

Quarto and automation

JSM 2023 - Toronto

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Context

- Sta 323 / Sta 523 - R based statistical computing (UG / MS)
- Sta 663 - Python based statistical computing (MS)
- All courses run using GitHub
 - 1 organization / course
 - Students added as org members
 - 1 repo / assignment (team or individual)
 - Management via [ghclass](#)

Sta 523 - HW 1

The screenshot shows a GitHub repository page for 'sta523-fa22/hw1'. The repository is a private template. The main interface includes a code editor with a 'main' branch, a file browser, and a commit history. The commit history shows a recent update to 'check_assignment.yml' and several initial files like '.gitignore', 'README.md', 'fizzbuzz.png', 'hw1.Rproj', and 'hw1.qmd'. A 'Check Assignment' button indicates the assignment is passing. The repository has no releases, packages, or forks. It also lacks a description, website, or topics.

Code

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

hw1 Private template

Edit Pins

Watch 0

Fork 0

Star 0

main

Go to file

Add file

Code

Use this template

rundel Delete bad_file ce213a7 12 minutes ago 13 commits

.github/workflows Update check_assignment.yml 2 hours ago

.gitignore init last year

README.md Update README.md 3 hours ago

fizzbuzz.png init last year

hw1.Rproj init last year

hw1.qmd init last year

README.md

Check Assignment passing

No description, website, or topics provided.

Readme

Activity

0 stars

0 watching

0 forks

No releases published

Create a new release

Sta 523, Fall 2022 - Homework 1

Due by 5:00 pm on Friday, September 16th.

Packages

No packages published

Publish your first package

.github/workflows/check_assignment.yml

```
1 on: push
2 name: Check Assignment
3 jobs:
4   check-allowed-files:
5     runs-on: ubuntu-latest
6     container:
7       image: ghcr.io/sta523-fa22/sta523-base:latest
8     steps:
9       - name: Checkout
10      uses: actions/checkout@master
11       - name: Check Files
12         run: |
13           checklist::quit_on_failure({
14             checklist::check_allowed_files(
15               c("hw1.qmd", "hw1.Rproj", "README.md", "fizzbuzz.png")
16             )
17           })
18         shell: Rscript {0}
19
20   check-renders:
21     runs-on: ubuntu-latest
22     container:
23       image: ghcr.io/sta523-fa22/sta523-base:latest
24     steps:
25       - name: Checkout
26         uses: actions/checkout@master
27       - name: Install Missing Packages
28         run: |
```

Feedback

bit.ly/teach-quarto

sta523-fa22/hw1

github.com/sta523-fa22/hw1/actions/runs/5778239577/job/15659246857

check-renders

failed 28 minutes ago in 46s

Search logs

Check Renders

3s

Run details

Usage

Workflow file

Summary

Jobs

check-allowed-files

check-renders

1 ► Run checklist::check_qmd_renders("hw1.qmd")
4
5
6 processing file: hw1.qmd
7 1/15
8 2/15 [fizzbuzz]
9 3/15
10 4/15 [good_inputs]
11
12 Quitting from lines 36–45 [good_inputs] (hw1.qmd)
13 Error:
14 ! fizzbuzz(3) == "Fizz" is not TRUE
15 Backtrace:
16 1. base::stopifnot(fizzbuzz(3) == "Fizz")
17 Execution halted
18 Error in `processx::run(quarto_bin, args, echo = TRUE)`:
19 ! System command 'quarto' failed
20 ---
21 Exit status: 1
22 stdout & stderr: <printed>
23 ---
24 Backtrace:
25 1. checklist::check_qmd_renders("hw1.qmd")
26 2. quarto::quarto_render(file, ...)
27 3. processx::run(quarto_bin, args, echo = TRUE)
28 4. processx:::throw(new_process_error(res, call = sys.call(), echo = echo, ...
29 Execution halted
30
31 bit.ly/teach-quarto Error: Process completed with exit code 1.

.github/workflows/check_assignment.yml

```
1 on: push
2 name: Check Assignment
3 jobs:
4   check-allowed-files:
5     runs-on: ubuntu-latest
6     container:
7       image: ghcr.io/sta523-fa22/sta523-base:latest
8     steps:
9       - name: Checkout
10      uses: actions/checkout@master
11       - name: Check Files
12         run: |
13           checklist::quit_on_failure({
14             checklist::check_allowed_files(
15               c("hw1.qmd", "hw1.Rproj", "README.md", "fizzbuzz.png")
16             )
17           })
18         shell: Rscript {0}
19
20   check-renders:
21     runs-on: ubuntu-latest
22     container:
23       image: ghcr.io/sta523-fa22/sta523-base:latest
24     steps:
25       - name: Checkout
26         uses: actions/checkout@master
27       - name: Install Missing Packages
28         run: |
```

bit.ly/teach-quarto

sta523-fa22/hw1 Update hw1.qmd · sta523-fa22

github.com/sta523-fa22/hw1/actions/runs/5778377961

Summary

Jobs

- check-allowed-files
- check-renders

Run details

- Usage
- Workflow file

check_assignment.yml
on: push

| | |
|---------------------|-----|
| check-allowed-files | 46s |
| check-renders | 49s |

Annotations

1 warning

⚠️ check-renders
The following actions uses node12 which is deprecated and will be forced to run...
[Show more](#)

Artifacts

Produced during runtime

| Name | Size |
|---|--------|
| hw1-html bit.ly/teach-quarto | 877 KB |

ghclass + artifacts

```
1 repos = ghclass::org_repos("sta523-fa22", "hw01_")
2 ghclass::action_artifact_download(repos, "html/")
```

```
✓ Downloaded artifact 846527824 from repo "sta523-fa22/hw01_lab01_team01" to "html/hw01_lab01_team01.html".
✓ Downloaded artifact 846527748 from repo "sta523-fa22/hw01_lab01_team02" to "html/hw01_lab01_team02.html".
✓ Downloaded artifact 846527719 from repo "sta523-fa22/hw01_lab01_team03" to "html/hw01_lab01_team03.html".
✓ Downloaded artifact 846527656 from repo "sta523-fa22/hw01_lab01_team04" to "html/hw01_lab01_team04.html".
✓ Downloaded artifact 846527730 from repo "sta523-fa22/hw01_lab01_team05" to "html/hw01_lab01_team05.html".
✓ Downloaded artifact 846527655 from repo "sta523-fa22/hw01_lab01_team06" to "html/hw01_lab01_team06.html".
✓ Downloaded artifact 846527725 from repo "sta523-fa22/hw01_lab01_team07" to "html/hw01_lab01_team07.html".
✓ Downloaded artifact 846527650 from repo "sta523-fa22/hw01_lab02_team01" to "html/hw01_lab02_team01.html".
✓ Downloaded artifact 846527717 from repo "sta523-fa22/hw01_lab02_team02" to "html/hw01_lab02_team02.html".
✓ Downloaded artifact 846527682 from repo "sta523-fa22/hw01_lab02_team03" to "html/hw01_lab02_team03.html".
✓ Downloaded artifact 846527759 from repo "sta523-fa22/hw01_lab02_team04" to "html/hw01_lab02_team04.html".
✓ Downloaded artifact 846527728 from repo "sta523-fa22/hw01_lab02_team05" to "html/hw01_lab02_team05.html".
✓ Downloaded artifact 846527712 from repo "sta523-fa22/hw01_lab02_team06" to "html/hw01_lab02_team06.html".
✓ Downloaded artifact 846527703 from repo "sta523-fa22/hw01_lab02_team07" to "html/hw01_lab02_team07.html".
```

This and related functions are part of `ghclass` v0.3 which will be on CRAN shortly (currently available via bit.ly/teach-quarto)

Sta 663 - HW 1 (Python)

The screenshot shows a GitHub repository page for 'hw1'. The repository is private and has 8 commits from 'rundel'. It contains files like .github/workflows, data, .gitignore, README.md, advent.py, hw1.ipynb, and wordle.py. The README.md file is open, showing the title 'Homework 1' and a due date of 'Due by 5:00 pm on Friday, February 3rd.' Below the README is a section titled 'Task 1 - Wordle'. The repository has 0 stars, 0 forks, and 0 releases. The Languages section shows a breakdown: Jupyter Notebook at 55.9% and Python at 44.1%. A red 'Repo Checks failing' badge is visible.

Code

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hw1 Private

Edit Pins Watch 0 Fork 0 Star 0

main 1 branch 0 tags Go to file Add file Code About

No description, website, or topics provided.

Readme Activity 0 stars 0 watching 0 forks

Releases No releases published Create a new release

Packages No packages published Publish your first package

Languages Jupyter Notebook 55.9% Python 44.1%

Homework 1

Due by 5:00 pm on Friday, February 3rd.

Task 1 - Wordle

.github/workflows/repo_checks.yml

```
1 on: push
2 name: Repo Checks
3 jobs:
4   check_allowed_files:
5     runs-on: ubuntu-latest
6     container:
7       image: ghcr.io/sta663-sp23/sta663-base:latest
8     timeout-minutes: 3
9     steps:
10    - name: Checkout
11      uses: actions/checkout@master
12    - name: Check Files
13      run: |
14        checklist::quit_on_failure({
15          checklist::check_allowed_files(
16            c("hw1.ipynb", "advent.py", "wordle.py", "README.*", "data/*")
17          )
18        })
19        shell: Rscript {0}
20   check_renders:
21     needs: check_allowed_files
22     runs-on: ubuntu-latest
23     container:
24       image: ghcr.io/sta663-sp23/sta663-base:latest
25     timeout-minutes: 5
26     steps:
27    - name: Checkout
28      uses: actions/checkout@master
```

Advice

- Each organization gets 2000 minutes of action runner time per month for free (3000 with Team upgrade)
 - Easy to exhaust for even a medium sized course
 - Additional minutes can be paid for (~\$0.008 / min)
 - or you can use a self hosted runner(s) (our setup guide + helper scripts)
- Artifacts similarly count towards organization storage limits (500 MB Free or 2 GB Team). Old artifacts can be removed using,

```
1  remove_old_artifacts:
2    runs-on: self-hosted
3    timeout-minutes: 3
4    steps:
5      - name: Remove old artifacts
6        uses: c-hive/gha-remove-artifacts@v1
7        with:
8          age: '0 seconds'
9          skip-tags: false
10         skip-recent: 0
```

Advice

- If you are not interested in creating your own Docker images the `rocker` is an excellent option.
 - Specifically, `rocker/verse` has `quarto` bundled along with most everything else you would need

```
1   container:  
2     image: rocker/verse:latest
```

- If you are more adventurous you can find example `Dockerfiles` and build workflows for both courses,
 - `sta523-fa22/docker-base` and
 - `sta663-sp23/docker-base`

Questions?



rundel.github.io



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[rundel/ghclass](https://github.com/rundel/ghclass)

[rundel/checklist](https://github.com/rundel/checklist)

bit.ly/teach-quarto