



# **Python Scripting 9000**

**HWRS 401/501**

**09/06/2022**

# Announcements

- Grades for first forecast posted to D2L.
- Y'all did great. I left feedback if there were any minor notes about the format of your forecast files
- Second forecast assignment posted, due next Tuesday
- First cheat sheet assignment posted, due next Thursday

# Today

- Office hours after class till 10:30, tomorrow 1-2PM, and Monday 2-3pm via zoom or in Harshbarger 202c
- Please come if you have any doubts about your python/git/vscode installs. I will not be troubleshooting in class after today
- A quick note on assignments
- A better way to work with python+vscode through jupyter
- Computational environments + installing packages via conda
- Introduction to numpy (numerical python) and matplotlib (plotting)

# Assignments

- Next forecast: due next Tuesday (9/13) at midnight
  - Goal: Produce predictions for 1 and 2 week Verde river streamflow given up to last 30 days of data
  - Method: You must use numpy functions in your prediction. I will show you how to submit your code for your prediction for grading.
  - Grading: 1 point for submission, 1 point for committing your code to your GitHub repository, and 1 point for use of numpy in your code
  - I will dedicate ~20 minutes next Tuesday for Q&A on this

# Assignments

- First cheat sheet assignment due next Thursday at midnight
- This one's mainly for me to track if there are general misconceptions: completion will get you full points (stipulation below)
- I want to see a summary of all of the tools we've been getting familiar with, and how they relate to each other. You must address:
  - git, GitHub, GitKraken, python, conda, vscode, and jupyter
- This is entirely free-form: It can be a text document, a short powerpoint, hand written (legible) notes photocopied and uploaded, or as sophisticated as you want
- Use the internet as necessary, just provide links for what you found useful!!! This is also for you to reflect back on

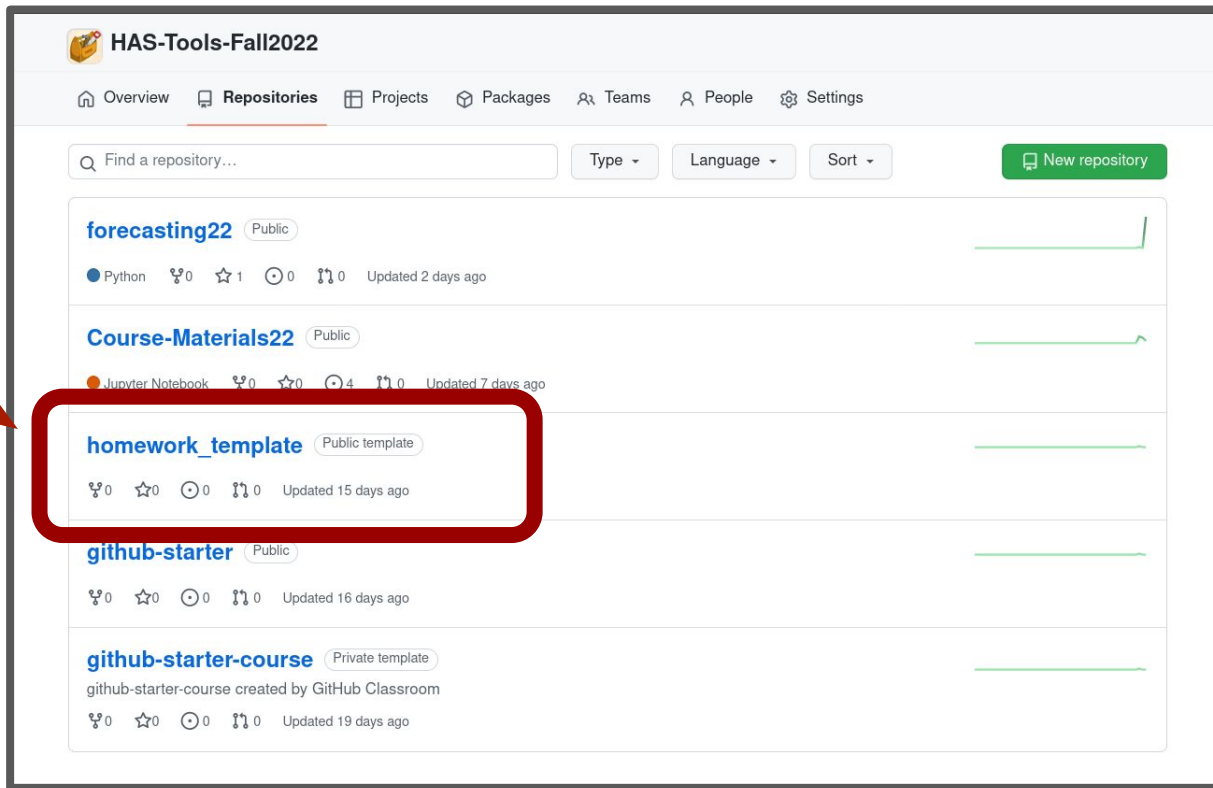
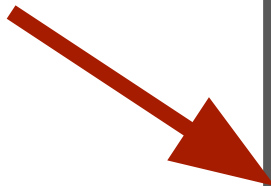
# The homework repo

The screenshot shows the GitHub interface for the repository **HAS-Tools-Fall2022**. The navigation bar includes links for Overview, Repositories (active), Projects, Packages, Teams, People, and Settings. Below the navigation bar is a search bar with the placeholder text "Find a repository..." and filters for Type, Language, and Sort. A green button labeled "New repository" is located on the right. The main content area displays a list of repositories:

- forecasting22** (Public)
  - Python
  - 0 forks, 1 star, 0 issues, 0 pull requests
  - Updated 2 days ago
- Course-Materials22** (Public)
  - Jupyter Notebook
  - 0 forks, 0 stars, 4 issues, 0 pull requests
  - Updated 7 days ago
- homework\_template** (Public template)
  - 0 forks, 0 stars, 0 issues, 0 pull requests
  - Updated 15 days ago
- github-starter** (Public)
  - 0 forks, 0 stars, 0 issues, 0 pull requests
  - Updated 16 days ago
- github-starter-course** (Private template)
  - github-starter-course created by GitHub Classroom
  - 0 forks, 0 stars, 0 issues, 0 pull requests
  - Updated 19 days ago

# The homework repo

**CLICK HERE**



**HAS-Tools-Fall2022**

Overview Repositories Projects Packages Teams People Settings

Find a repository... Type Language Sort New repository

- forecasting22** (Public)  
Python 0 1 0 0 Updated 2 days ago
- Course-Materials22** (Public)  
Jupyter Notebook 0 0 4 0 Updated 7 days ago
- homework\_template** (Public template)  
0 0 0 0 Updated 15 days ago
- github-starter** (Public)  
0 0 0 0 Updated 16 days ago
- github-starter-course** (Private template)  
github-starter-course created by GitHub Classroom  
0 0 0 0 Updated 19 days ago

# The homework repo

The screenshot shows a GitHub repository page for 'HAS-Tools-Fall2022 / homework\_template'. The repository is a public template generated from 'HAS-Tools-Master/Homework\_Template'. The navigation bar includes links for Code, Issues, Pull requests, Discussions, Actions, Projects, Wiki, Security, Insights, and Settings. Below the navigation bar, there are buttons for 'Go to file', 'Add file', 'Code', and 'Use this template'. The repository has 1 branch (main) and 0 tags. The commit history shows an initial commit by 'arbennett' 16 days ago, with a commit hash of 'fdfa52d'. The commit message is 'Initial commit'. The commit includes several files: 'Cheat\_Sheets', 'Forecast\_Submissions', 'assignment\_1', 'data', '.gitignore', and 'README.md'. The README.md file is highlighted, showing the text: 'This repo is for you to use for your homework assignments'.

**HAS-Tools-Fall2022 / homework\_template** Public template

generated from [HAS-Tools-Master/Homework\\_Template](#)

[Code](#) [Issues](#) [Pull requests](#) [Discussions](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)

[main](#) [1 branch](#) [0 tags](#) [Go to file](#) [Add file](#) [Code](#) [Use this template](#)

**arbennett** Initial commit fdfa52d 16 days ago [1 commit](#)

File	Commit	Time
<a href="#">Cheat_Sheets</a>	Initial commit	16 days ago
<a href="#">Forecast_Submissions</a>	Initial commit	16 days ago
<a href="#">assignment_1</a>	Initial commit	16 days ago
<a href="#">data</a>	Initial commit	16 days ago
<a href="#">.gitignore</a>	Initial commit	16 days ago
<a href="#">README.md</a>	Initial commit	16 days ago

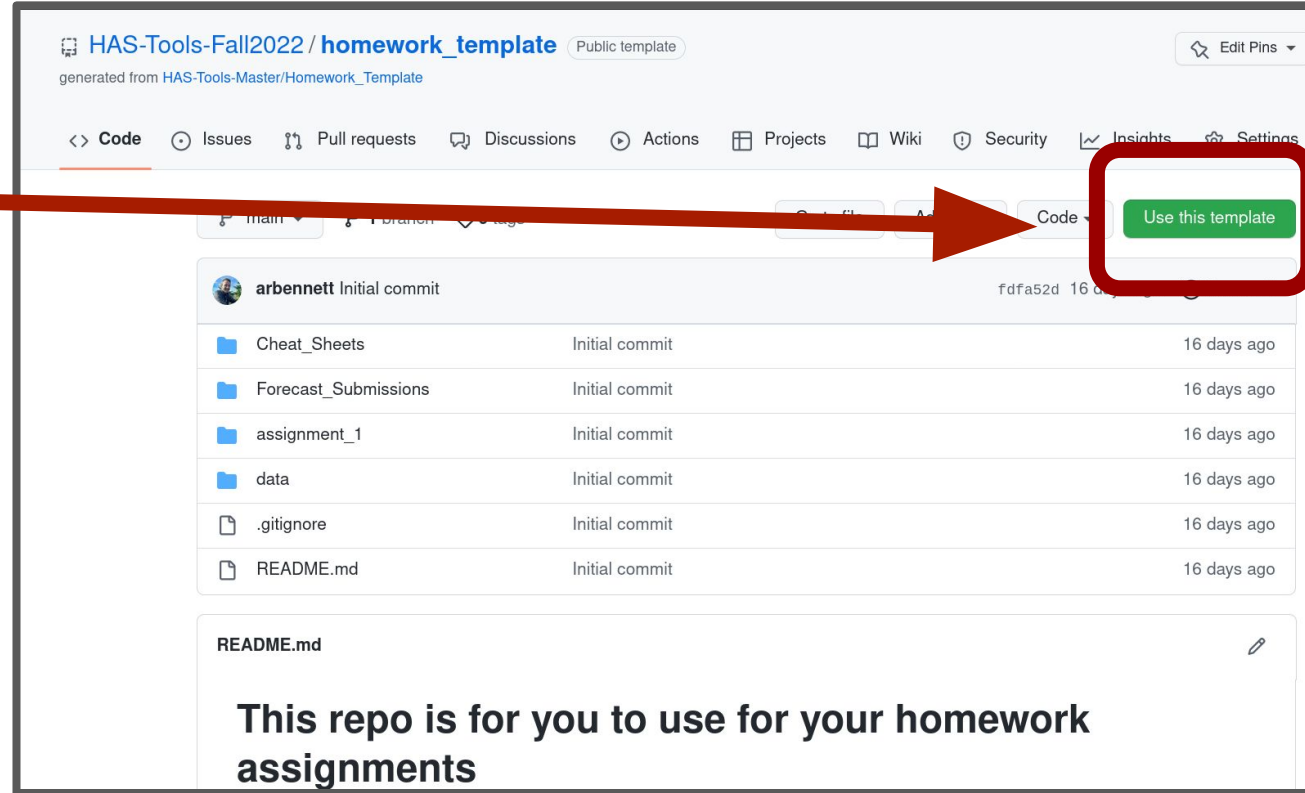
**README.md**

This repo is for you to use for your homework assignments



# The homework repo

**CLICK  
HERE**



The screenshot shows the GitHub interface for the repository 'HAS-Tools-Fall2022 / homework\_template'. The repository is a public template generated from 'HAS-Tools-Master/Homework\_Template'. The navigation bar includes links for Code, Issues, Pull requests, Discussions, Actions, Projects, Wiki, Security, Insights, and Settings. The 'Code' tab is selected, showing a list of files and folders. A red arrow points from the text 'CLICK HERE' to the 'Use this template' button, which is highlighted with a red box.

File/Folder	Commit Message	Commit Hash	Time
Cheat_Sheets	Initial commit	fdfa52d	16 days ago
Forecast_Submissions	Initial commit		16 days ago
assignment_1	Initial commit		16 days ago
data	Initial commit		16 days ago
.gitignore	Initial commit		16 days ago
README.md	Initial commit		16 days ago

**README.md**


This repo is for you to use for your homework assignments

**Change to  
HAS-Tools-Fall2022**

**Call it  
homework\_YOURNAME**

## Create a new repository from homework\_template


The new repository will start with the same files and folders as [HAS-Tools-Fall2022/homework\\_template](#).


**Owner \***  
 arbennett ▼

**Repository name \***


How about **cautious-octo-happiness**?

**Description (optional)**

☒  **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.

☐ **Include all branches**  
Copy all branches from HAS-Tools-Fall2022/homework\_template and not just main.


 You are creating a public repository in your personal account.

Create repository from template

## Create a new repository from homework\_template

The new repository will start with the same files and folders as [HAS-Tools-Fall2022/homework\\_template](#).

Owner \*


 HAS-Tools-Fall2022 ▾

Repository name \*


homework\_arbennet ✓

Create repository names are short and memorable. Need inspiration? How about [cautious-octo-happiness](#)?

Description (optional)

☐  **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.

☐ **Include all branches**

Copy all branches from HAS-Tools-Fall2022/homework\_template and not just main.

 You are creating a private repository in the HAS-Tools-Fall2022 organization.

Create repository from template

**Change to  
HAS-Tools-Fall2022**

**Call it  
homework\_YOURNAME**

## Create a new repository from homework\_template

The new repository will start with the same files and folders as [HAS-Tools-Fall2022/homework\\_template](#).

Owner \*



HAS-Tools-Fall2022 ▾

Repository name \*

homework\_arbennet ✓

Create repository names are short and memorable. Need inspiration? How about [cautious-octo-happiness?](#)

Description (optional)



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.



Include all branches

Copy all branches from HAS-Tools-Fall2022/homework\_template and not just main.



You are creating a private repository in the HAS-Tools-Fall2022 organization.

Create repository from template

**Change to  
HAS-Tools-Fall2022**

**Call it  
homework\_YOURNAME**

**SMASH that  
create button**

# The homework repo

- From here you should be able to add to GitKraken and clone
- Put your cheat sheets in the “Cheat\_Sheets” folder with an appropriate name including the date
- Put your forecast code (note forecast values) in the “Forecast\_Submissions” folder with an appropriate name including the date
- Other assignments will eventually go in the “assignment\_(NUMBER)” folders that you will create
- It’s fine if you don’t have things perfectly organized for your first submission, I’ll be looking at this and making suggestions

**Questions before things  
get weird?**

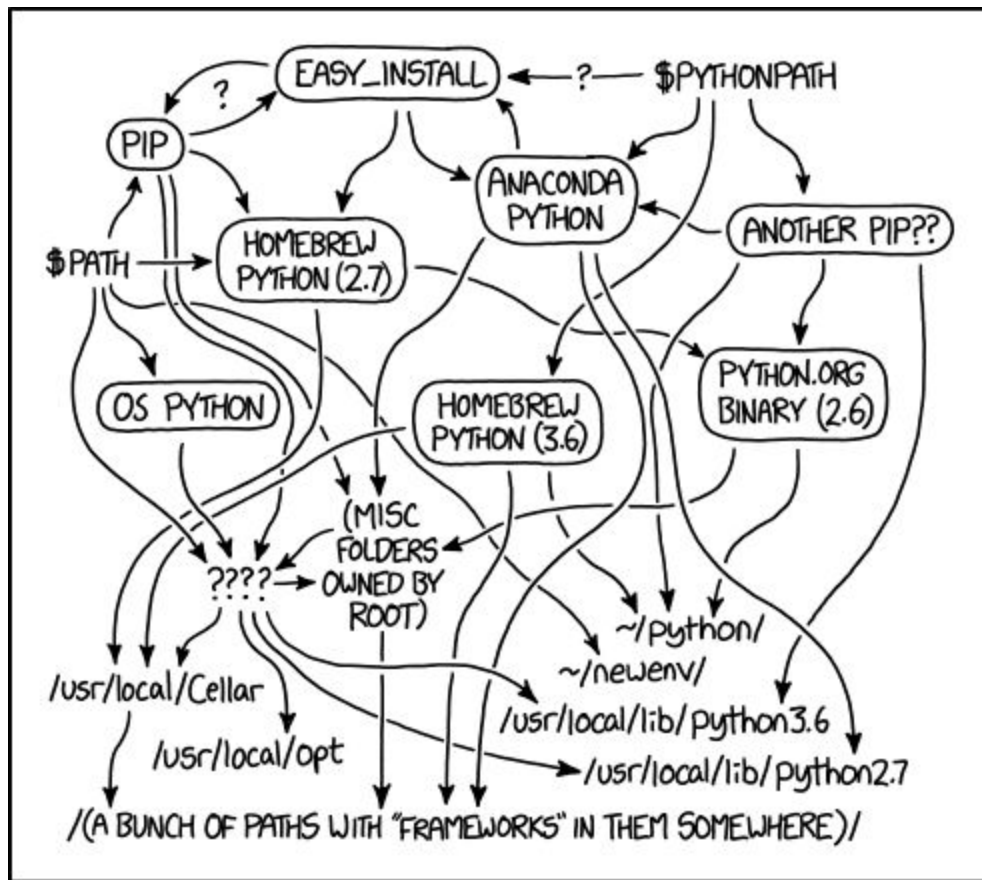


**CONDA  
TIME**

**What the  
LMNOP am  
I talking  
about?!**



# What the LMNOP am I talking about?!



MY PYTHON ENVIRONMENT HAS BECOME SO DEGRADED  
THAT MY LAPTOP HAS BEEN DECLARED A SUPERFUND SITE.

**What the  
LMNOP am  
I talking  
about?!**



all	/pool0/data/andrbenn/.conda/all
asdf	/pool0/data/andrbenn/.conda/asdf
bbb	/pool0/data/andrbenn/.conda/bbb
blargh	/pool0/data/andrbenn/.conda/blargh
bmorph	/pool0/data/andrbenn/.conda/bmorph
bmorph-test	/pool0/data/andrbenn/.conda/bmorph-test
build_pysumma	/pool0/data/andrbenn/.conda/build_pysumma
buwu	/pool0/data/andrbenn/.conda/buwu
cartopy	/pool0/data/andrbenn/.conda/cartopy
docker_metsim_test	/pool0/data/andrbenn/.conda/docker_metsim_
empty	/pool0/data/andrbenn/.conda/empty
env	/pool0/data/andrbenn/.conda/env
feedstocks	/pool0/data/andrbenn/.conda/feedstocks
met-ml	/pool0/data/andrbenn/.conda/met-ml
metsim	/pool0/data/andrbenn/.conda/metsim
metsim_whw	/pool0/data/andrbenn/.conda/metsim_whw
ml	/pool0/data/andrbenn/.conda/ml
models	/pool0/data/andrbenn/.conda/models
passthrough	/pool0/data/andrbenn/.conda/passthrough
pysumma	/pool0/data/andrbenn/.conda/pysumma
test_metsim	/pool0/data/andrbenn/.conda/test_metsim
test_summa	/pool0/data/andrbenn/.conda/test_summa
wubu	/pool0/data/andrbenn/.conda/wubu

**Let's jump  
to vscode**