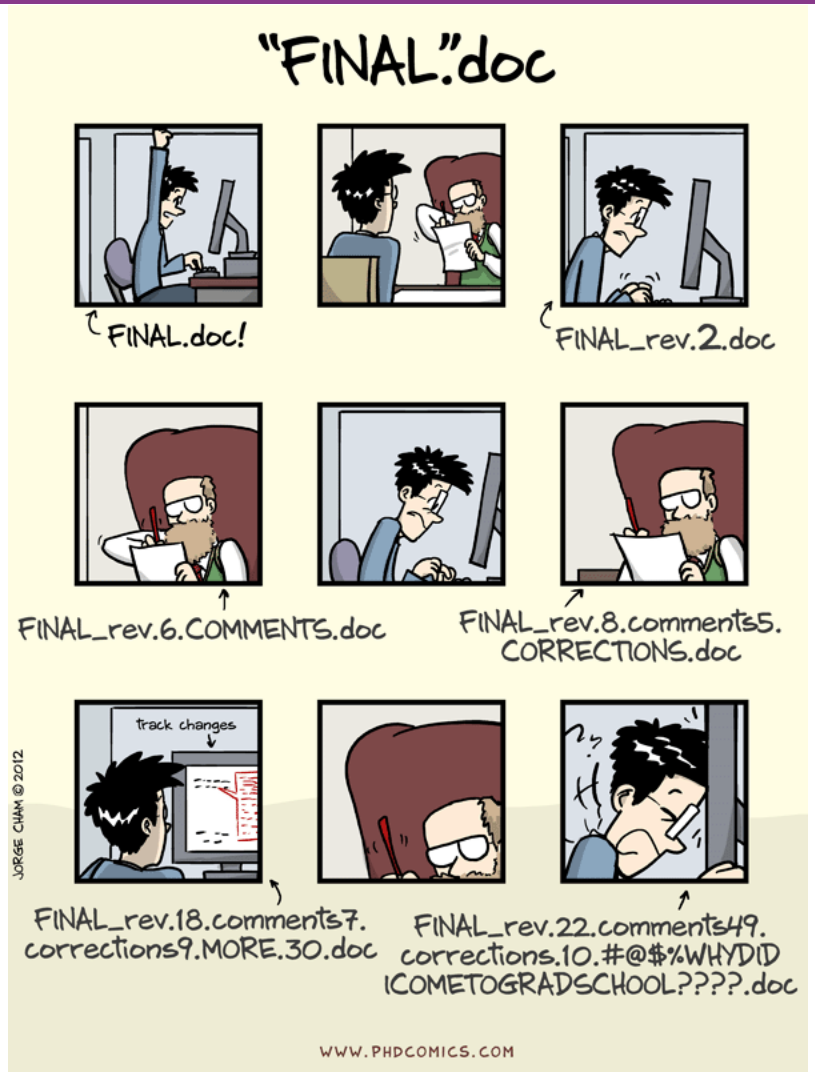
@RLadiesMelb

# Using Git for Version Control and Collaboration

July 9, 2025




"notFinal.doc" by Jorge Cham,
https://www.phdcomics.com

# What will you walk away with?

- Confidence in your code
- A better understanding of existing tools
- Improve your skills

# Important notes for this talk

- This is **not** an in-depth tutorial
- Will be focused on examples using R
- Uses content from:

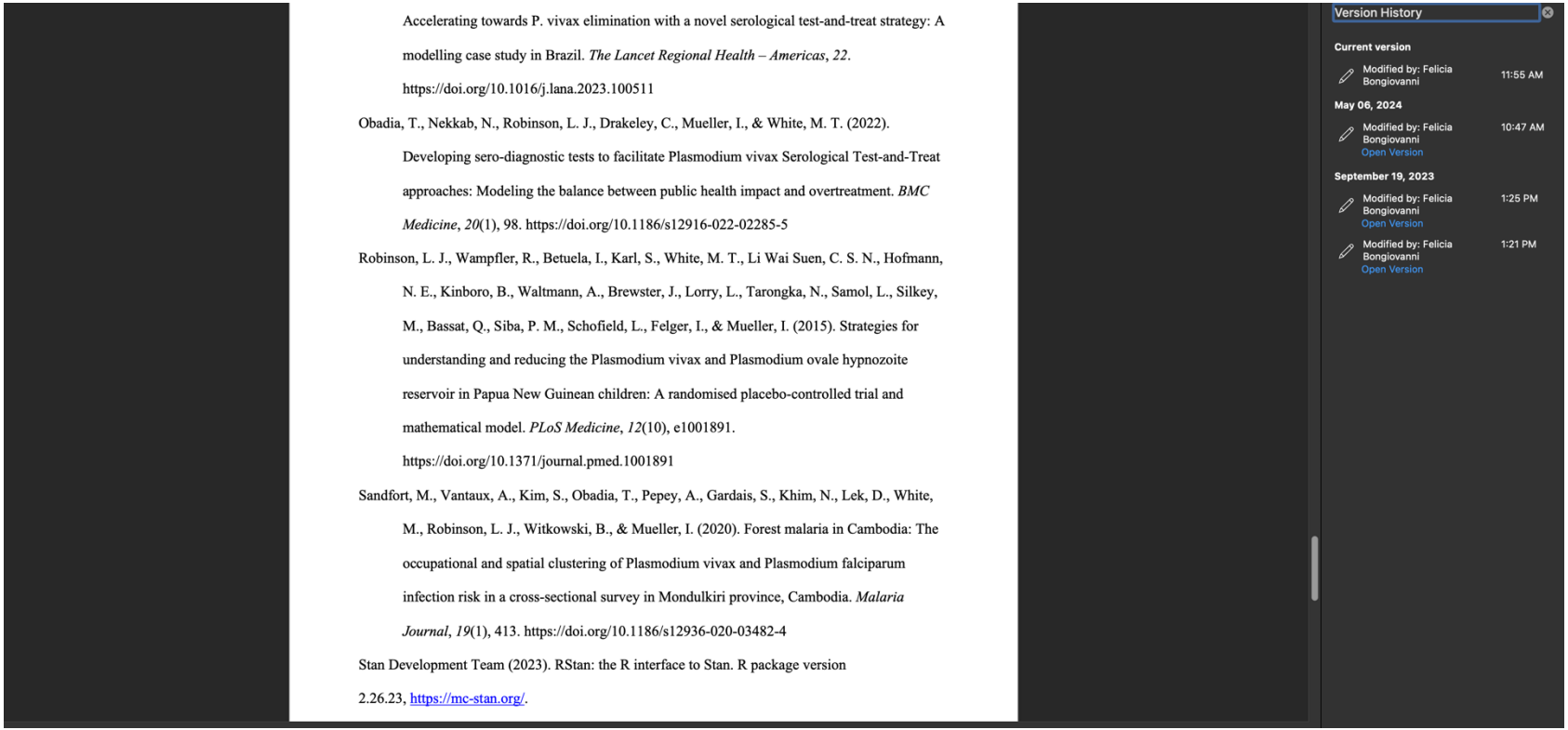
https://git-is-my-lab-book.net

https://swcarpentry.github.io/git-novice/

# What is version control?

- A systematic way to record changes to a file
- Think of it as a way to record your progress!
- Allows you to restore a file to a previous version

# How do I maintain version control?




Accelerating towards P. vivax elimination with a novel serological test-and-treat strategy: A modelling case study in Brazil. *The Lancet Regional Health – Americas*, *22*. https://doi.org/10.1016/j.lana.2023.100511

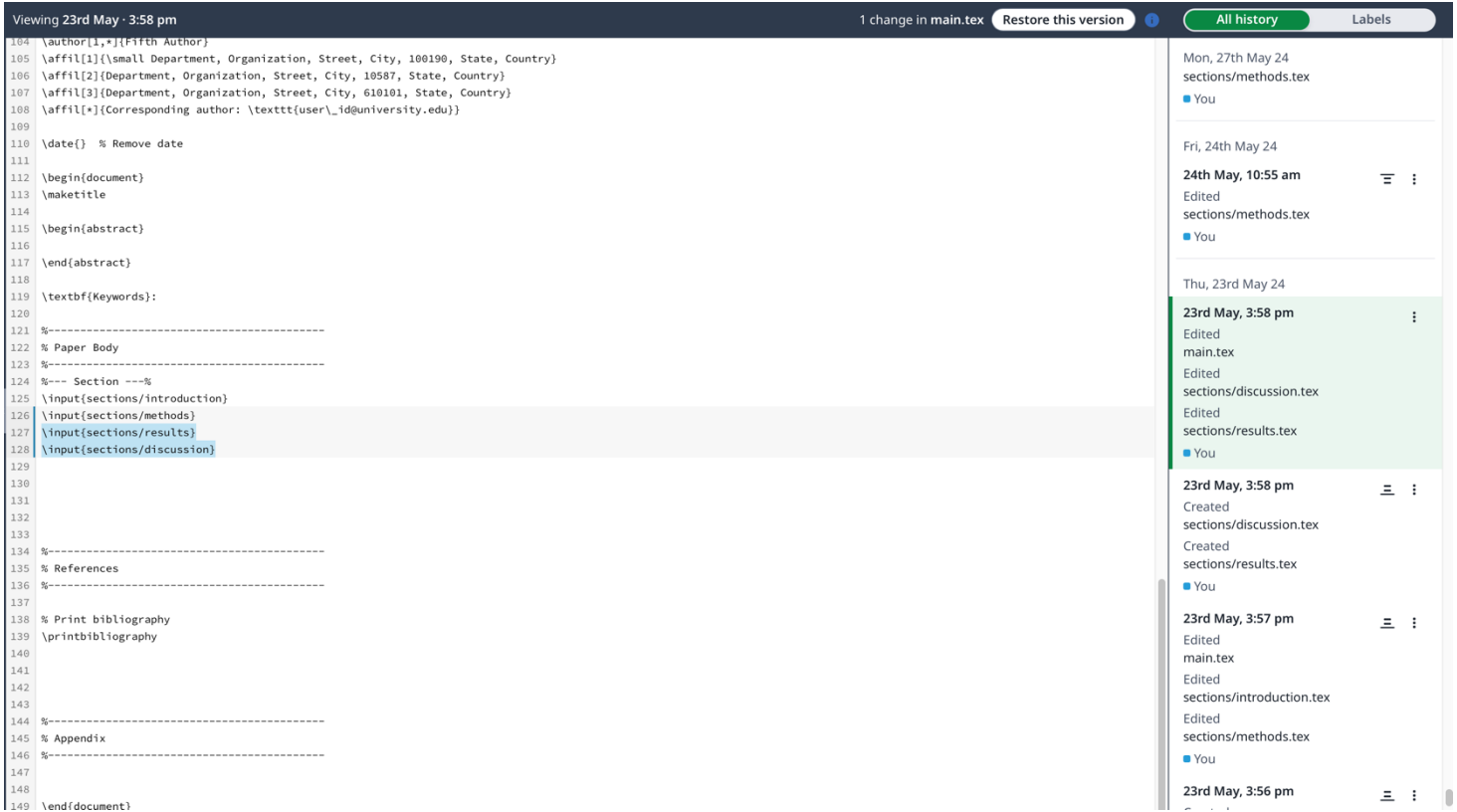
Obadia, T., Nekkab, N., Robinson, L. J., Drakeley, C., Mueller, I., & White, M. T. (2022). Developing sero-diagnostic tests to facilitate Plasmodium vivax Serological Test-and-Treat approaches: Modeling the balance between public health impact and overtreatment. *BMC Medicine*, *20*(1), 98. https://doi.org/10.1186/s12916-022-02285-5

Robinson, L. J., Wampfler, R., Betuela, I., Karl, S., White, M. T., Li Wai Suen, C. S. N., Hofmann, N. E., Kinboro, B., Waltmann, A., Brewster, J., Lorry, L., Tarongka, N., Samol, L., Silkey, M., Bassat, Q., Siba, P. M., Schofield, L., Felger, I., & Mueller, I. (2015). Strategies for understanding and reducing the Plasmodium vivax and Plasmodium ovale hypnozoite reservoir in Papua New Guinean children: A randomised placebo-controlled trial and mathematical model. *PLoS Medicine*, *12*(10), e1001891. https://doi.org/10.1371/journal.pmed.1001891

Sandfort, M., Vantaux, A., Kim, S., Obadia, T., Pepey, A., Gardais, S., Khim, N., Lek, D., White, M., Robinson, L. J., Witkowski, B., & Mueller, I. (2020). Forest malaria in Cambodia: The occupational and spatial clustering of Plasmodium vivax and Plasmodium falciparum infection risk in a cross-sectional survey in Mondulkiri province, Cambodia. *Malaria Journal*, *19*(1), 413. https://doi.org/10.1186/s12936-020-03482-4

Stan Development Team (2023). RStan: the R interface to Stan. R package version 2.26.23, https://mc-stan.org/.

# How do I maintain version control?



# How do I maintain version control?

**Git**

# What is git?

- A **version control system**
- Often preinstalled on macOS and native on Linux

  (needs installation on Windows)

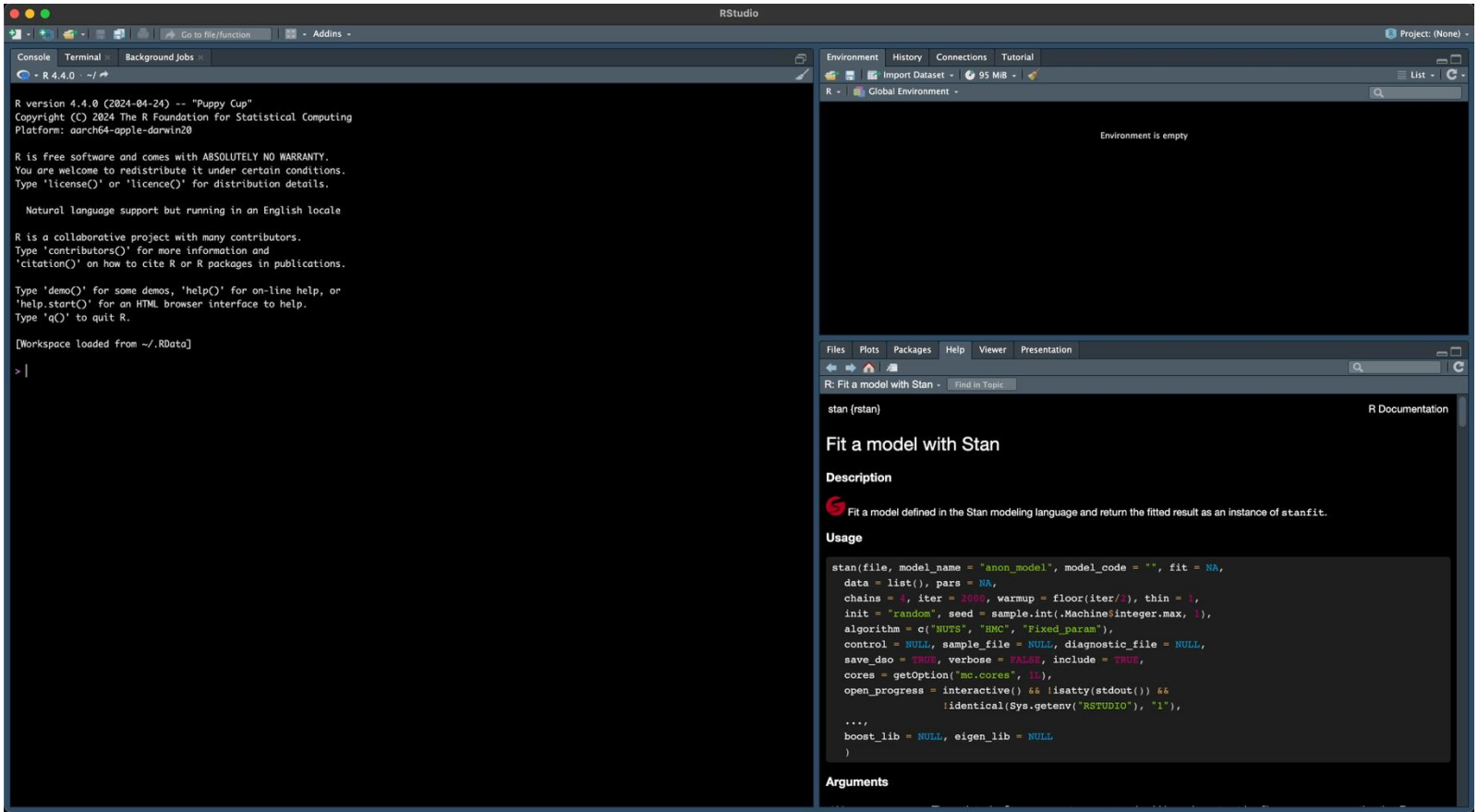
# What is Github?

- An online server to store your files based on **git**
- Others exist: GitLab, Gitea

# How do these come together…?

# Let’s play the Git Game!

# 1: Start game


RStudio
Go to file/function
Addins
Project: (None)
Console
Terminal
Background Jobs
R 4.4.0 · ~/
R version 4.4.0 (2024-04-24) -- "Puppy Cup"
Copyright (C) 2024 The R Foundation for Statistical Computing
Platform: aarch64-apple-darwin20
R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.
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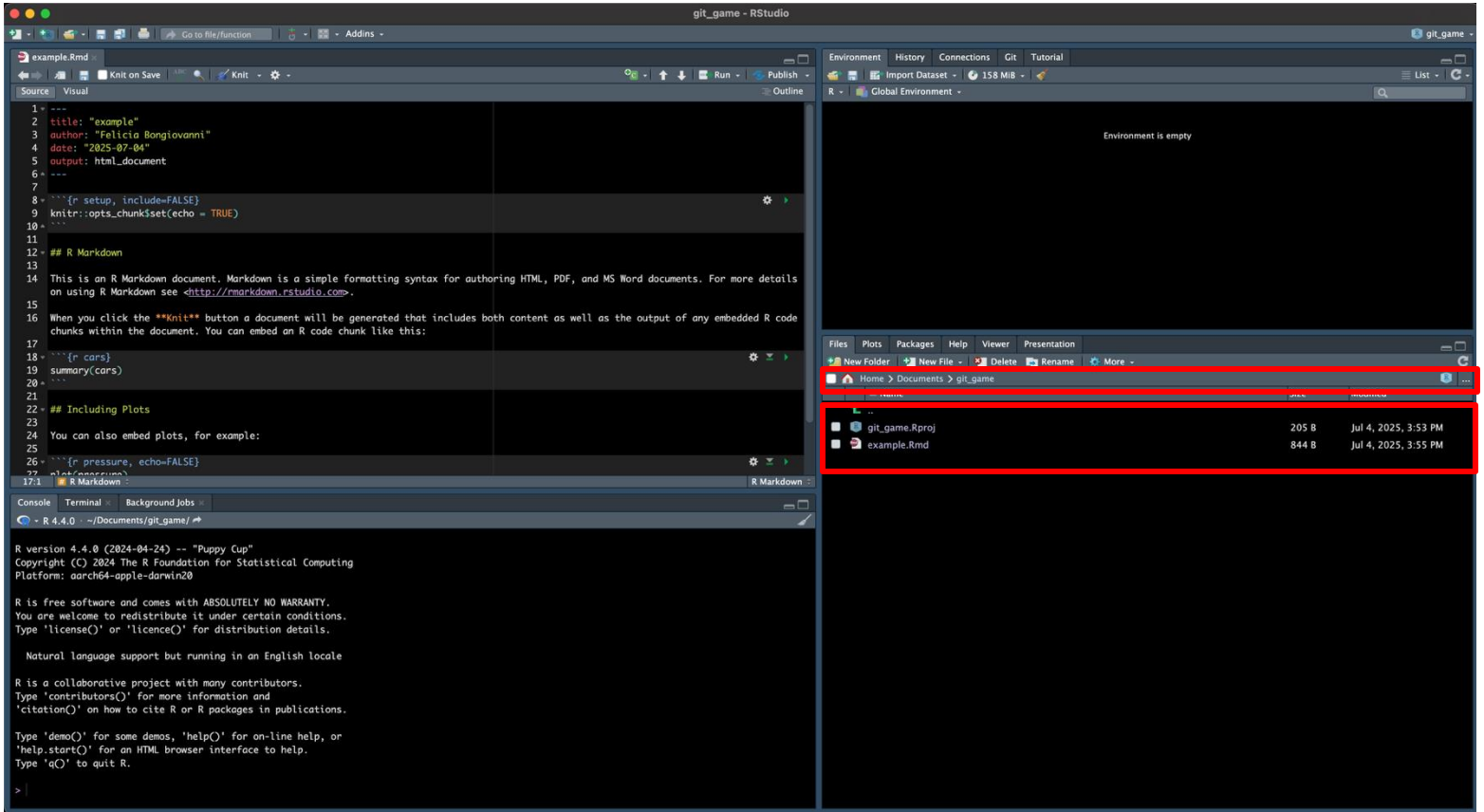
Type 'q()' to quit R.
[Workspace loaded from ~/.RData]
>
Environment
History
Connections
Tutorial
Import Dataset
95 MiB
List
R
Global Environment
Environment is empty
Files
Plots
Packages
Help
Viewer
Presentation
R: Fit a model with Stan
Find in Topic
stan {rstan}
R Documentation
Fit a model with Stan
Description
Fit a model defined in the Stan modeling language and return the fitted result as an instance of stanfit.
Usage
stan(file, model_name = "anon_model", model_code = "", fit = NA,
data = list(), pars = NA,
chains = 4, iter = 2000, warmup = floor(iter/2), thin = 1,
init = "random", seed = sample.int(.Machine$integer.max, 1),
algorithm = c("NUTS", "HMC", "Fixed_param"),
control = NULL, sample_file = NULL, diagnostic_file = NULL,
save_dso = TRUE, verbose = FALSE, include = TRUE,
cores = getOption("mc.cores", 1L),
open_progress = interactive() && !isatty(stdout()) &&
!identical(Sys.getenv("RSTUDIO"), "1"),
...,
boost_lib = NULL, eigen_lib = NULL
)
Arguments

# 1: Start game


git_game - RStudio
example.Rmd
Knit on Save
Knit
Run
Publish
Source
Visual
Outline
---
title: "example"
author: "Felicia Bongiovanni"
date: "2025-07-04"
output: html_document
---
```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
```
## R Markdown
This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:
```{r cars}
summary(cars)
```
## Including Plots
You can also embed plots, for example:
```{r pressure, echo=FALSE}
17:1
R Markdown
Console
Terminal
Background Jobs
R 4.4.0 · ~/Documents/git_game/
R version 4.4.0 (2024-04-24) -- "Puppy Cup"
Copyright (C) 2024 The R Foundation for Statistical Computing
Platform: aarch64-apple-darwin20
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New Folder
New File
Delete
Rename
More
Home > Documents > git_game
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Jul 4, 2025, 3:53 PM
example.Rmd
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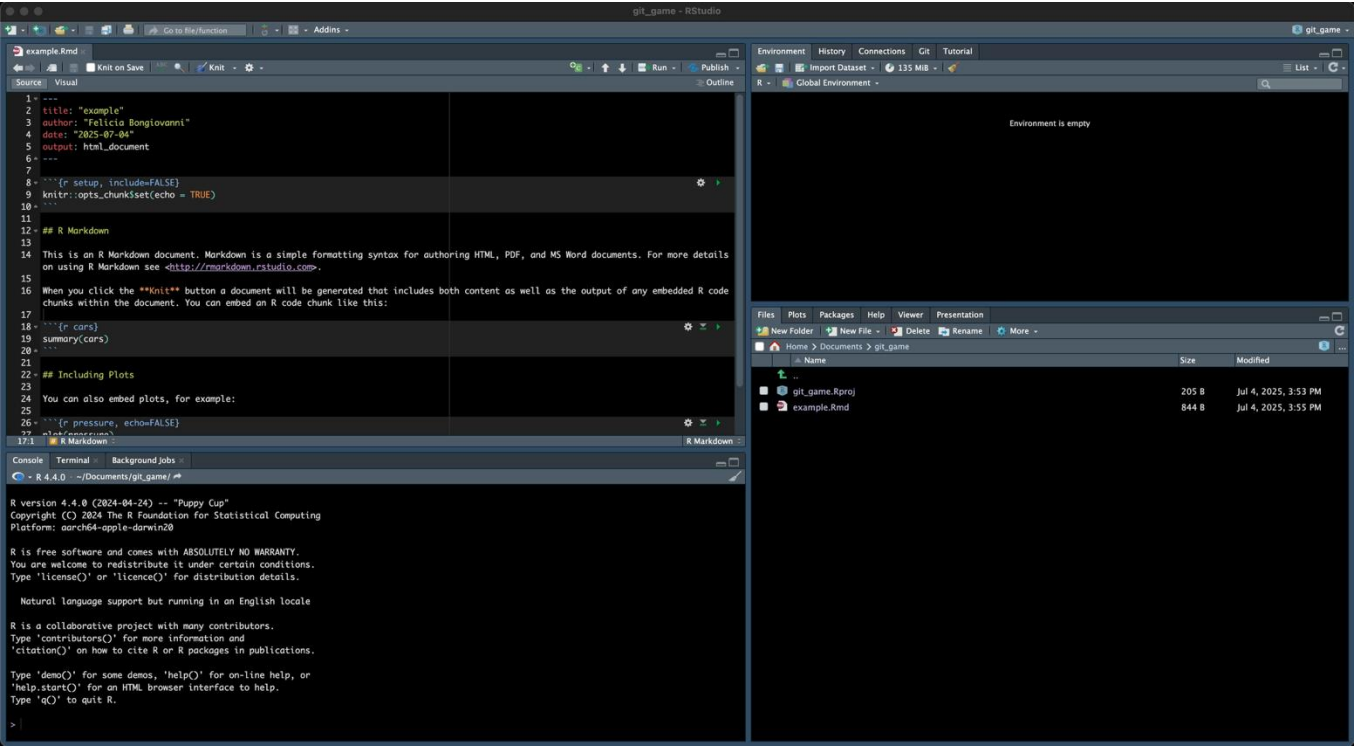
```

# 1: Start game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More
Home > Documents > git_game
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example.Rmd
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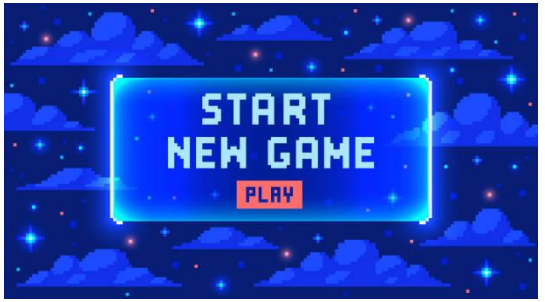
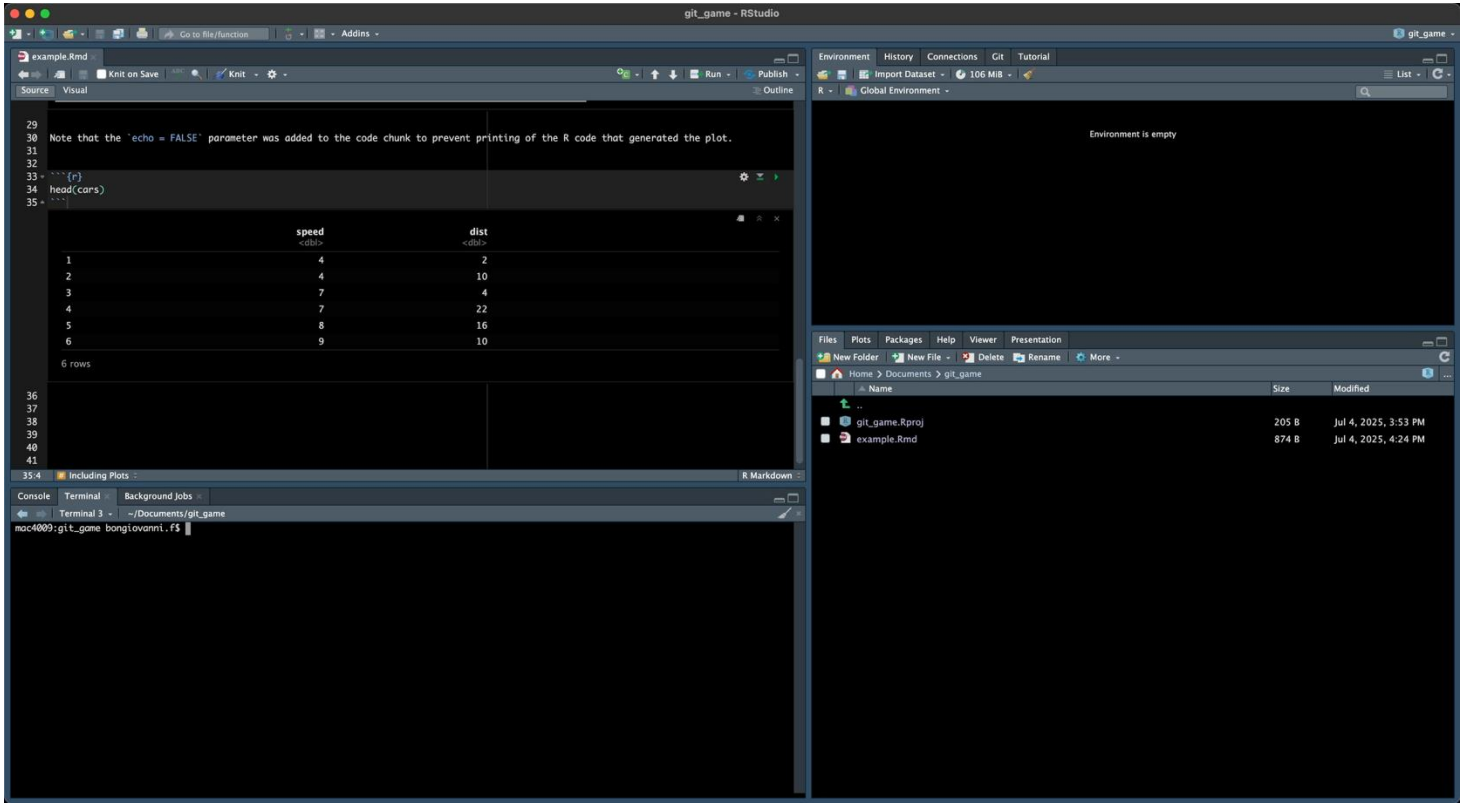
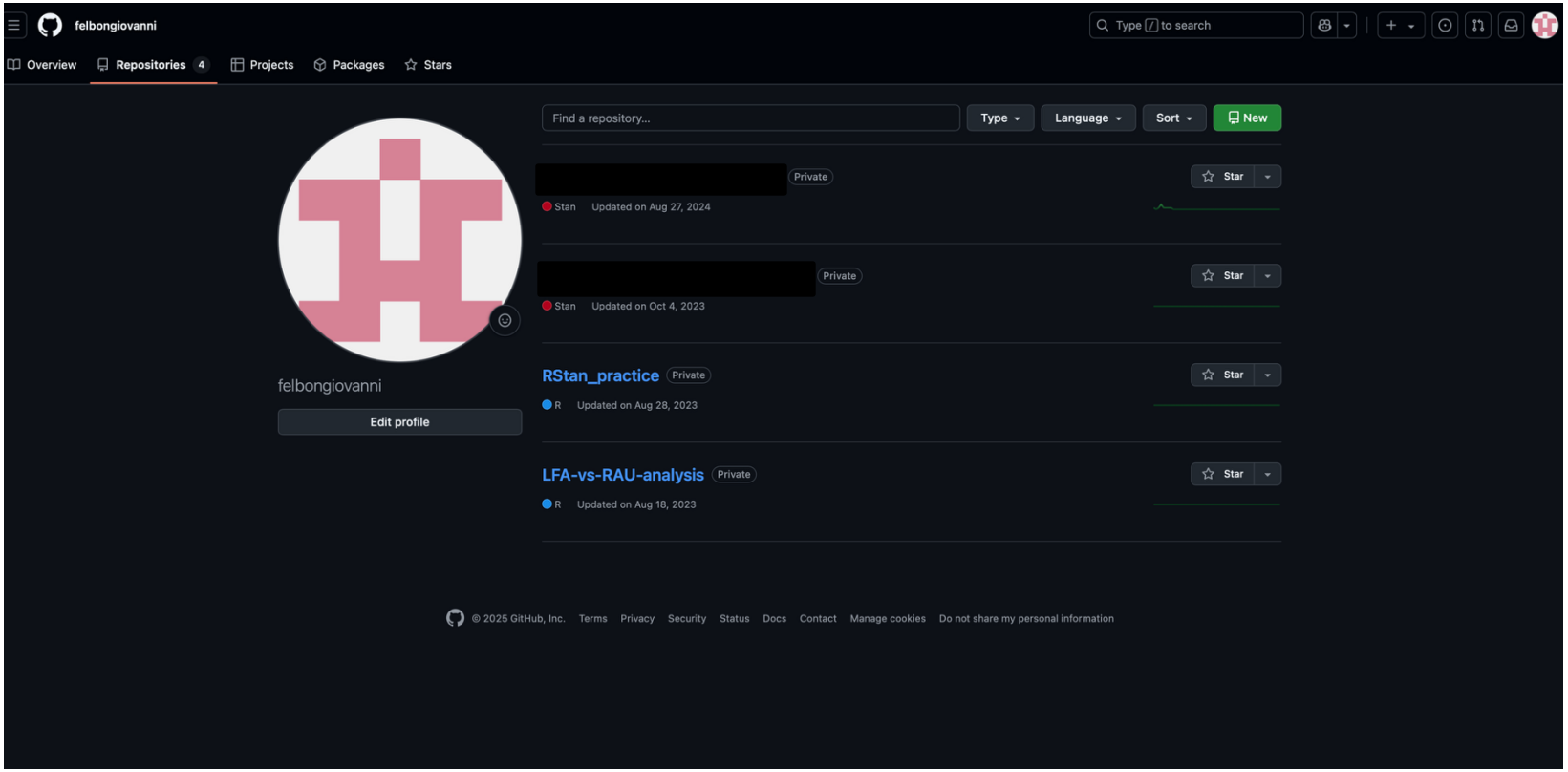

START
NEW GAME
PLAY
```

# 2: Initialising game



# 3: Store game in multiple places



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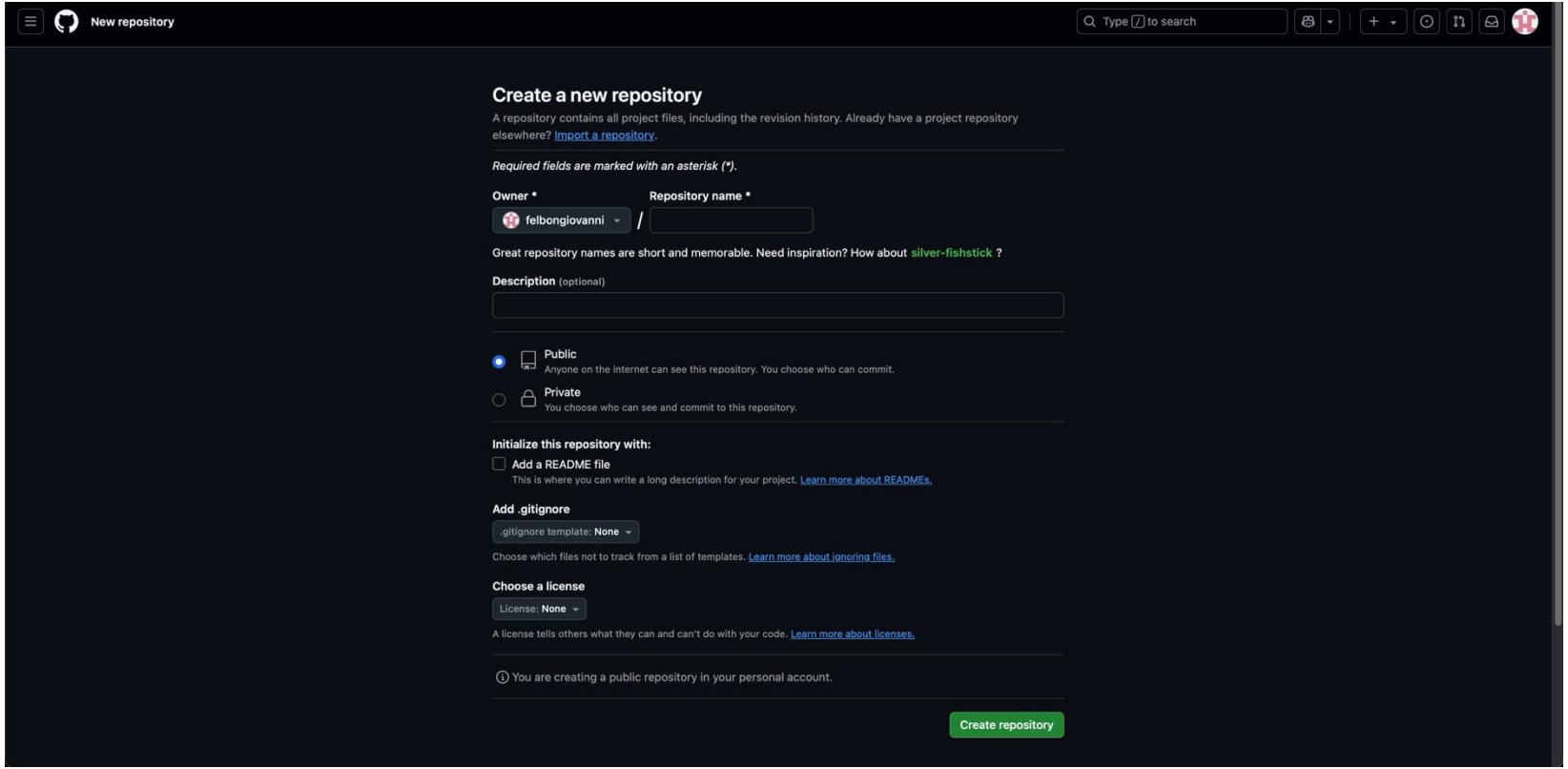

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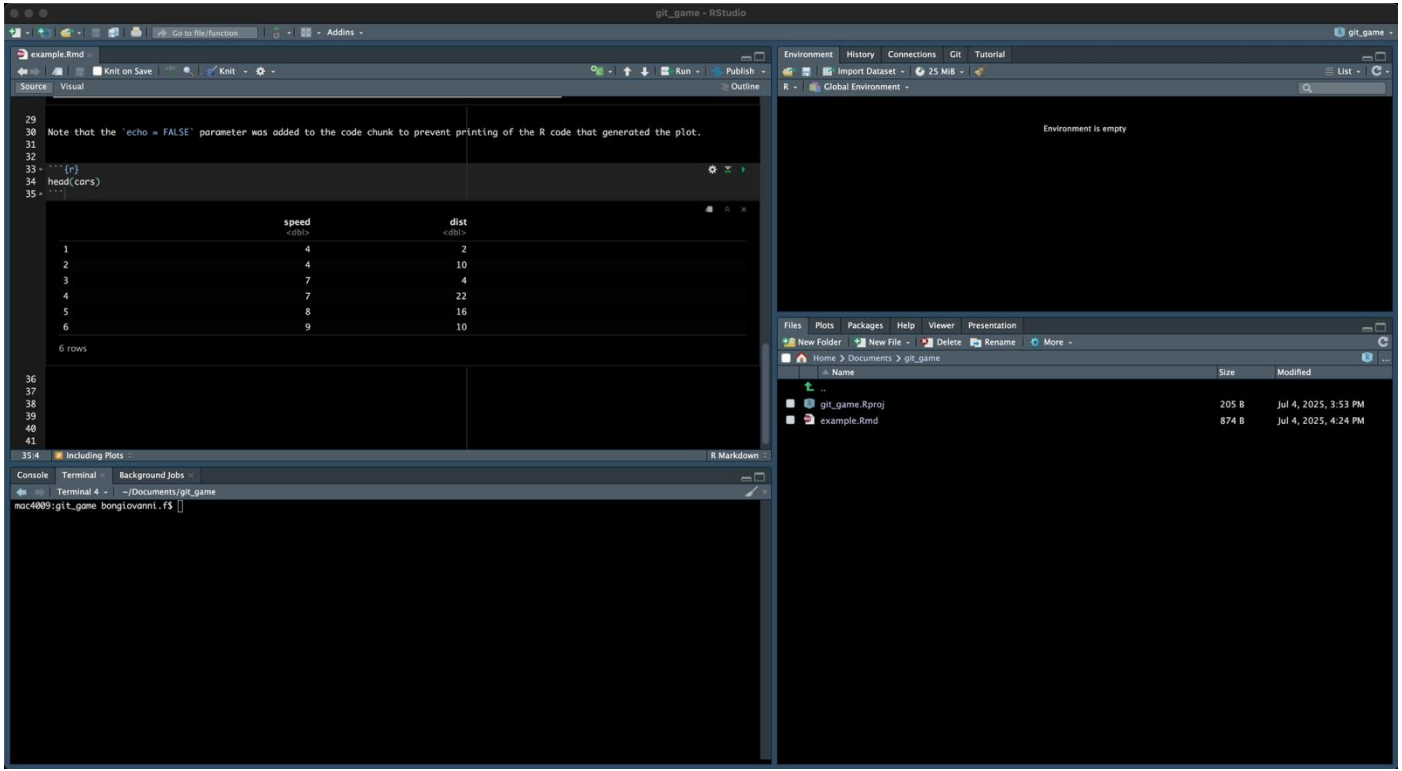


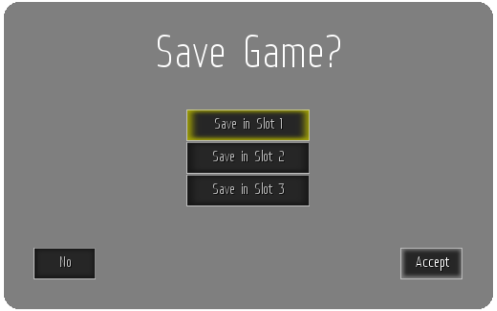

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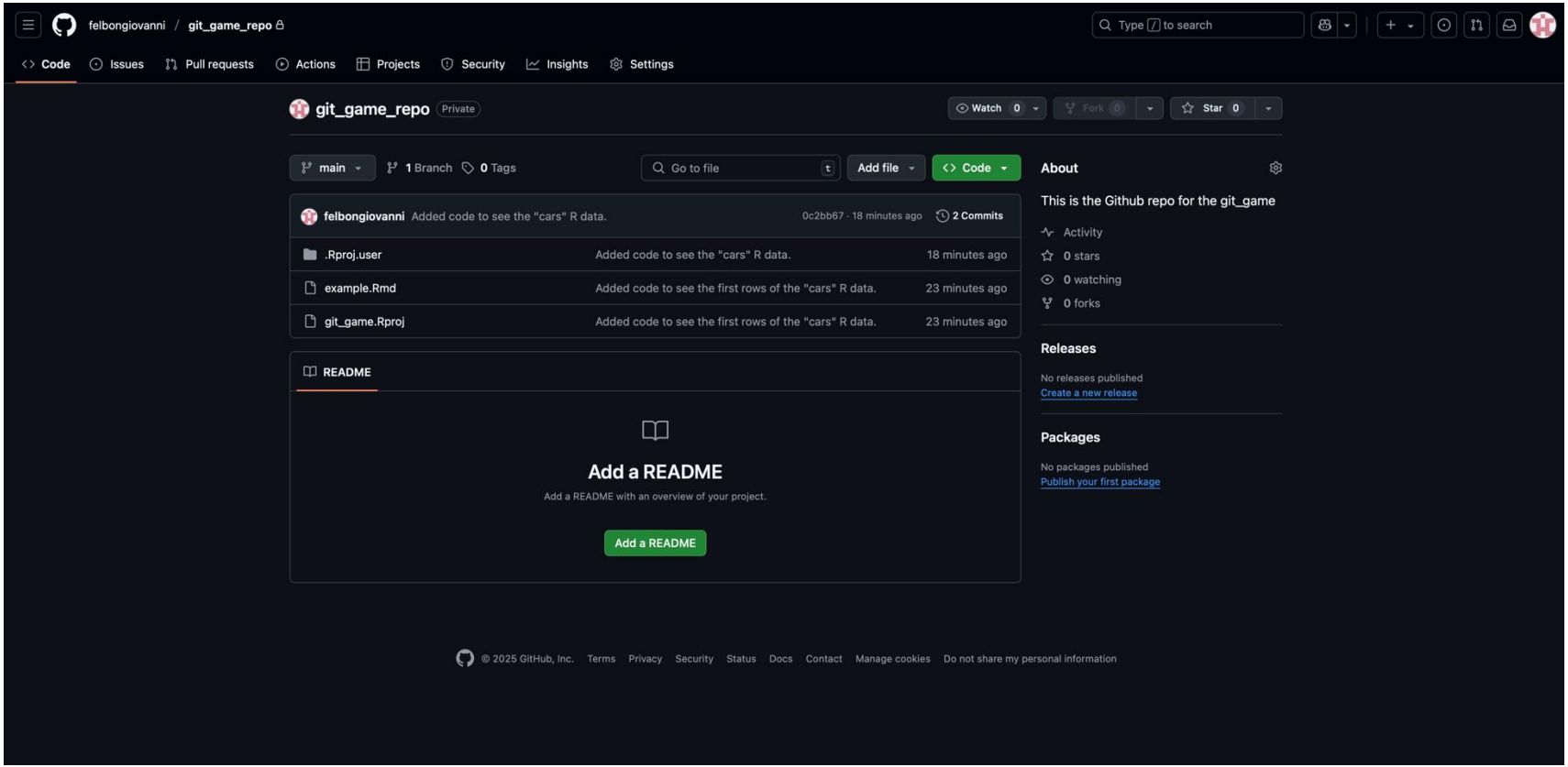
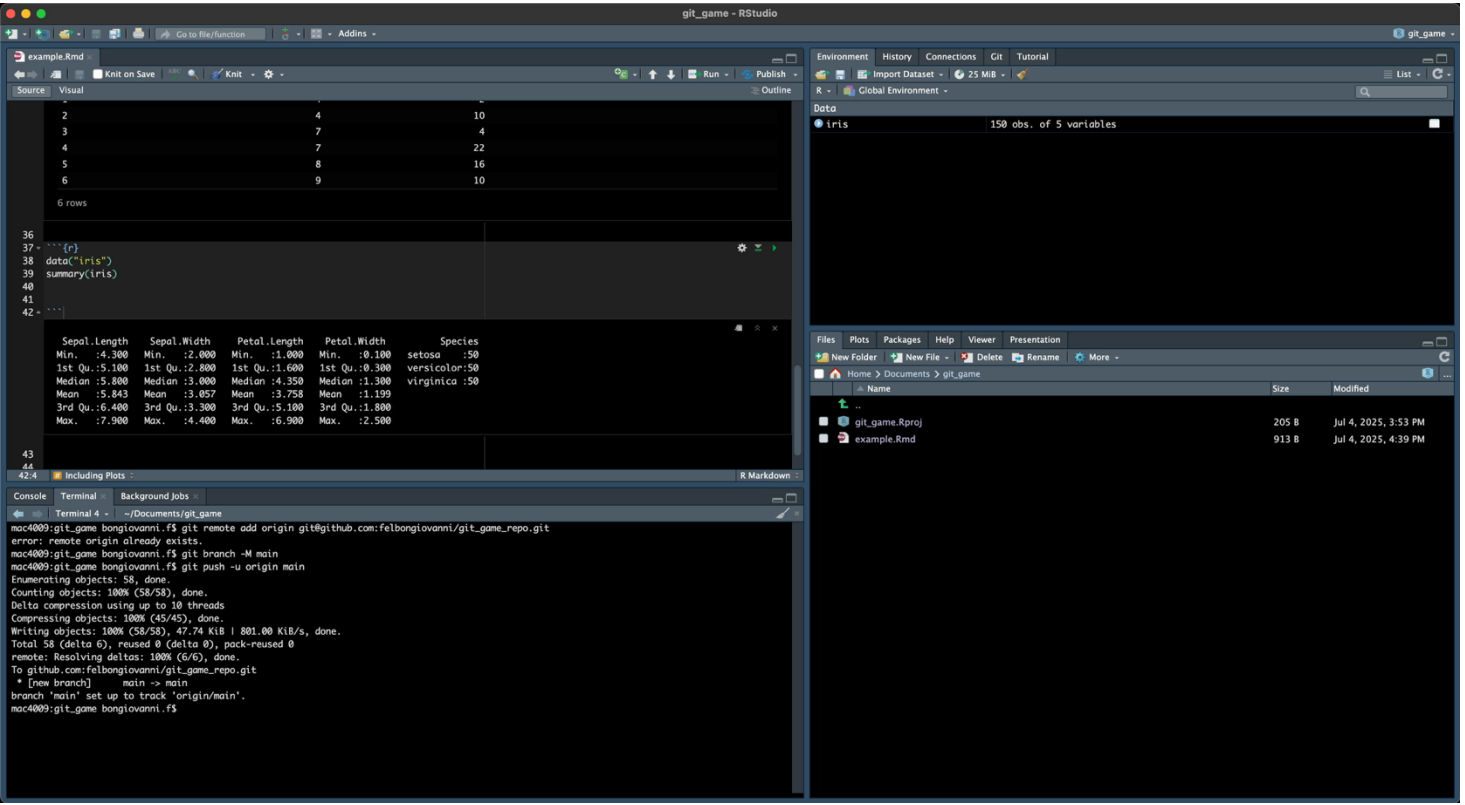
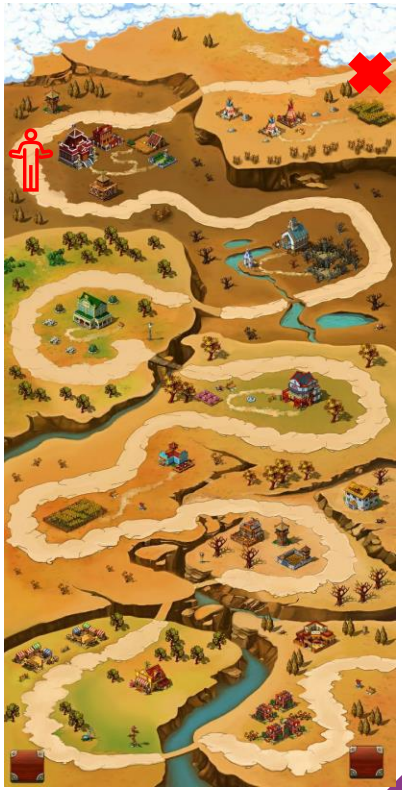


# 4: Save your checkpoints!



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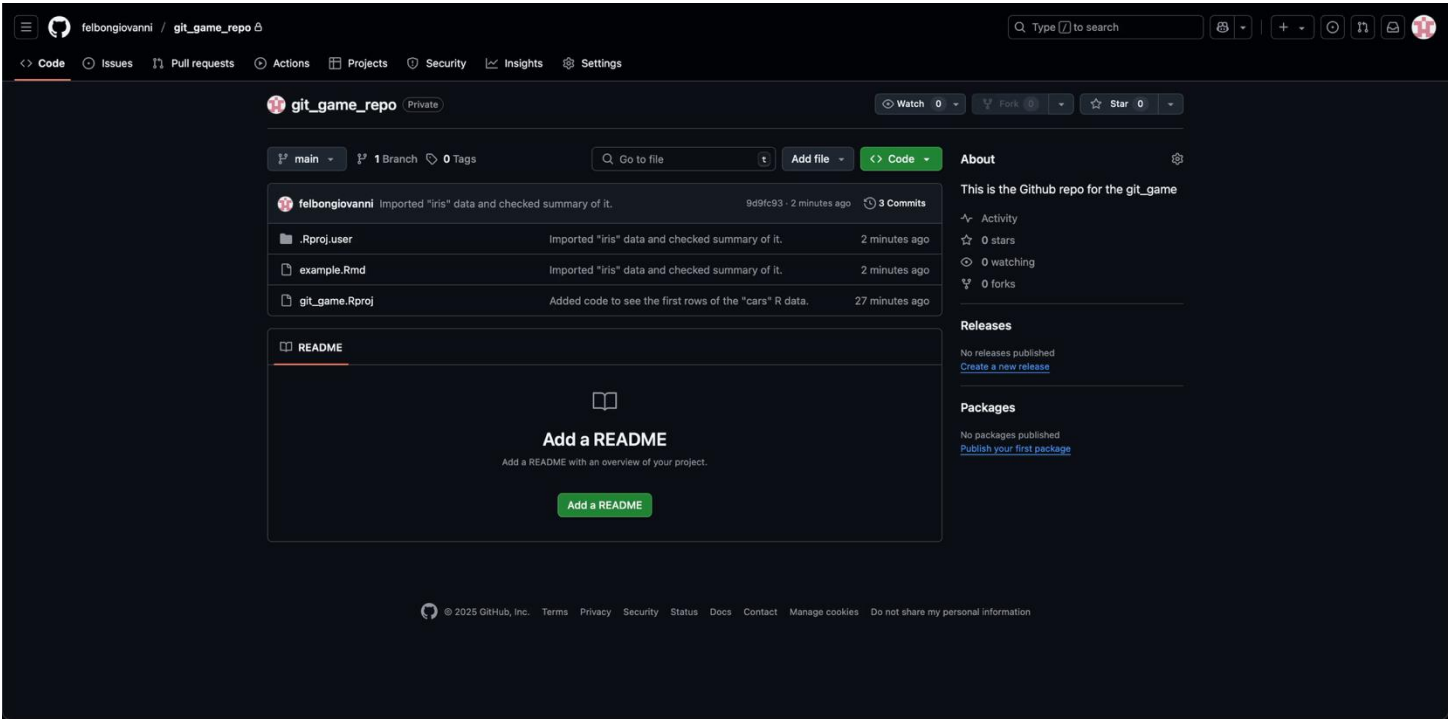


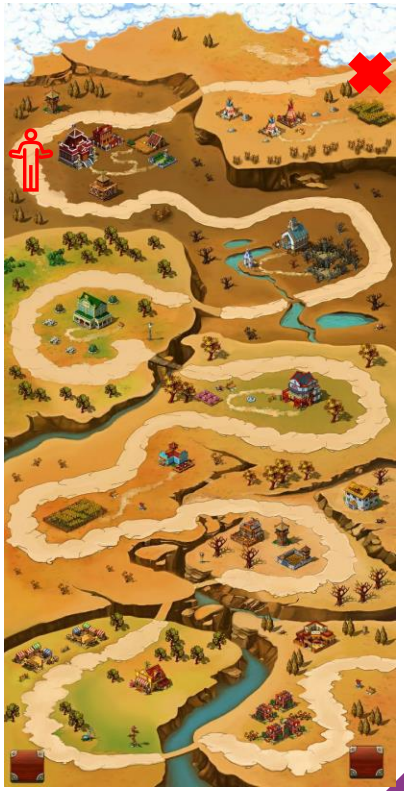

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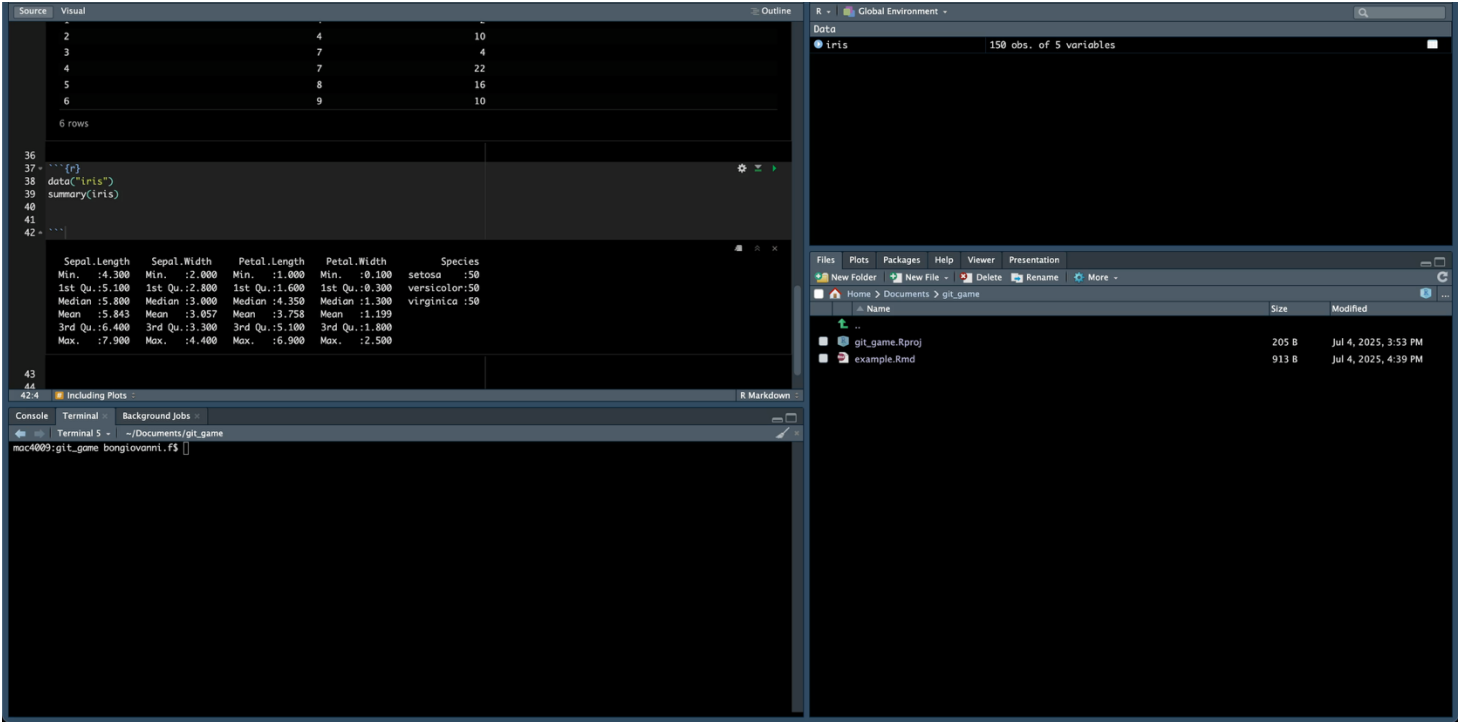
# 5: Multiplayer mode



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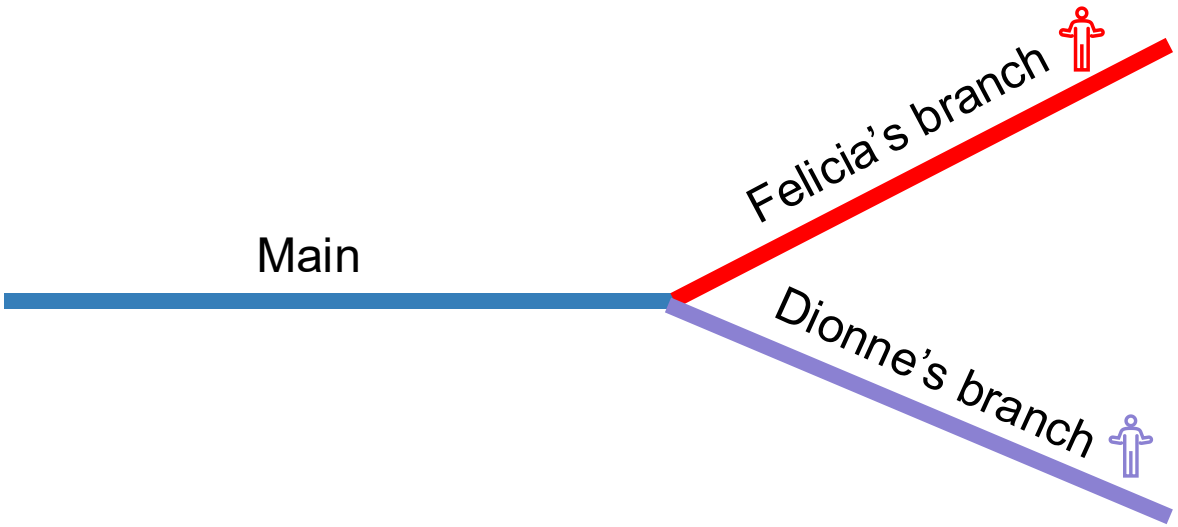

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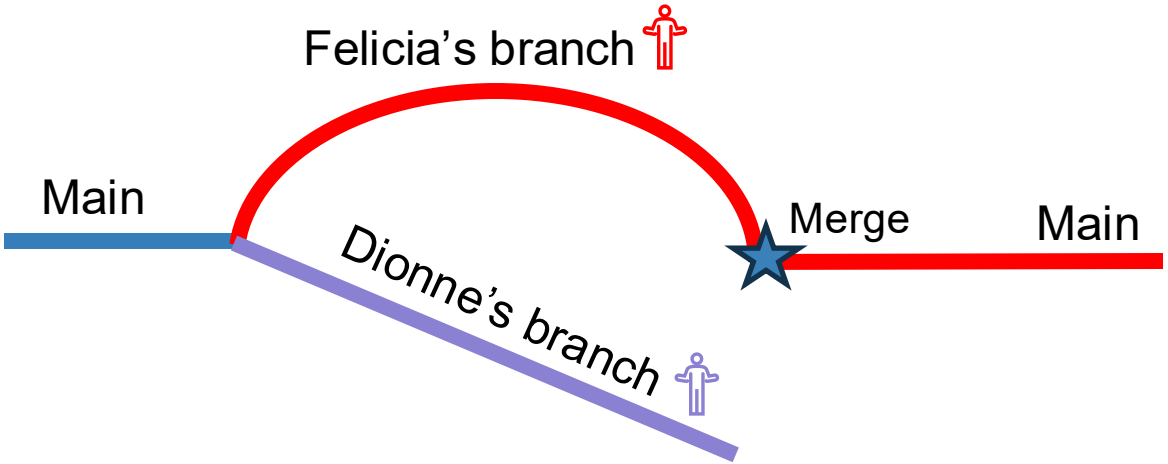

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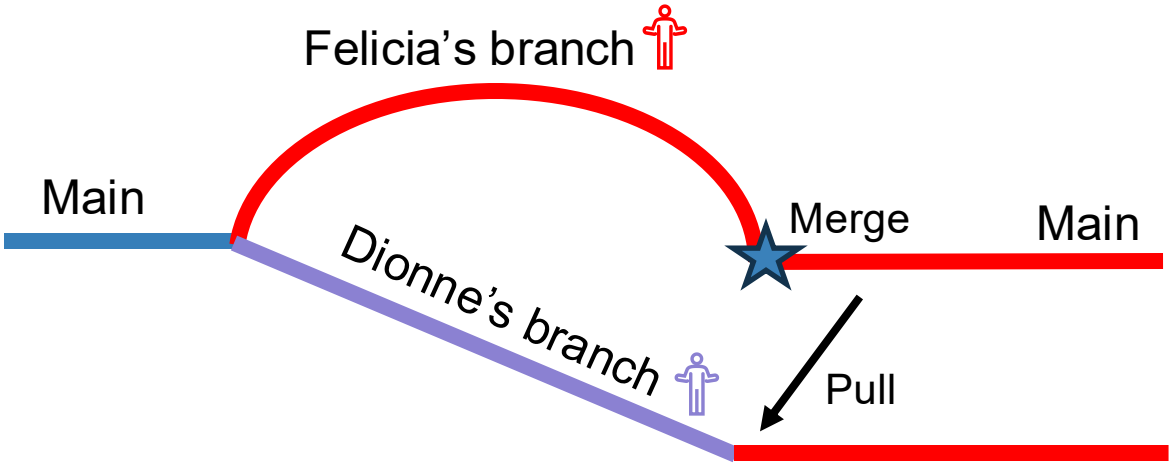

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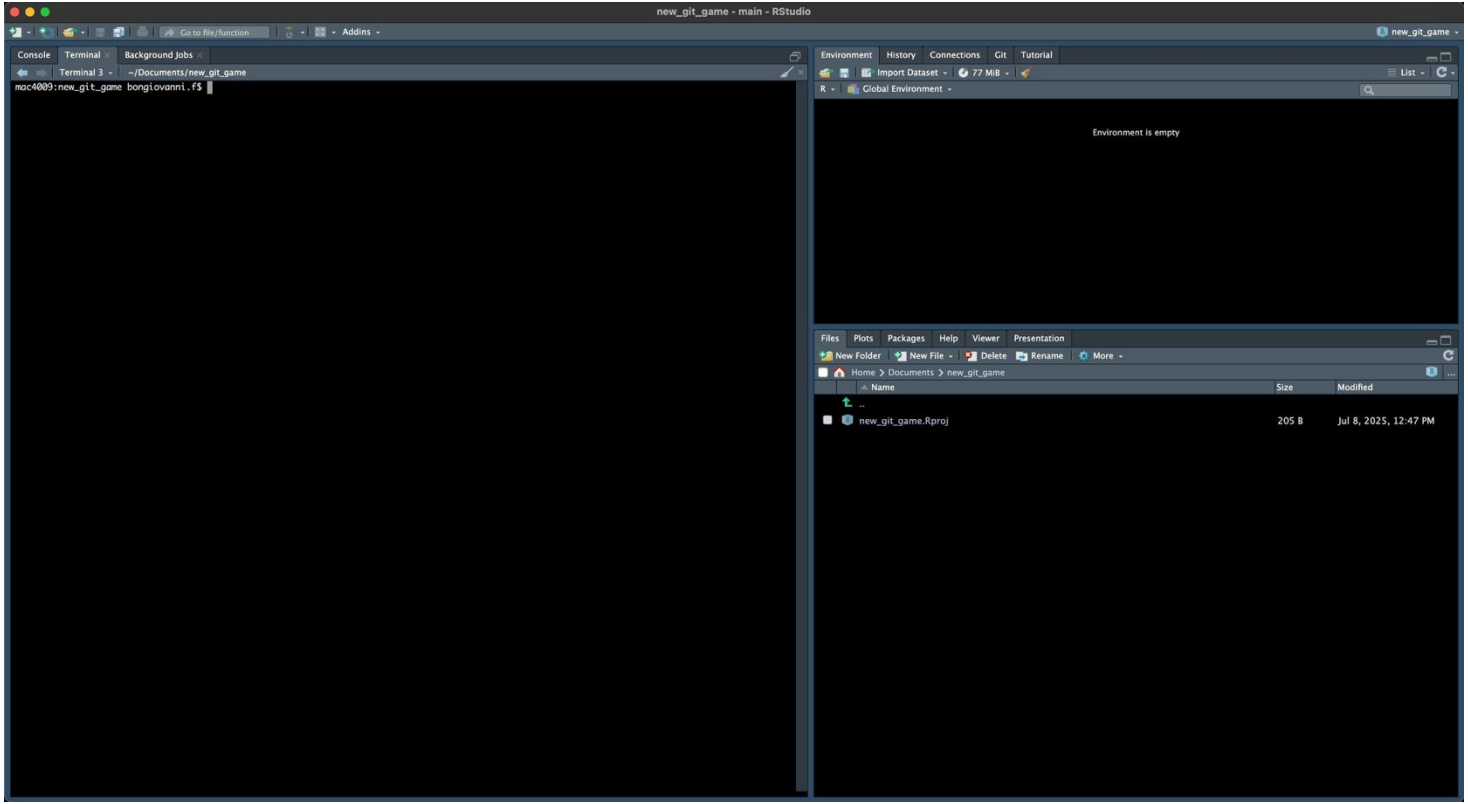
# 6: Loading a game



# Benefits to using git for collaboration

- See what changes other people have made and learn from them
- Ease of sharing
- Code reproducibility

# Key takeaways

- **Git** is a version control system
- **Github** is where you can store your git repositories
- Starting is the hardest part
- Loads of tutorials and help online!

**Would you like to give a seminar, workshop, short talk at the R-Ladies Melbourne meetups?**

# You can find us...