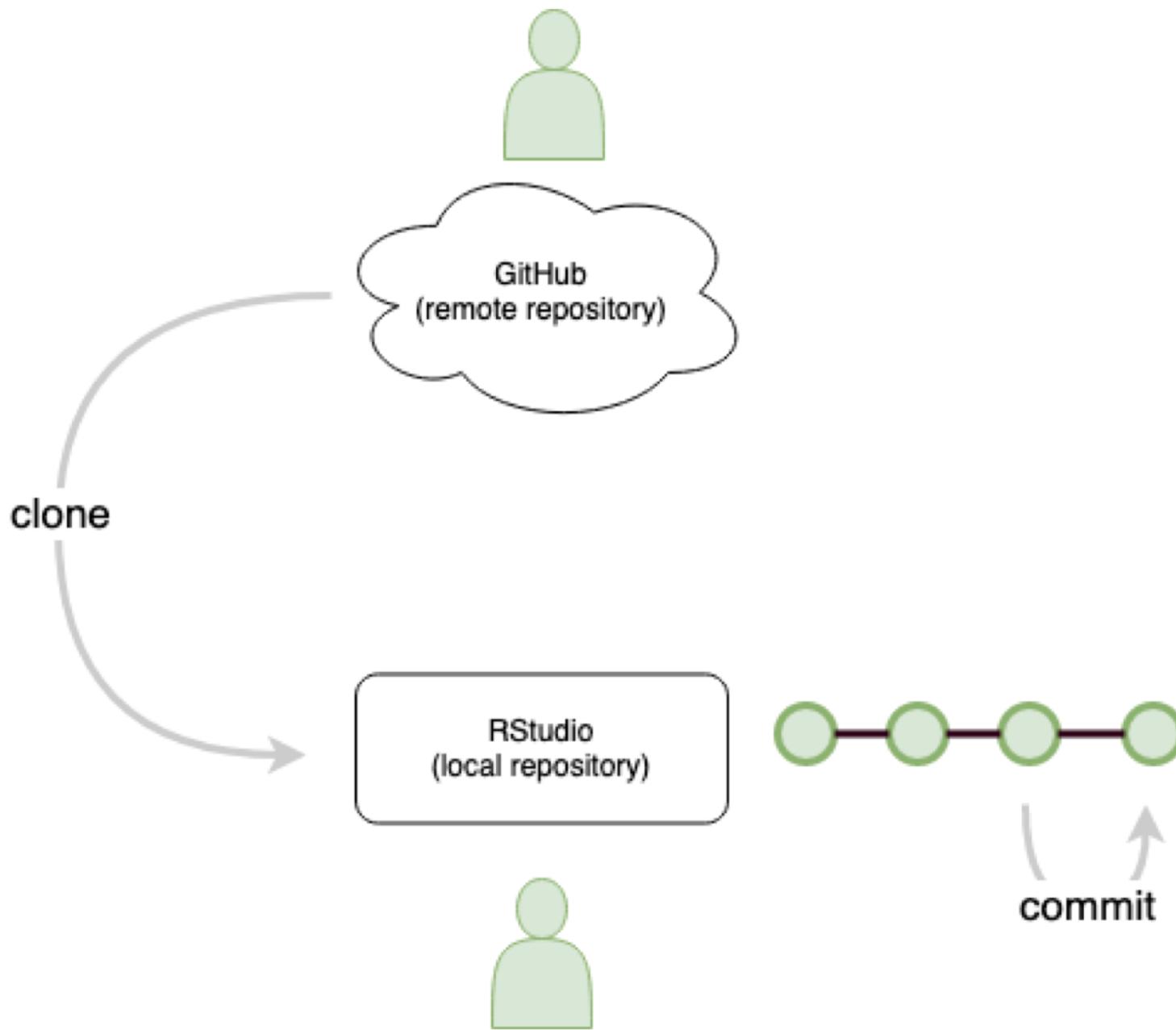
Repo(sitory)

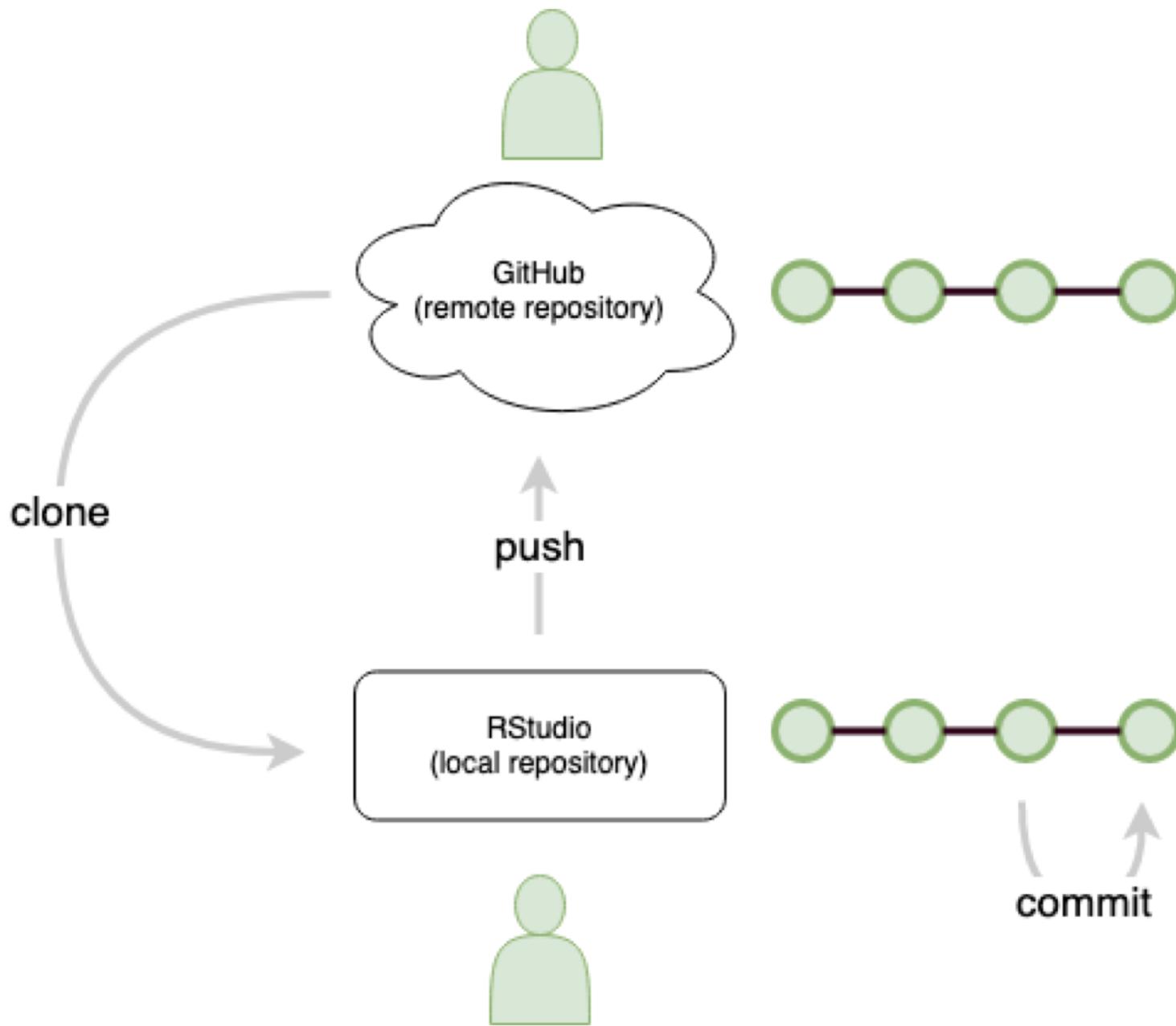












# RStudio

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## RStudio Cloud & RStudio IDE

RStudio Cloud    +

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

Email rbtl

## Rbtl-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

Go to file/function    Addins

R 4.1.2

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

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

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

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" ...

Console Terminal Jobs

R 4.1.2 · /cloud/project/ ↵

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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		

**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

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Console Terminal Jobs

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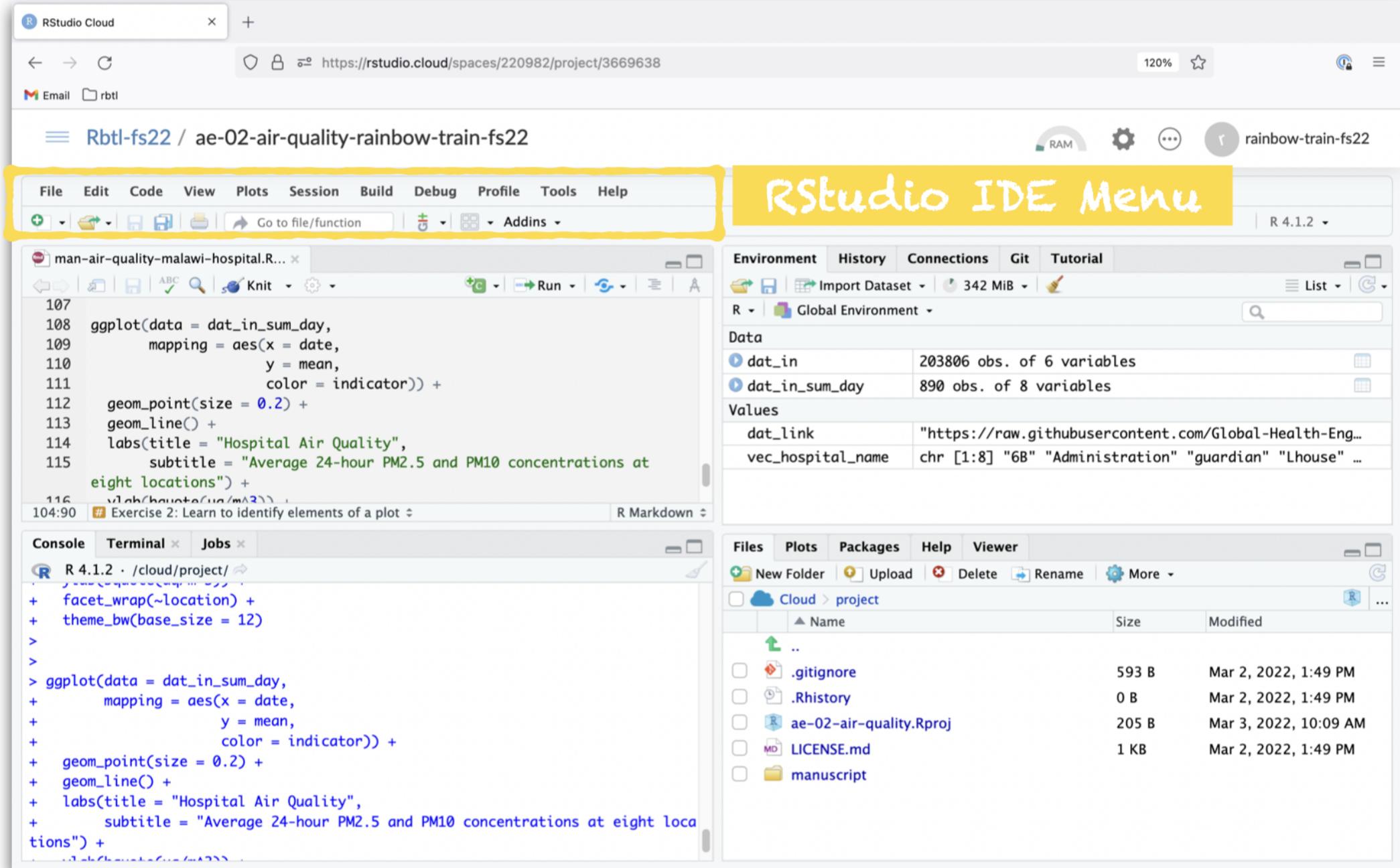
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RStudio Cloud

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

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RStudio IDE Menu

R 4.1.2

**Code Editor**

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

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

Console Terminal x Jobs x

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R 4.1.2 · /cloud/project/
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RAM

Global Environment

Data

- dat\_in 203806 obs. of 6 variables
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RAM  Settings  More  rainbow-train-fs22

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Addins

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

ABC Knit Run

Code Editor

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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

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- dat\_in
- dat\_in\_s

Values

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Environment Git

Console Terminal Jobs

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Email rbtl

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

RAM  120%   

**RStudio IDE Menu**

File Edit Code View Plots Session Build Debug Profile Tools Help

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

ABC Knit Run

Code Editor

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R Markdown

Environment History Connections Git Tutorial

Import Dataset 342 MiB

R Global Environment

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- dat\_in\_s

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**Environment Git**

Console Terminal Jobs

R 4.1.2 · /cloud/project/

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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		
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 colored borders:

- Code Editor** (Yellow border): 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** (Orange border): Shows the main menu bar (File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help) and the global environment pane. The environment pane lists variables like dat\_in, dat\_link, and vec\_hospital\_name. A placeholder text "Environment Git" is overlaid on the environment section.
- Console** (Pink border): Shows R command history and code execution. A placeholder text "Console" is overlaid on the panel.
- File Manager** (Green border): Shows the project file structure in the cloud. A placeholder text "File Manager" is overlaid on the panel.

Header elements include the RStudio Cloud logo, a search bar with the URL https://rstudio.cloud/spaces/220982/project/3669638, a battery icon, a gear icon, and a refresh icon. The top right corner shows the RAM usage (120%), a star icon, and a lock icon.

Bottom navigation icons include Email, rbt1, and a three-dot menu icon.

Project navigation bar at the top: Rbt1-fs22 / ae-02-air-quality-rainbow-train-fs22

Global environment pane (RStudio IDE Menu):

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



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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