

## Using GitHub Continuous Integration:

### 1. Setup a repository on GitHub:

#### Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner \*



Repository name \*

pytest



Great repository names are short and memorable. Need inspiration? How about [silver-giggle?](#)

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.

Initialize this repository with:

Skip this step if you're importing an existing repository.

☒ Add a README file

This is where you can write a long description for your project. [Learn more.](#)

Add .gitignore

Choose which files not to track from a list of templates. [Learn more.](#)

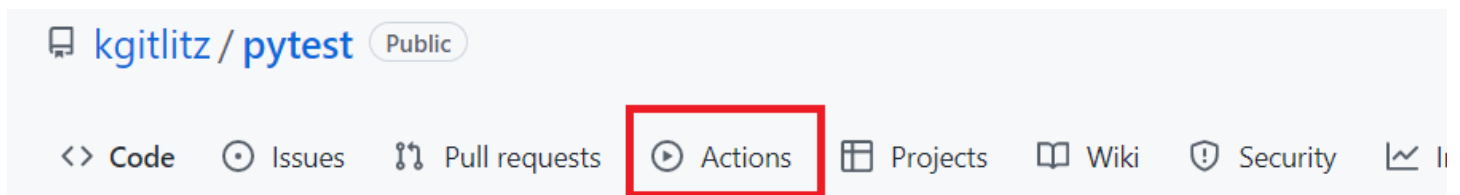
.gitignore template: Python

Choose a license

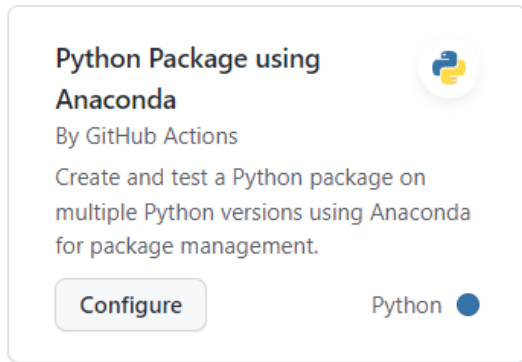
A license tells others what they can and can't do with your code. [Learn more.](#)

License: None

### 2. In your repository, select Actions:



3. For continuous integration, add the following:



If you do not see this package, scroll to the bottom of the page and select **Browse All Categories** and select **Continuous integration**.

Change the Python version in the .yml script created for you. Be sure to commit the .yml script.

```
steps:
- uses: actions/checkout@v3
- name: Set up Python 3.7
  uses: actions/setup-python@v3
  with:
    python-version: 3.7
- name: Add conda to system path
```

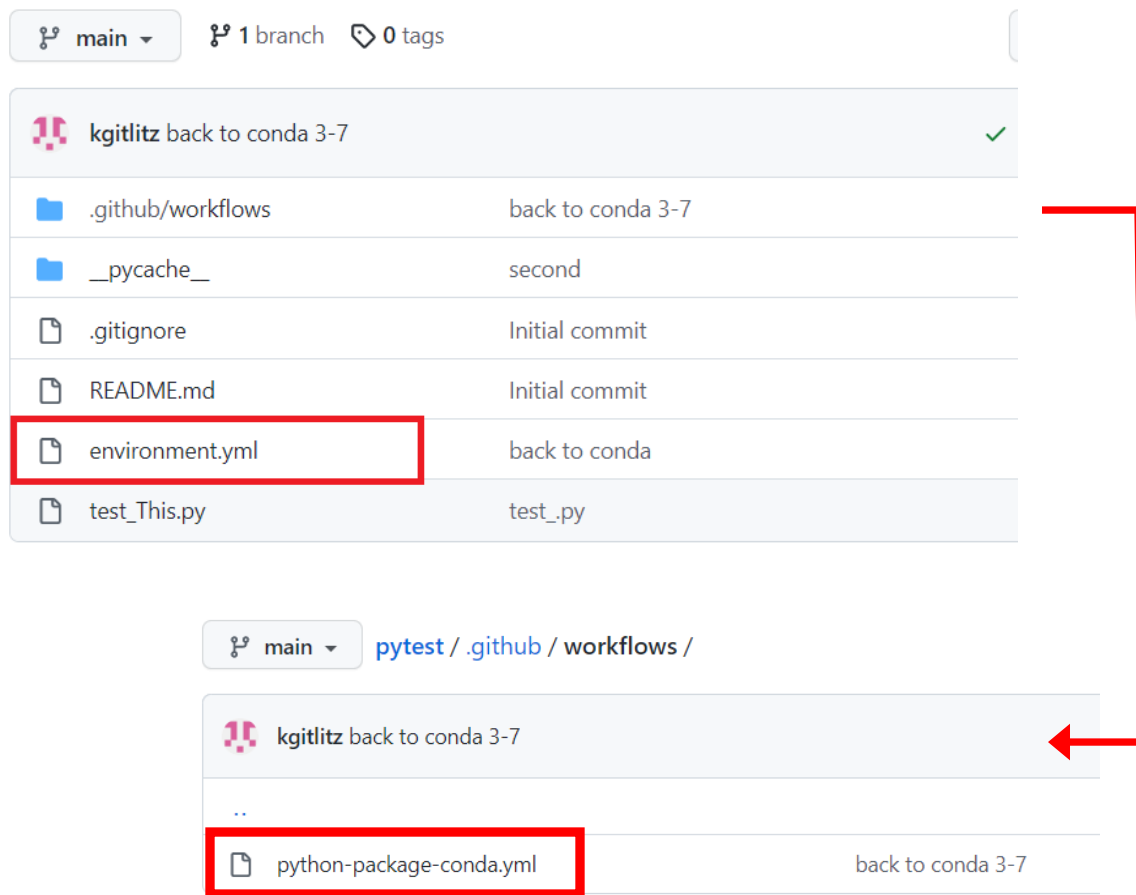
The script includes an update to the base Conda environment:

```
- name: Install dependencies
  run: |
    conda env update --file environment.yml --name base
```

Here are the contents of the environments.yml file. I made some changes in the file supplied by ProfTim:

```
environment.yml
1 name: anyNameForThis
2 channels:
3   - conda-forge
4   - defaults
5 dependencies:
6   - moto
7   - boto
8   - pytest
```

The environment.yml file is stored at the root of the project and the .yml script to run is stored in the workflows directory:



If you place the environment.yml file in the workflow directory, GitHub will attempt to run it and your workflow will fail.

**To run pytest on all test files in your repository:**

**Python test files must contain functions that begin with test\_**

**Python files must begin with test\_**

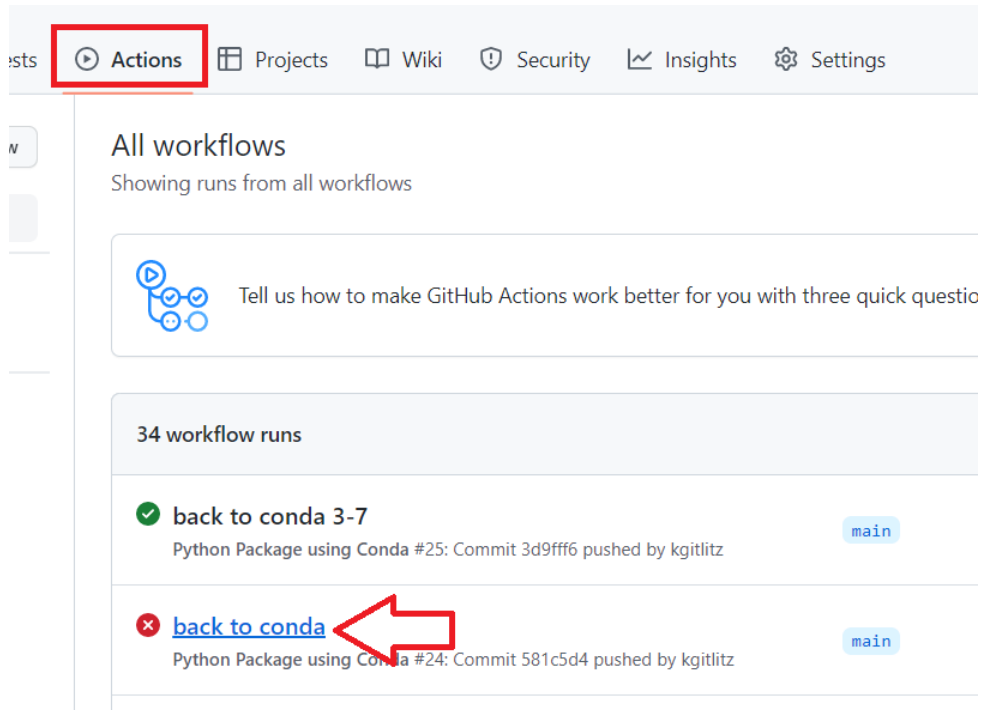
**For example:**

```
test_This.py
1
2 def test_easy():
3     print('hello')
4     assert 5 == 5
5
6
```

If you have no files to test, your workflow will fail.

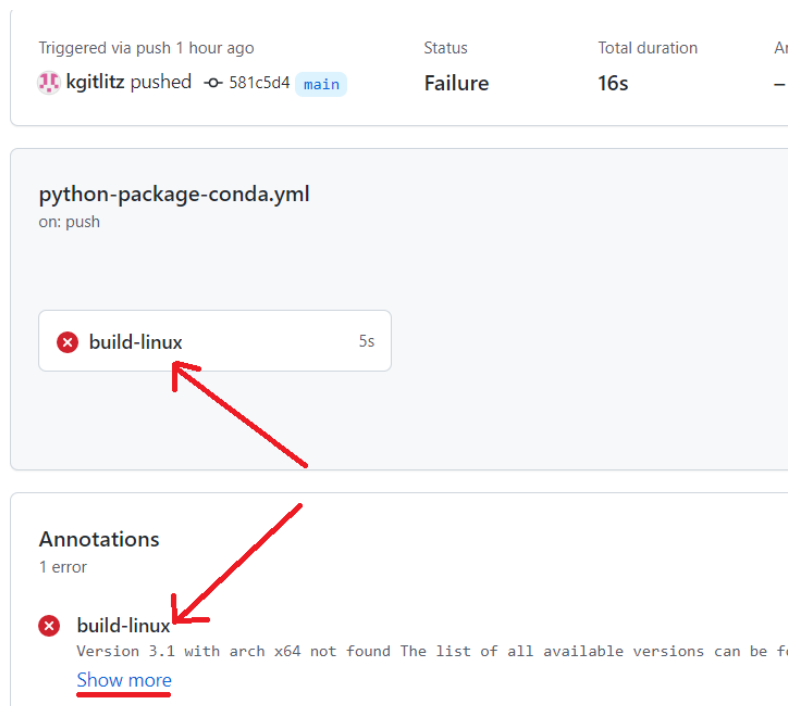
Navigating to results:

The workflow runs are listed under Actions. The working commit “back to conda 3-7” uses the file files described above. The “back to conda” fail used Python 3.10.



The screenshot shows the GitHub Actions interface. At the top, the 'Actions' tab is highlighted with a red box. Below the navigation bar, the 'All workflows' section is visible, showing 'Showing runs from all workflows'. A list of workflow runs is displayed, with two entries: 'back to conda 3-7' (successful) and 'back to conda' (failed). A red arrow points to the 'back to conda' run. The failed run is labeled 'back to conda' with a red 'x' icon and a red arrow pointing to it. The successful run is labeled 'back to conda 3-7' with a green checkmark icon.

For more information on the following, click on **Show more**. For a list of what transpired, click on one of the **build-linux** links:



The screenshot shows the details of a failed workflow run. The top section indicates the run was 'Triggered via push 1 hour ago' and shows the status as 'Failure' with a total duration of '16s'. Below this, the workflow name 'python-package-conda.yml' is shown, along with the trigger 'on: push'. A list of steps is displayed, with the 'build-linux' step highlighted in red and marked as failed. A red arrow points to the 'build-linux' step. Below the steps, the 'Annotations' section shows '1 error' and a red 'x' icon next to the 'build-linux' step. The error message states: 'Version 3.1 with arch x64 not found The list of all available versions can be found here'. A red arrow points to the error message. A 'Show more' link is provided at the bottom.

Here is the list from the failed build-linux link:

**build-linux**  
failed 1 hour ago in 5s

Search logs

> Set up job2s

> Run actions/checkout@v31s

▼ Set up Python 3.101s

1 ▶ Run actions/setup-python@v3

5 Version 3.1 was not found in the local cache

6 **Error:** Version 3.1 with arch x64 not found

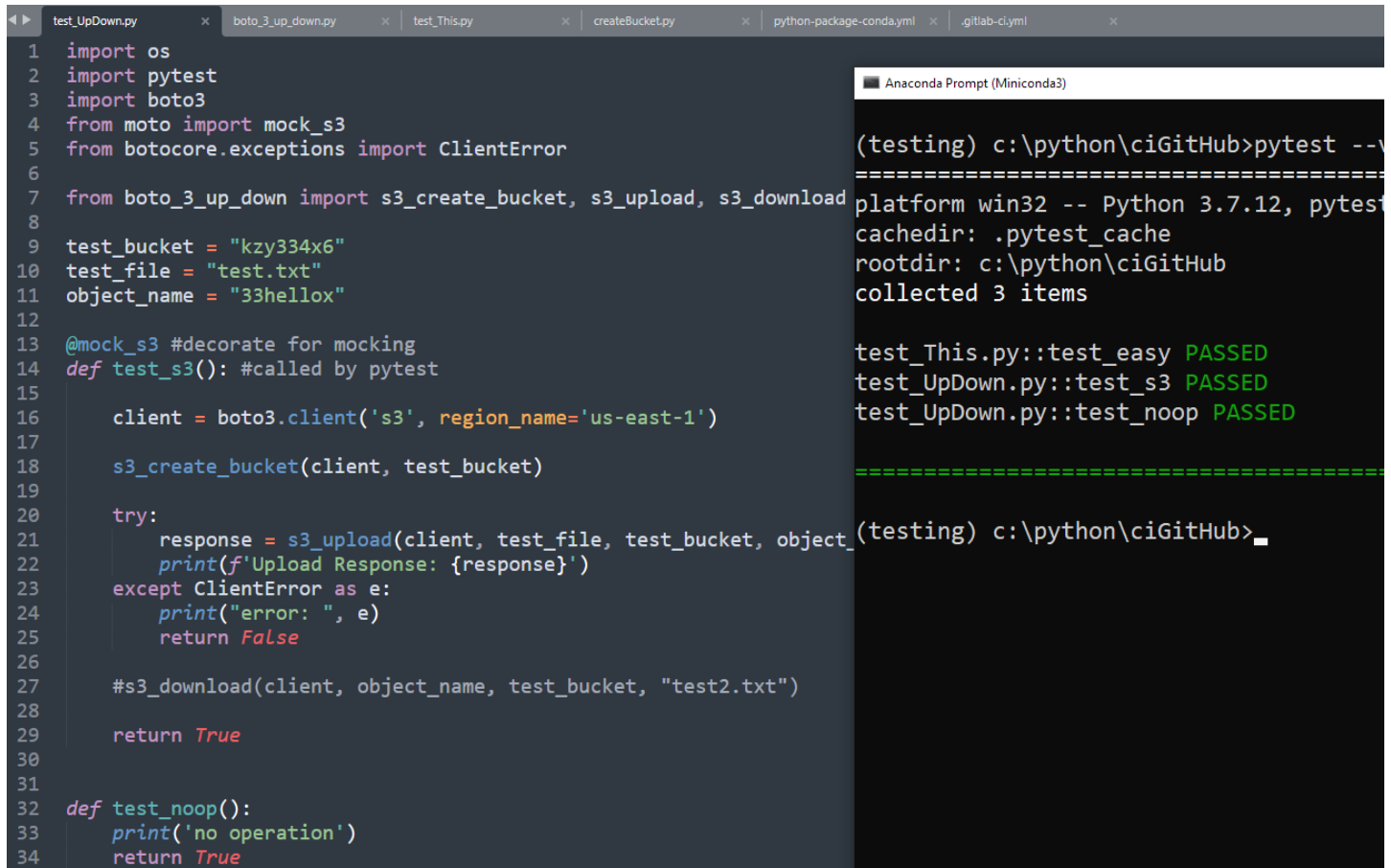
7 The list of all available versions can be found here: <https://raw.githubusercontent.com/actions/python-versions/main/versions-manifest.json>

Add conda to system path0s

Install dependencies0s

## Boto / Moto Local Testing of Python:

In the following illustration, I am testing my boto\_3\_up\_down.py file I created for **AWS Boto3 and Mocking S3** assignment.

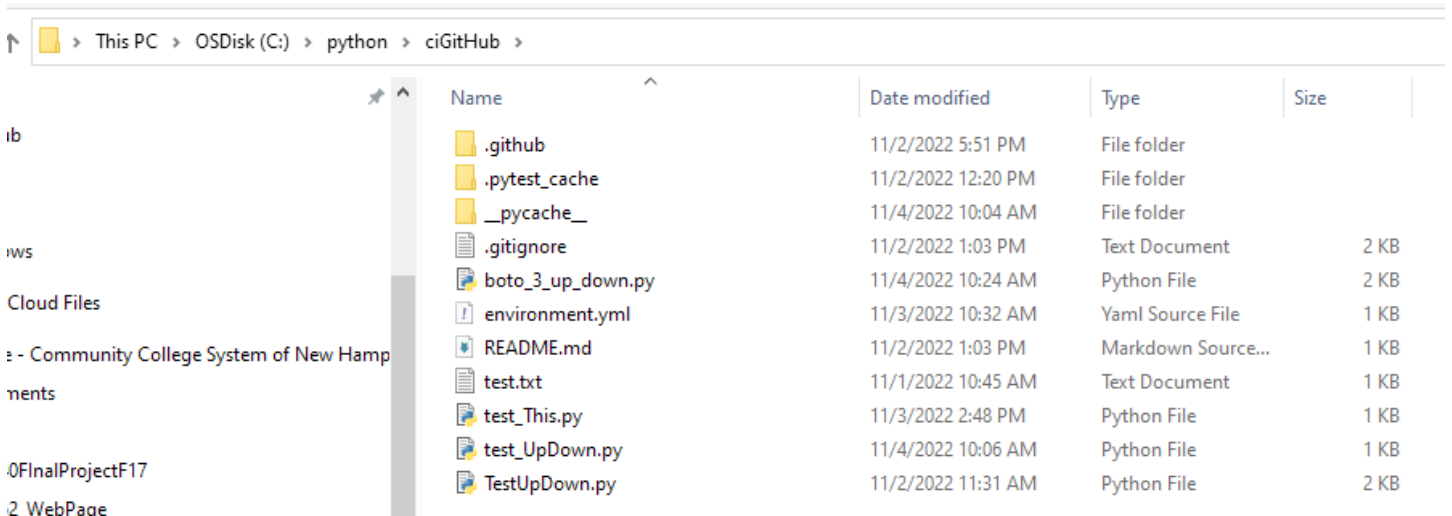


```
test_UpDown.py x boto_3_up_down.py x test_This.py x createBucket.py x python-package-conda.yml x .gitlab-ci.yml x
1 import os
2 import pytest
3 import boto3
4 from moto import mock_s3
5 from botocore.exceptions import ClientError
6
7 from boto_3_up_down import s3_create_bucket, s3_upload, s3_download
8
9 test_bucket = "kzy334x6"
10 test_file = "test.txt"
11 object_name = "33hellox"
12
13 @mock_s3 #decorate for mocking
14 def test_s3(): #called by pytest
15
16     client = boto3.client('s3', region_name='us-east-1')
17
18     s3_create_bucket(client, test_bucket)
19
20     try:
21         response = s3_upload(client, test_file, test_bucket, object_name)
22         print(f'Upload Response: {response}')
23     except ClientError as e:
24         print("error: ", e)
25         return False
26
27     #s3_download(client, object_name, test_bucket, "test2.txt")
28
29     return True
30
31
32 def test_noop():
33     print('no operation')
34     return True
```

```
Anaconda Prompt (Miniconda3)
(testing) c:\python\ciGitHub>pytest --v
=====
platform win32 -- Python 3.7.12, pytest
cachedir: .pytest_cache
rootdir: c:\python\ciGitHub
collected 3 items

test_This.py::test_easy PASSED
test_UpDown.py::test_s3 PASSED
test_UpDown.py::test_noop PASSED
=====
(testing) c:\python\ciGitHub>
```

Here are the directory contents:



This PC > OSDisk (C:) > python > ciGitHub >				
	Name	Date modified	Type	Size
ib	.github	11/2/2022 5:51 PM	File folder	
	.pytest_cache	11/2/2022 12:20 PM	File folder	
	__pycache__	11/4/2022 10:04 AM	File folder	
aws	.gitignore	11/2/2022 1:03 PM	Text Document	2 KB
	boto_3_up_down.py	11/4/2022 10:24 AM	Python File	2 KB
Cloud Files	environment.yml	11/3/2022 10:32 AM	Yaml Source File	1 KB
	README.md	11/2/2022 1:03 PM	Markdown Source...	1 KB
e - Community College System of New Hamp	test.txt	11/1/2022 10:45 AM	Text Document	1 KB
	test_This.py	11/3/2022 2:48 PM	Python File	1 KB
ments	test_UpDown.py	11/4/2022 10:06 AM	Python File	1 KB
	TestUpDown.py	11/2/2022 11:31 AM	Python File	2 KB
0FinalProjectF17				
2 WebPaade				


Here is the Git push:

```
SYSTEM+kgitlitz@L218-PF23AJ97 MINGW64 /c/python/ciGitHub (main)
$ git add .

SYSTEM+kgitlitz@L218-PF23AJ97 MINGW64 /c/python/ciGitHub (main)
$ git commit -m rem-resp
[main 9b2fda8] rem-resp
1 file changed, 1 deletion(-)

SYSTEM+kgitlitz@L218-PF23AJ97 MINGW64 /c/python/ciGitHub (main)
$ git push origin main
Enumerating objects: 15, done.
Counting objects: 100% (15/15), done.
Delta compression using up to 12 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (9/9), 731 bytes | 731.00 KiB/s, done.
Total 9 (delta 5), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (5/5), completed with 4 local objects.
To https://github.com/kgitlitz/pytest.git
   feebf54..9b2fda8  main -> main
```

Boto / Moto finally working on GitHub:



49 workflow runs		Event ▼
✓	<b>rem-resp</b> Python Package using Conda #40: Commit 9b2fda8 pushed by kgitlitz	main
✗	<b>fixed-download</b> Python Package using Conda #39: Commit feebf54 pushed by kgitlitz	main
✗	<b>client-find</b> Python Package using Conda #38: Commit a98f9ab pushed by kgitlitz	main
✗	<b>remove-profile</b> Python Package using Conda #37: Commit 0640f1f pushed by kgitlitz	main

Help:

**Forcing merge:**

<https://stackoverflow.com/questions/37937984/git-refusing-to-merge-unrelated-histories-on-rebase>

**Unprotecting branches:**

<https://stackoverflow.com/questions/32246503/fix-gitlab-error-you-are-not-allowed-to-push-code-to-protected-branches-on-thi>