R Version Control

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R Version Control with Git/GitHub

Git/GitHub enables continuous software/code development by tracking code changes to the **initial commit**, tracking who made the changes and enabling code collaboration. Here I will go through the basics on how to step-up **Git/GitHub** for version control with **R/RStudio**. Although the focus is on R/RStudio, the same procedure can be followed by those who use other softwares for data analysis e.g **Python**, **LaTex**, **Julia** etc.

Required programs

To start off, ensure you have the following programs installed:

1. **Git** – the base program for tracking code changes.

   - **Windows**: You can download Git here. Double-click the downloaded .exe file to start the installation process.

   - **macOS**: First you need to install **Homebrew**. Copy and paste the Homebrew download link from (https://brew.sh/) to the Terminal and run.

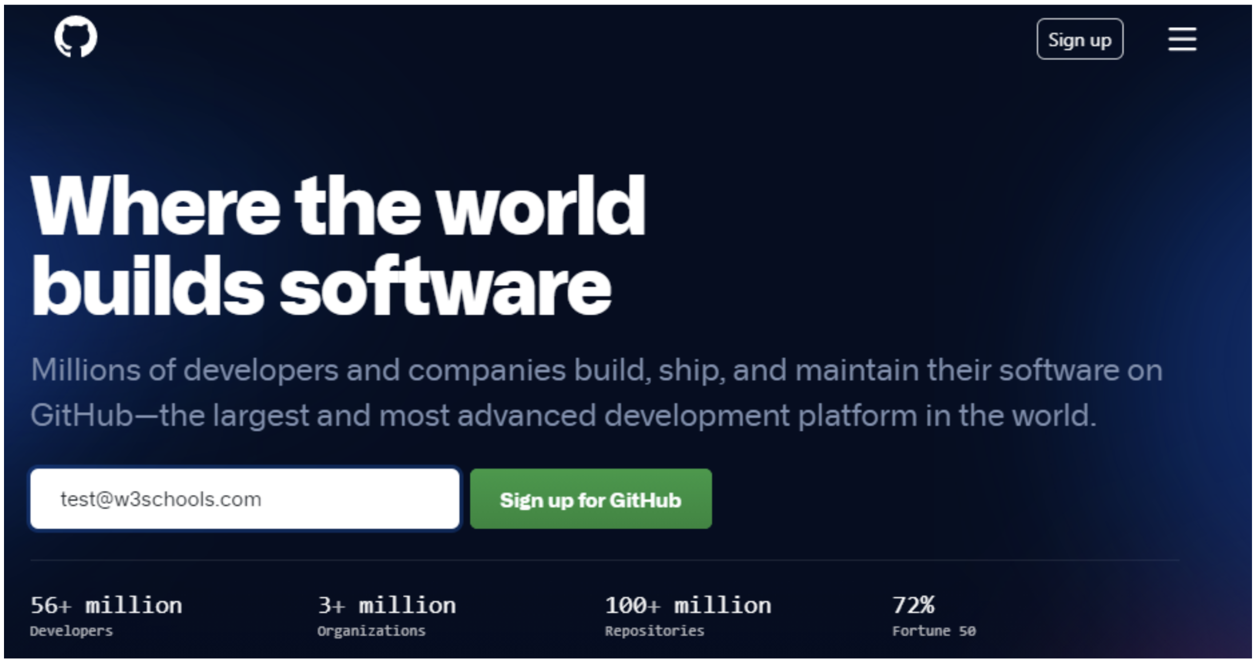
   If you already have Homebrew installed, open Terminal and type:

   ```
   brew install git
   ```

2. **R** – the base R program
   - **Windows**: You can download R here
   - **macOS**: You can download R here
3. **RStudio** – IDE (integrated development environment) for R
   - **Windows and macOS**: You can download RStudio here
4. **GitHub Desktop** – for version control and collaboration
   - **Windows and macOS**: You can download GitHub Desktop here

Getting started

1. **Sign up for GitHub** – Got to GitHub and create a free account:



Sign up

Where the world builds software

Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.

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Sign up for GitHub

56+ million
Developers

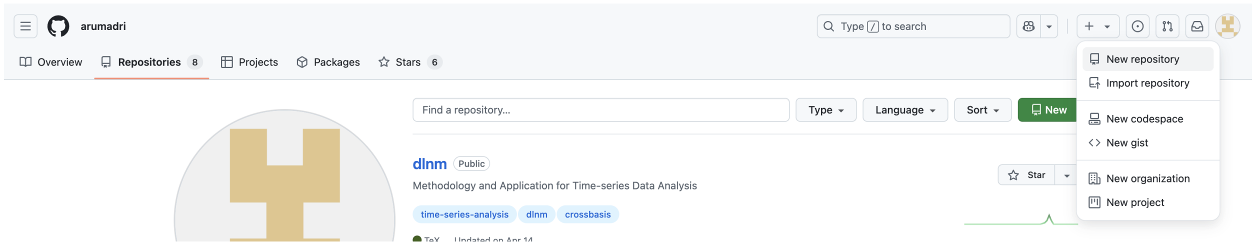
3+ million
Organizations

100+ million
Repositories

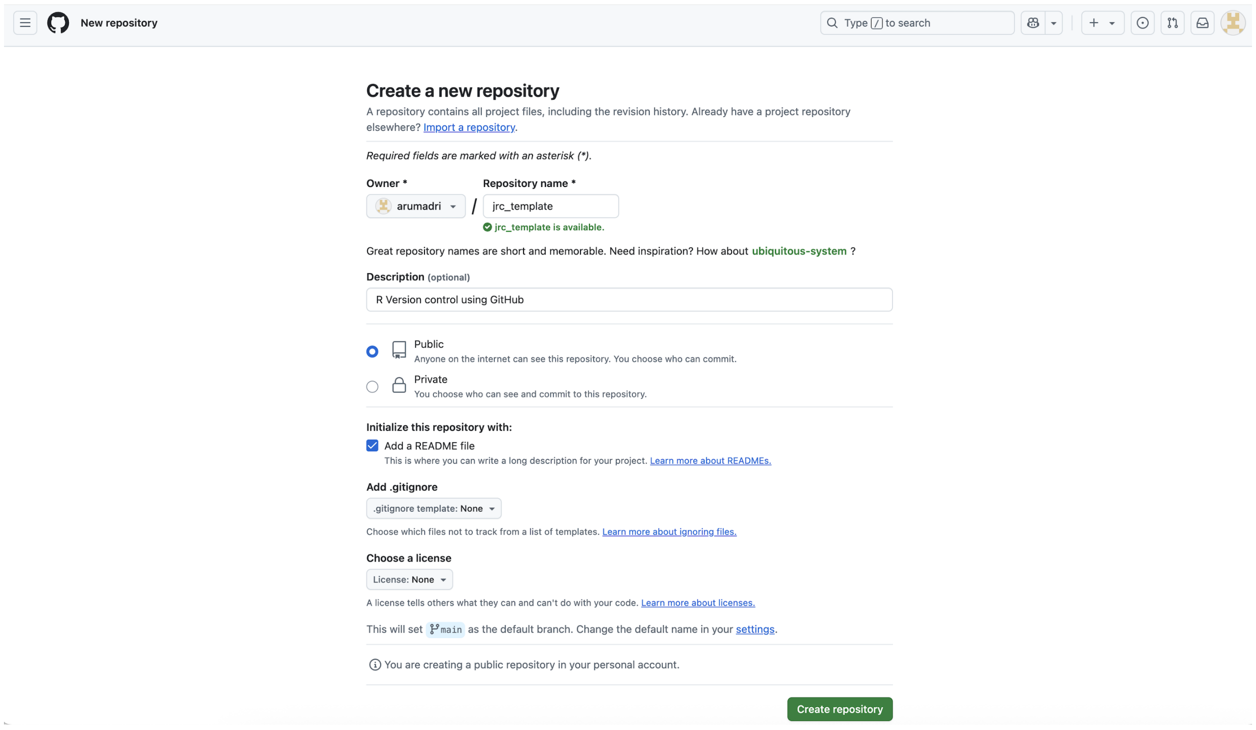
72%
Fortune 50

Figure 1: GitHub account setup

2. **Create a Repository** After signing in, click the + button to create a new repository:



3. **Fill in the repository details** (name, description, public/private, etc.) and click Create repository:



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Required fields are marked with an asterisk (*).

Owner * arumadri / Repository name * jrc_template

jrc_template is available.

Great repository names are short and memorable. Need inspiration? How about ubiquitous-system ?

Description (optional): R Version control using GitHub

● Public
Anyone on the internet can see this repository. You choose who can commit.

○ Private
You choose who can see and commit to this repository.

Initialize this repository with:

✓ Add a README file
This is where you can write a long description for your project. Learn more about READMEs.

Add .gitignore

.gitignore template: None

Choose which files not to track from a list of templates. Learn more about ignoring files.

Choose a license

License: None

A license tells others what they can and can't do with your code. Learn more about licenses.

This will set `main` as the default branch. Change the default name in your settings.

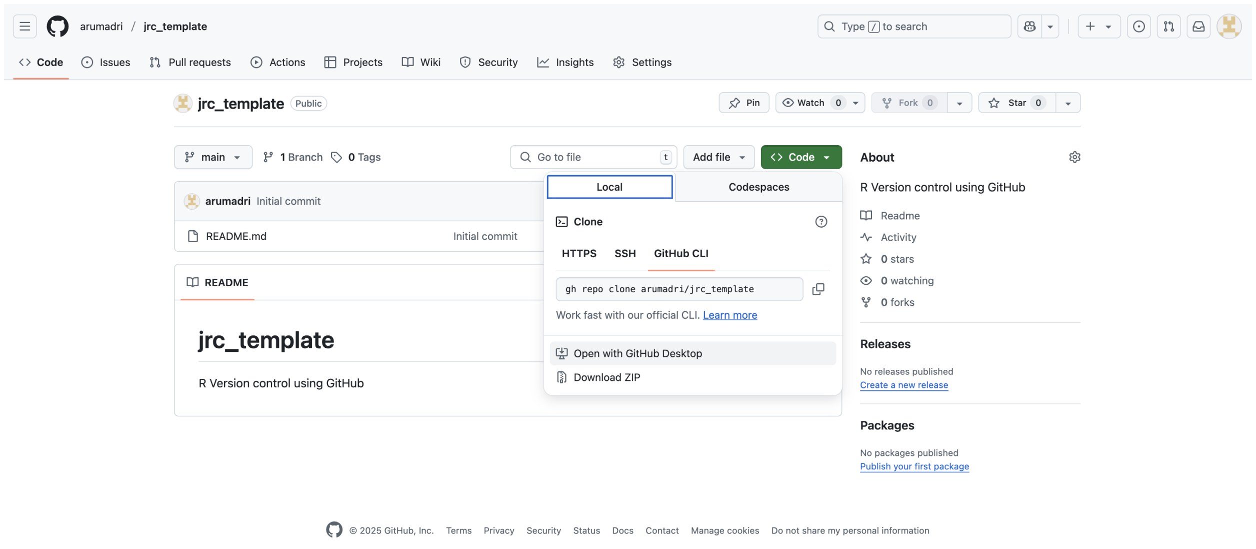
You are creating a public repository in your personal account.

Figure 2: GitHub new repository details

Now you have set up your **remote repository**!!

4. **Clone remote repository to local machine (laptop/desktop)**

Inside the repository click the <>**Code** button and select **Open with GitHub Desktop** in the drop down menu.



```
gh repo clone arumadri/jrc_template
```

Work fast with our official CLI. Learn more

arumadri Initial commit

README.md Initial commit

jrc_template

R Version control using GitHub

R Version control using GitHub

No releases published
Create a new release

No packages published
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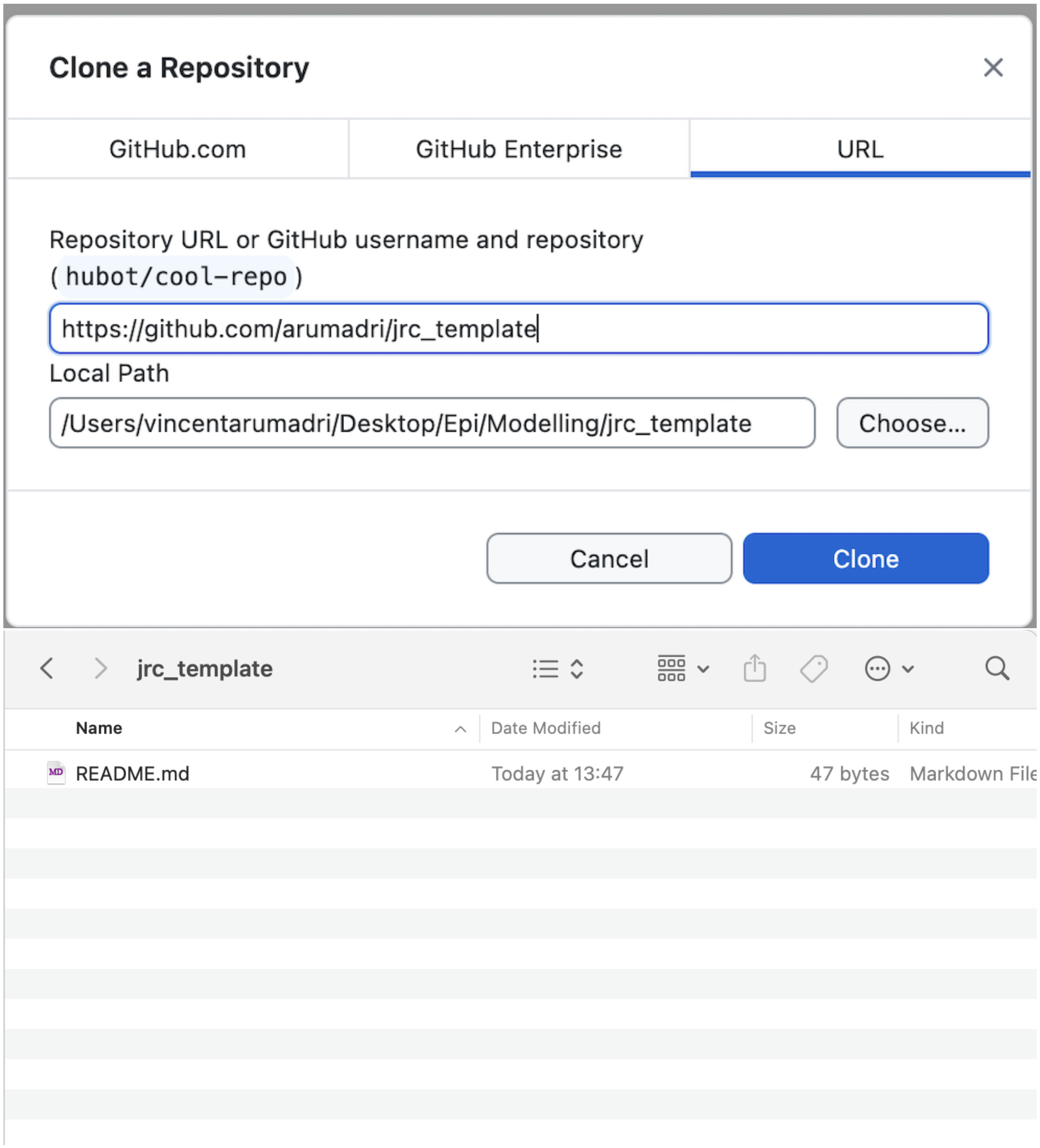
Figure 3: Clone remote to local

5. **Select path for local repository**



Repository URL or GitHub username and repository (`hubot/cool-repo`)

```
https://github.com/arumadri/jrc_template
```

Local Path

```
/Users/vincentarumadri/Desktop/Epi/Modelling/jrc_template
```

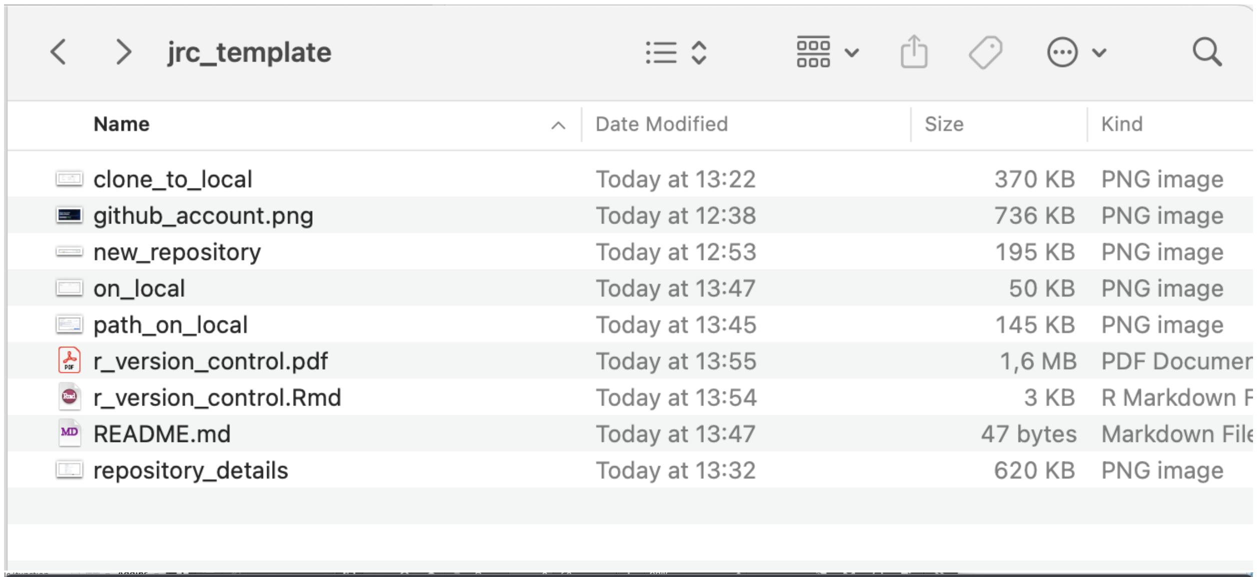
Name	Date Modified	Size	Kind
README.md	Today at 13:47	47 bytes	Markdown File

6. **Add or (save your new r scripts/files) to this folder**

This will initialize the **commit** and **push** prompt in GitHub Desktop to commit and push the changes respectively to the **remote repository**.

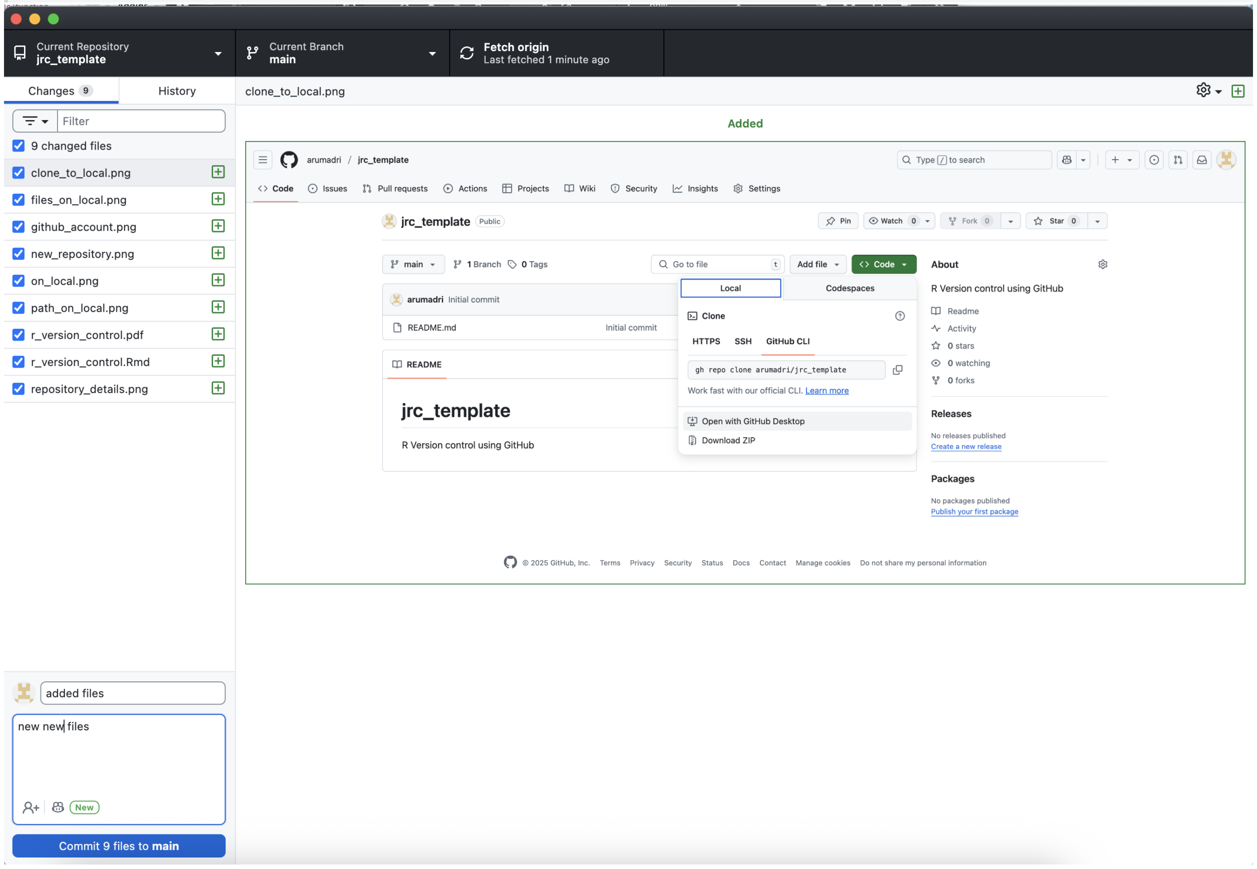
These prompts enable changes made to the folder (adding new files) or files (new edits to code) on the **local** machine to be **committed and pushed** to the **remote** for tracking and hence **version control**.

**



jrc_template

Name	Date Modified	Size	Kind
clone_to_local	Today at 13:22	370 KB	PNG image
github_account.png	Today at 12:38	736 KB	PNG image
new_repository	Today at 12:53	195 KB	PNG image
on_local	Today at 13:47	50 KB	PNG image
path_on_local	Today at 13:45	145 KB	PNG image
r_version_control.pdf	Today at 13:55	1,6 MB	PDF Documer
r_version_control.Rmd	Today at 13:54	3 KB	R Markdown F
README.md	Today at 13:47	47 bytes	Markdown File
repository_details	Today at 13:32	620 KB	PNG image



Current Repository jrc_template · Current Branch main · Fetch origin — Last fetched 1 minute ago

Changes 9 · History

9 changed files

- clone_to_local.png
- files_on_local.png
- github_account.png
- new_repository.png
- on_local.png
- path_on_local.png
- r_version_control.pdf
- r_version_control.Rmd
- repository_details.png

clone_to_local.png — Added

arumadri / jrc_template

jrc_template Public

arumadri Initial commit

README.md Initial commit

jrc_template

R Version control using GitHub

```
gh repo clone arumadri/jrc_template
```

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Releases: No releases published · Create a new release

Packages: No packages published · Publish your first package

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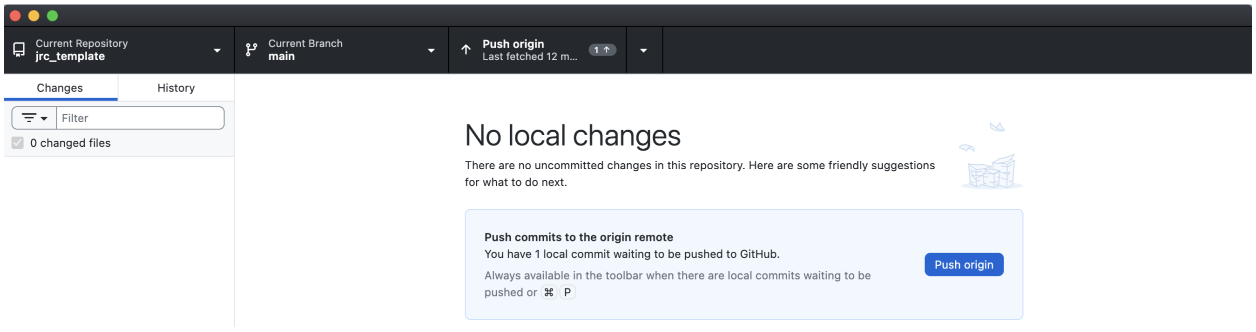
Summary: added files

Description: new new files

Commit 9 files to main

7. **Push** and **pull** changes to or from GitHub



No local changes

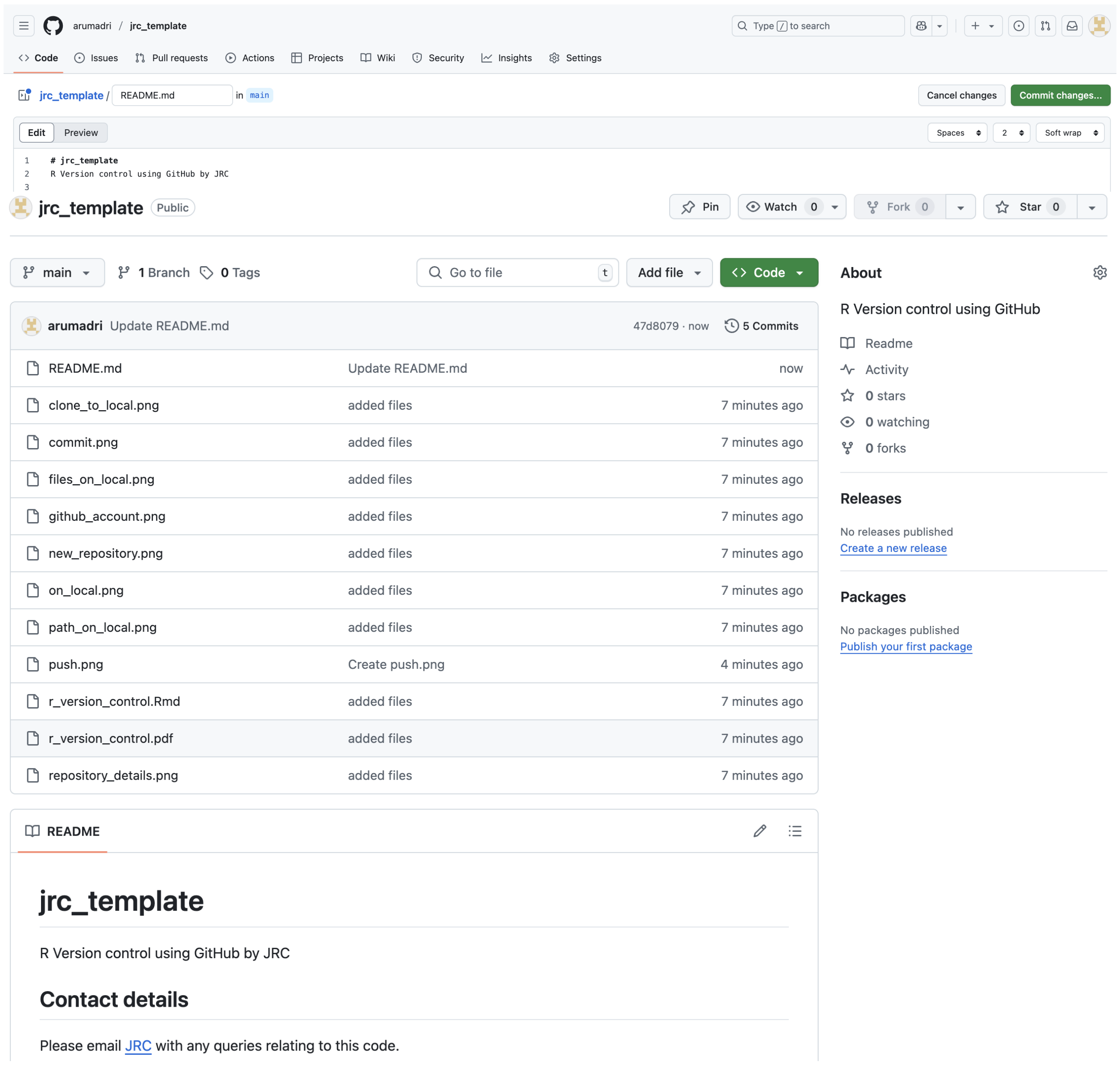
There are no uncommitted changes in this repository. Here are some friendly suggestions for what to do next.

Push commits to the origin remote

You have 1 local commit waiting to be pushed to GitHub.

Always available in the toolbar when there are local commits waiting to be pushed or ⌘ P

Figure 4: Push



```
# jrc_template
R Version control using GitHub by JRC

```

arumadri Update README.md 47d8079 · now 5 Commits

README.md	Update README.md	now
clone_to_local.png	added files	7 minutes ago
commit.png	added files	7 minutes ago
files_on_local.png	added files	7 minutes ago
github_account.png	added files	7 minutes ago
new_repository.png	added files	7 minutes ago
on_local.png	added files	7 minutes ago
path_on_local.png	added files	7 minutes ago
push.png	Create push.png	4 minutes ago
r_version_control.Rmd	added files	7 minutes ago
r_version_control.pdf	added files	7 minutes ago
repository_details.png	added files	7 minutes ago

About

R Version control using GitHub

Releases

No releases published

Create a new release

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Publish your first package

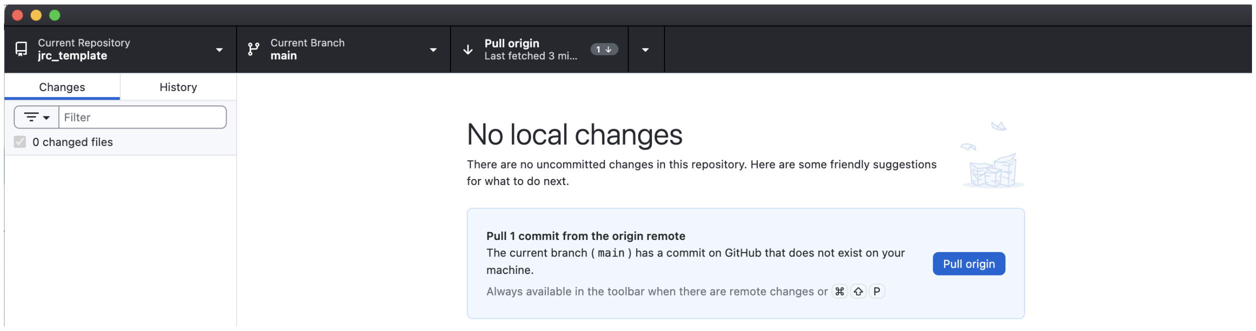
README

jrc_template

R Version control using GitHub by JRC

Contact details

Please email JRC with any queries relating to this code.



No local changes

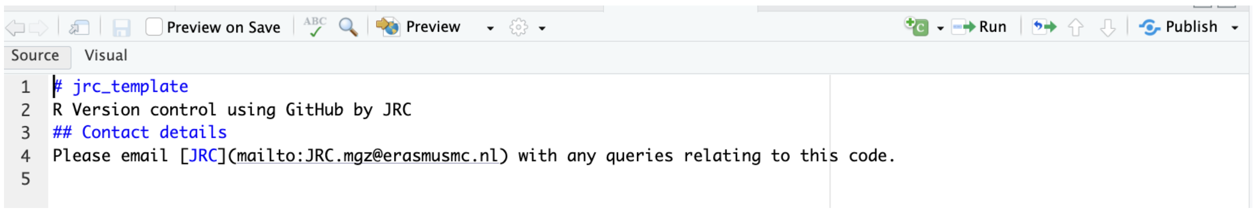
There are no uncommitted changes in this repository. Here are some friendly suggestions for what to do next.

Pull 1 commit from the origin remote

The current branch (main) has a commit on GitHub that does not exist on your machine.

Always available in the toolbar when there are remote changes or ⌘ ⇧ P

Figure 5: Pull to local



```
# jrc_template
R Version control using GitHub by JRC
## Contact details
Please email [JRC](mailto:JRC.mgz@erasmusmc.nl) with any queries relating to this code.
```

Figure 6: Commit changes on local