

Workflows for Reproducible Research with R & Git

Build your own Binder
Exercise

Organizers:

Bernd Weiß
Johannes Breuer
Arnim Bleier

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Exercise: create Repository

1. Create a git repository from the 3 in
content/exercises/Exercise_Binder_*
remove “Exercise_Binder_” from their filenames.
2. Push the repository to GitHub

Exercise: enable the R environment

1. Add a runtime.txt to your repository following the convention

R-version-YYYY-MM-DD

use <https://github.com/arnim/ggplot2Demo> as a template.

1. Launch your repository
 - a. Go to <https://mybinder.org>
 - b. Type the URL of your repo into the URL-box.
 - c. As you type, the webpage generates a link you may share with others

If everything worked... you'll see a JupyterLab interface

What is missing?

Exercise: add dependencies

1. Add a install.R to your repository and use <https://github.com/arnim/ggplot2Demo> as a template. The file should trigger the installation of *tidyverse*.
2. Add data and other needed files to your repository
3. Add the share link to your readme.md

Exercise: convert Rmd to Jupyter

1. Enable Jupyter via a requirements.txt file in your repository.
Hint: have a look at the binder/postBuild in the ggplot2Demo GH repository.
 2. Open your *.Rmd file as a Notebook using Jupyter
 3. Knit your *.Rmd file as HTML using RStudio
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1. **Share the link to your repository with others :)**

Exercise: explore the Binderverse

1. <https://github.com/binder-examples>
2. <https://binderlytics.herokuapp.com/binder-launches/binder>
3. <https://archive.analytics.mybinder.org>
4. Explore the use of Zenodo or Dataverse via MyBinder
5. Explore Python, Julia or latex via MyBinder

Special thanks to the BinderHub Community

<https://github.com/jupyterhub/binderhub/graphs/contributors>

and many more who aren't in the GitHub history.

Special thanks to **Tim Head & The Turing Way**

for pioneering and sharing training resources

<https://build-a-binder.github.io/>

<https://github.com/alan-turing-institute/the-turing-way/tree/main/workshops>

How to binderize your repository?

Documentation of the repo2docker Configuration Files

https://repo2docker.readthedocs.io/en/latest/config_files.html

Discourse Jupyter <https://discourse.jupyter.org/>

Binder Examples <https://github.com/binder-examples>

<https://github.com/binder-examples/r>

Exercise Solution => https://github.com/arnim/COVID-19_Binder