



Knowledge Exchange Hub *for Mathematical Sciences*

UK KE Hub Mathematics

Session 2: Getting Started with AI Coding Tools

- Quick recap of Session 1
- What is GitHub?
- Git/GitHub basics
- Hands-on: Create your first repo and try Copilot suggestions

Learning Objectives

- Understand the basics of Git and what GitHub is for
- be able to make a repository in GitHub and `clone` it to access it via VSCode
- `commit` and `push` changes to your repository
- understand what branches are
- be able to make a pull request (PR) and merge it.

Setup Steps (Quick)

Hopefully we are all set up, if not, here is a quick set up:



Go to <https://github.com> → Sign up / sign in



Install recommended extensions in VSCode: GitHub Pull Requests, Python (or your language), GitHub Copilot (optional)

What is Git / GitHub?

Git is a version control system for tracking changes in files. It is incredibly useful for:

- recovering old versions of code, reverting changes
- collaborating with others on code
 - allowing multiple people to change the same codebase at the same time and stay up to date with each others changes
 - resolving conflicts where two people have made different changes to the same code

GitHub is a Git server. Its a remote location where you can host code that is stored in Git.

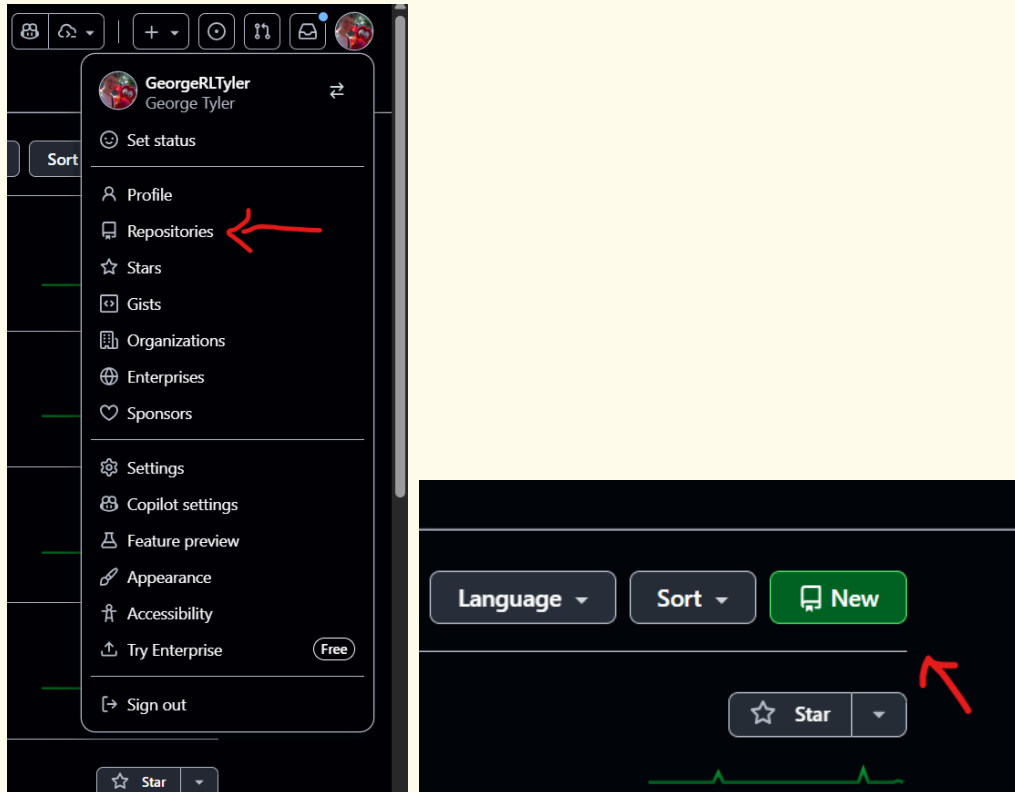
- GitHub provides a nice frontend for dealing with Git, making it more accessible
- It is *not* the only Git server, there are others such as GitLab, but it is by far the most popular.

Git is a very extensive tool and we will only be covering the very basics today. If you are interested in learning more about Git, there is a link on the handout to a video from MIT on version control with Git.

GitHub Basics

See session 2 handout for more information or follow our demo:

- Create a new repository on github by going to your profile and selecting `repositories` . Then select `New` .



Make a new repository! In practice, we use an appropriate name and description.


Create a new repository

Repositories contain a project's files and version history. Have a project elsewhere? [Import a repository](#).
Required fields are marked with an asterisk ().*

1

General

Owner *

 GeorgeRLTyler ▾

Repository name *

ExampleRepository

✔ ExampleRepository is available.

Great repository names are short and memorable. How about **urban-enigma**?

Description

THIS IS AN EXAMPLE

18 / 350 characters

2

Configuration

Hands-on activity

See session 2 handout for more information.

- In our new repository, we are going to generate a python script with copilot that generates the fibonacci numbers (or whatever you'd like!)
- Then lets commit and push these changes to our main branch.
Next steps: branches and pull requests.
- Lets make a new branch with `git checkout -b <new_branch_name>`
- commit and push a new change to this branch
- go to GitHub and open a new pull request.

Please ask for help if you are having difficulty!