

# **Streamlining Assessment and Feedback Management Using the Canvas API**

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# Overview

- Canvas is a big improvement
- But...
  - Designed for **small** classes (~30)
  - Computer Science **average** is ~110
  - Some modules **up to ~360 students**
  - Not set up to handle this well



Human-Centred Big Data and AI D...  
2324\_CSPM40  
Standard 2023/24 Academic Year



EPIC CDT  
HUB: EPIC Basecamp  
HUB/NAC\_2020/21-2026



FSE Teaching  
hub\_l2\_se\_fseltec  
HUB/NAC\_2021/22-2027



Computer Science  
Student Information

CS Students  
HUB: Computer Science Stud...  
HUB/NAC\_2020/21-2026



Academic Mentoring  
NAC-AM\_2021  
HUB/NAC\_2020/21-2026




Adjustments / MC Policy  
NAC-REASADJ\_2021  
HUB/NAC\_2020/21-2026



# The problem

Sandbox assignment  
Due: no due date - SIMON ROBINSON Sandbox Course

0/1  
Graded 1/1

←  ● Test student →

This student does not have a submission for this assignment

- Lots of tediously repetitive actions
- Not designed for speed or efficiency

## Assessment

Grade out of 0



## Assignment comments

0

Add a comment

Choose file No file chosen

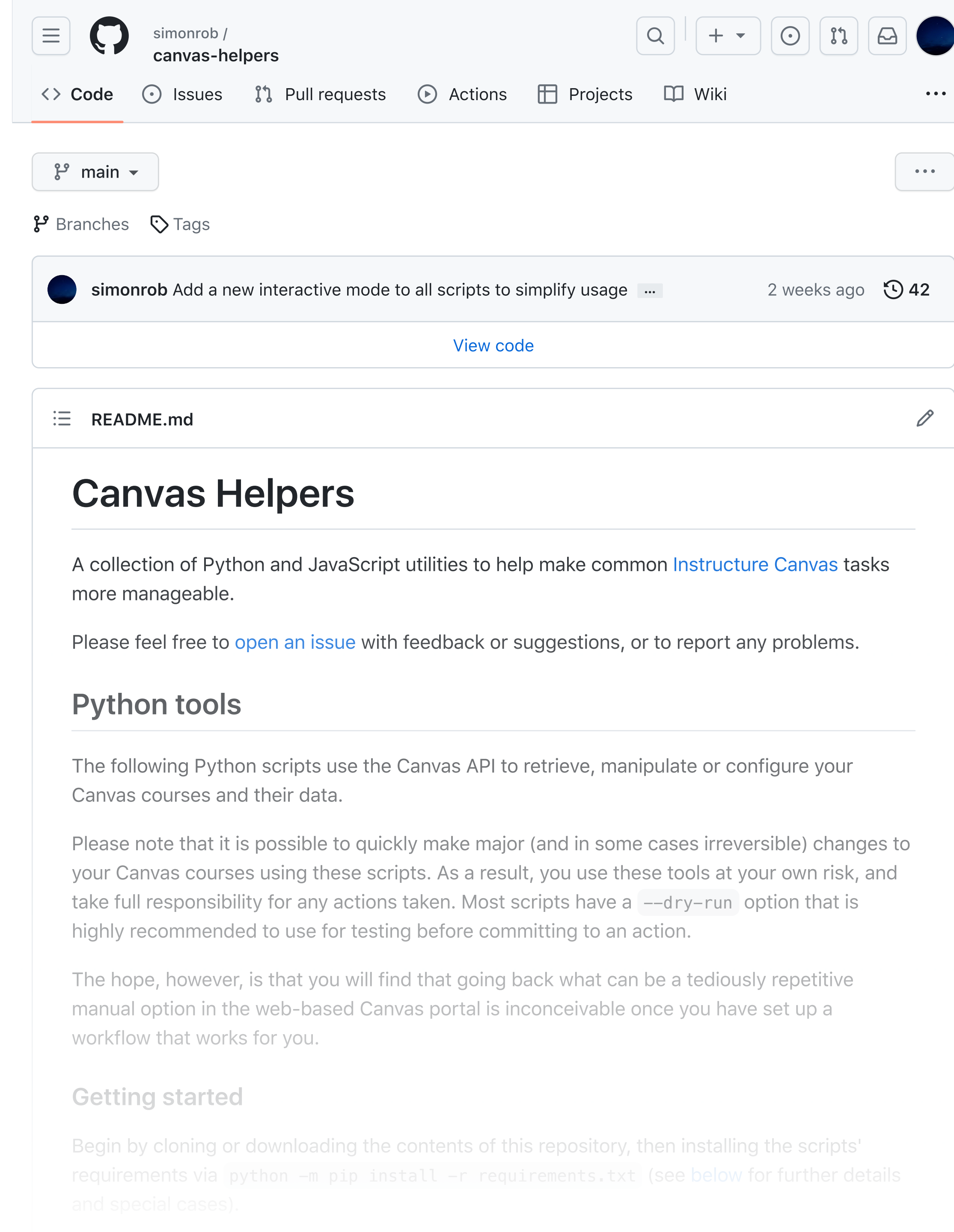


Submit

Download submission comments

# Proposed solution

- Use the **Canvas API** to construct helper tools
- Speed up the most painful parts of the process
- Avoid common errors
- Better staff (and student) experience



The screenshot shows the GitHub interface for the repository 'simonrob / canvas-helpers'. At the top, there are navigation links for Code, Issues, Pull requests, Actions, Projects, and Wiki. Below this, a dropdown menu shows the current branch is 'main'. A recent commit by 'simonrob' is visible, titled 'Add a new interactive mode to all scripts to simplify usage', dated '2 weeks ago' with 42 commits. The main content area displays the 'README.md' file, which has the following structure:

## Canvas Helpers

A collection of Python and JavaScript utilities to help make common [Instructure Canvas](#) tasks more manageable.

Please feel free to [open an issue](#) with feedback or suggestions, or to report any problems.

### Python tools

The following Python scripts use the Canvas API to retrieve, manipulate or configure your Canvas courses and their data.

Please note that it is possible to quickly make major (and in some cases irreversible) changes to your Canvas courses using these scripts. As a result, you use these tools at your own risk, and take full responsibility for any actions taken. Most scripts have a `--dry-run` option that is highly recommended to use for testing before committing to an action.

The hope, however, is that you will find that going back what can be a tediously repetitive manual option in the web-based Canvas portal is inconceivable once you have set up a workflow that works for you.

### Getting started

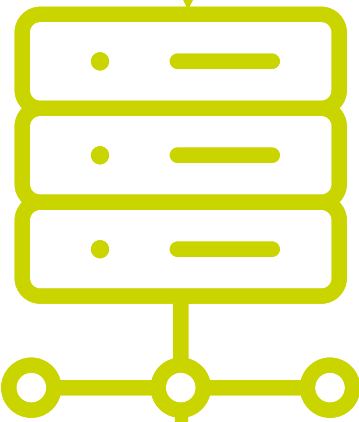
Begin by cloning or downloading the contents of this repository, then installing the scripts' requirements via `python -m pip install -r requirements.txt` (see below for further details and special cases).

# What is an API?

Your request

Hi Canvas – please add this feedback for “Test student”

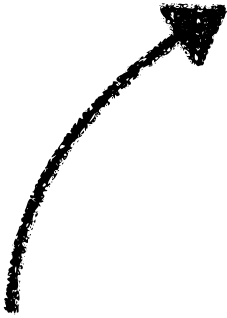
Grade: 68%  
Comment: A detailed feedback comment.  
Attachment: feedback.pdf



Canvas API

Okay – all done

The response



# An example

- Retrieve a list of my Canvas courses

```
GET https://canvas.swansea.ac.uk/api/v1/courses
```

- Result

```
[{  
  "id": 11165,  
  "name": "Human-Centred CDT Dissertation",  
  "account_id": 254,  
  "uuid": "NiVnXw4EiQgwEqsDQxIhhCZUPIieqnssHmIWAhb3",  
  "course_code": "1920_CSPM40",  
  "license": "private",  
  "blueprint": false,  
  "enrollments": [{
```

# Try it yourself

- Get an access token



## SIMON ROBINSON's Settings

Notifications

Profile

Files

Settings

Shared Content

QR for Mobile Login

Global announcements

Full name: SIMON ROBINSON  
This name will be used for grading.

Display name: SIMON ROBINSON  
People will see this name in discussions, messages and comments.

Sortable name: ROBINSON, SIMON  
This name appears in sorted lists.

Language: System default (English (United Kingdom))

Time Zone: London

Maintenance windows: 1st and 3rd Thursday of the month (2:05 UTC )  
Next window: Thu, 20 Jul 2023 from 1:05 to 3:05

Maintenance windows begin July 2021. For details please see the help page.

## Web services

Canvas can make your life a lot easier by tying itself in with the web services that you use. See the "Other services" section for more information.

Let fellow course/group members see which services I've linked to

## Registered services

No registered services

## Approved integrations:

These are the third-party applications you have authorised to access your data.

App	Purpose	Dates
-----	---------	-------

# Try it yourself

- Get an access token



Commons		Expires: never Last used: 12 Jan 2021 at 17:22	details	🗑️
Analytics 2 DUB Prod		Expires: never Last used: --	details	🗑️
Canvas Teacher for IOS		Expires: never Last used: 11 Jan at 10:21	details	🗑️
Office365 Prod Dub		Expires: never Last used: 28 Jun at 11:18	details	🗑️
Zoom LTI Pro		Expires: never Last used: 5 Mar 2022 at 13:47	details	🗑️
User-Generated	Canvas API	Expires: never Last used: 10 Jul at 14:59	details	🗑️

+ New access token

## Feature options

All

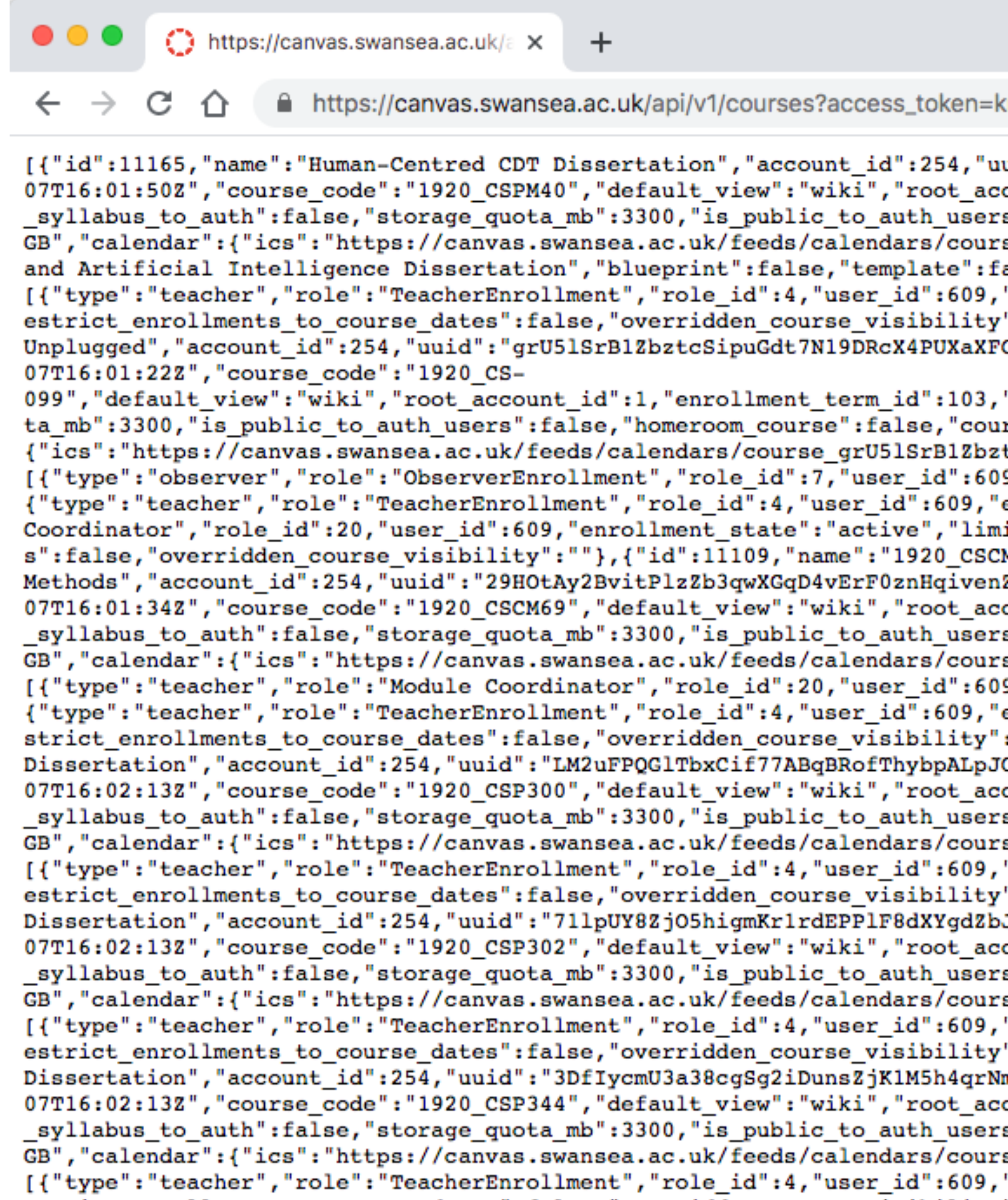
## User

Feature	Status
> Auto Show Closed Captions	
> Autodetect field separators in compatible spreadsheet exports	
> Course set-up tutorial	
> Disable Alert Notification Timeouts	
> Disable Celebration Animations	



# Try it yourself

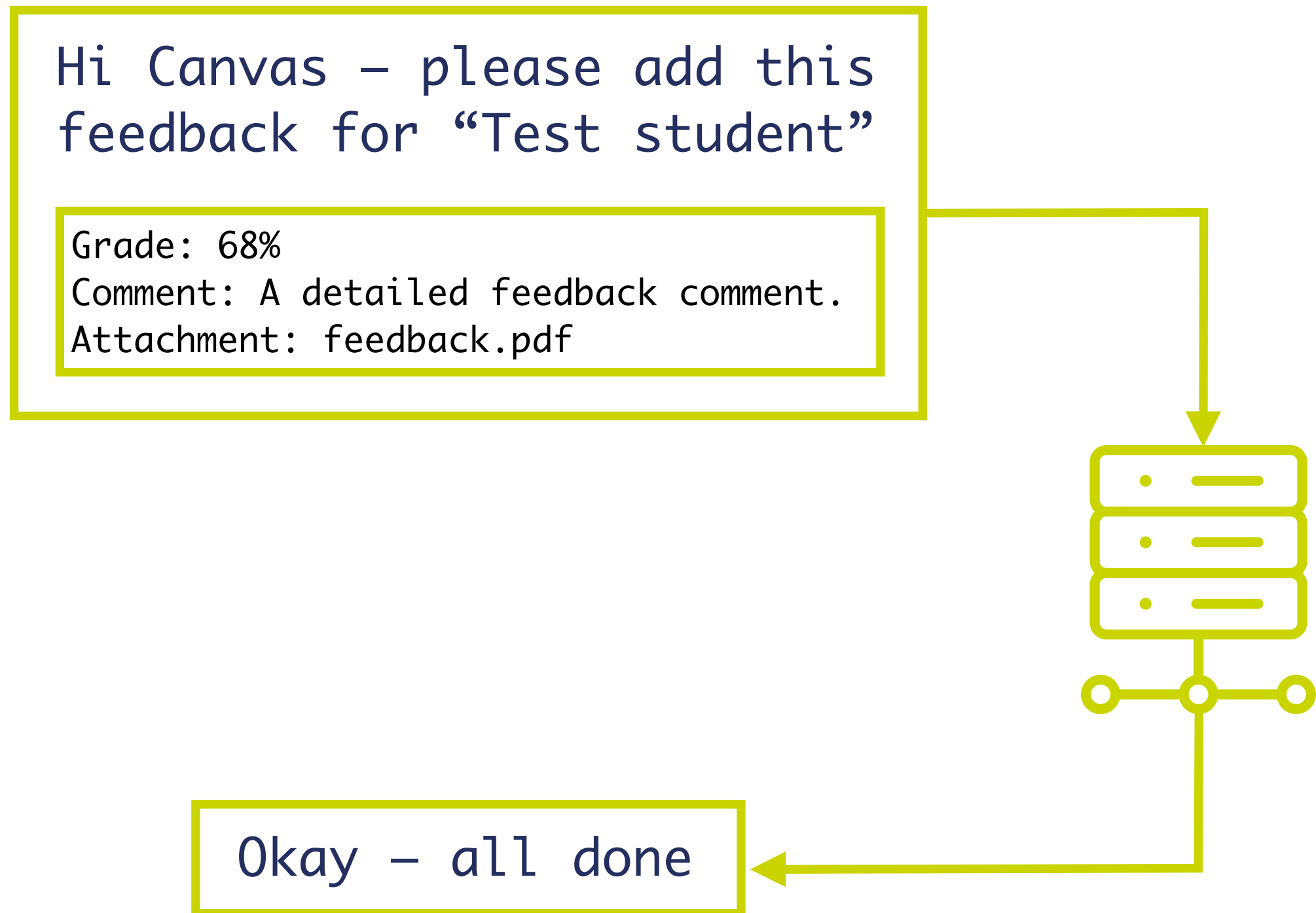
- Get an access token
- Visit:
  - [https://canvas.swansea.ac.uk/api/v1/courses?access\\_token=YOUR\\_TOKEN](https://canvas.swansea.ac.uk/api/v1/courses?access_token=YOUR_TOKEN)



The screenshot shows a web browser window with the address bar displaying `https://canvas.swansea.ac.uk/api/v1/courses?access_token=k`. The main content area displays a JSON array of course objects. Each object contains fields such as `id`, `name`, `account_id`, `uuid`, `course_code`, `default_view`, `root_account_id`, `storage_quota_mb`, `is_public_to_auth_users`, `calendar`, `blueprint`, `template`, `roles`, `strict_enrollments_to_course_dates`, and `overridden_course_visibility`. The visible course names include "Human-Centred CDT Dissertation", "1920\_CSPM40", "1920\_CS-099", "1920\_CSCM69", "1920\_CSP300", and "1920\_CSP302".

**So what?**

# API vs. web interface



VS

0/1 Graded 1/1

← Test student →

Assessment  
Grade out of 0

Assignment comments

Add a comment

Choose file No file chosen

Submit

Download submission comments

The screenshot shows a web interface for an assessment. The top navigation bar displays the assessment status (0/1 Graded, 1/1) and the user's name (Test student). The main content area shows the assessment details, including the grade out of 0 and a section for assignment comments. There is a text input field for adding a comment, a file upload button (Choose file) with the text "No file chosen", and a green Submit button. At the bottom, there is a link to download submission comments.

# Example 1: Submissions



(Option 0: Download one-by-one...)






























Option 1: Use the inbuilt download tool

Option 2: Use the API

# Example 1: Submissions

## Option 1: Use the inbuilt download tool

- ✓ One-click download
- ✗ Poor file naming
- ✗ Not anonymous
- ✗ Multiple duplicate copies of group work

Name	Size	Kind
 alanspellman_10618_1824928_37.pdf	7.3 MB	PDF Document
 albertzacarias_19896_3634217_38.pdf	74 KB	PDF Document
 alexanderwidell_10173_1335275_5.pdf	862 KB	PDF Document
 alexwashington_11346_1094296_23.pdf	1.4 MB	PDF Document
 alicekono_13905_2789048_2.pdf	1.7 MB	PDF Document
 alicerichardson_18248_4798756_34.pdf	2 MB	PDF Document
 alveraedwards_16419_4693038_12-1.pdf	3.2 MB	PDF Document
 andrewblew_15986_2762858_51.pdf	8.9 MB	PDF Document
 andrewpierce_19312_3229204_17-1.pdf	9.1 MB	PDF Document
 annawheeler_16324_2989196_7-1.pdf	1.4 MB	PDF Document
 annbrown_13433_2834432_43.pdf	2.3 MB	PDF Document
 anthonygreen_18132_3396247_29(1).pdf	18.4 MB	PDF Document
 antoniovieira_15099_2650045_31.pdf	441 KB	PDF Document
 aprilkeast_14898_4016042_19.pdf	4.9 MB	PDF Document
 arthurford_12313_2046641_40-2.pdf	28.7 MB	PDF Document
 austinanderson_11490_3859696_29(1).pdf	18.4 MB	PDF Document
 austinwofford_17890_3868355_51.pdf	8.9 MB	PDF Document
 barbarakeller_16191_4737980_22-1.pdf	402 KB	PDF Document
 barbragonzales_14619_3060914_41.pdf	419 KB	PDF Document
 bettyherz_19062_2242479_37.pdf	7.3 MB	PDF Document
 billbunch_13219_1947755_44.pdf	420 KB	PDF Document
 bradleyscott_18921_4320495_18.pdf	3.1 MB	PDF Document
 brandiholbrook_11099_2525990_49.pdf	5.9 MB	PDF Document
 brianleblanc_10101_1081255_33.pdf	805 KB	PDF Document
 brucerosa_19690_3994657_1.pdf	795 KB	PDF Document
 brucewilliams_14771_4881552_29(1).pdf	18.4 MB	PDF Document
 bryancunningham_17653_2784713_28.pdf	666 KB	PDF Document
 bryanknapp_14215_3718803_46.pdf	6.4 MB	PDF Document
 calvinpalmer_17524_1583814_15.pdf	566 KB	PDF Document

229 items, 24.33 GB available

# Example 1: Submissions



(Option 0: Download one-by-one...)




















Option 1: Use the inbuilt download tool

Option 2: Use the API

# Example 1: Submissions

## Option 2: Use the API

- ✗ (A little) more effort
- ✓ Name submissions more appropriately
- ✓ Cleanly handle group work
- ✓ Allow anonymous offline marking
- ✓ Filter specific submission types
- ✓ Create supporting files

Name	Size	Kind
 Coursework Group 1.pdf	795 KB	PDF Document
 Coursework Group 2.pdf	1.7 MB	PDF Document
 Coursework Group 3.pdf	1.2 MB	PDF Document
 Coursework Group 4.pdf	642 KB	PDF Document
 Coursework Group 5.pdf	862 KB	PDF Document
 Coursework Group 6.pdf	1.9 MB	PDF Document
 Coursework Group 7.pdf	1.4 MB	PDF Document
 Coursework Group 8.pdf	949 KB	PDF Document
 Coursework Group 9.pdf	1.4 MB	PDF Document
 Coursework Group 10.pdf	8.3 MB	PDF Document
 Coursework Group 11.pdf	364 KB	PDF Document
 Coursework Group 12.pdf	3.2 MB	PDF Document
 Coursework Group 13.pdf	1.1 MB	PDF Document
 Coursework Group 14.pdf	2 MB	PDF Document
 Coursework Group 15.pdf	566 KB	PDF Document
 Coursework Group 16.pdf	7 MB	PDF Document
 Coursework Group 17.pdf	9.1 MB	PDF Document

52 items, 25.53 GB available



Group name	Speedgrader link
Coursework Group 1	<a href="https://canvas.swansea.ac.uk/courses/36294/gradebook">https://canvas.swansea.ac.uk/courses/36294/gradebook</a>
Coursework Group 2	<a href="https://canvas.swansea.ac.uk/courses/36294/gradebook">https://canvas.swansea.ac.uk/courses/36294/gradebook</a>
Coursework Group 3	<a href="https://canvas.swansea.ac.uk/courses/36294/gradebook">https://canvas.swansea.ac.uk/courses/36294/gradebook</a>
Coursework Group 4	<a href="https://canvas.swansea.ac.uk/courses/36294/gradebook">https://canvas.swansea.ac.uk/courses/36294/gradebook</a>
Coursework Group 5	<a href="https://canvas.swansea.ac.uk/courses/36294/gradebook">https://canvas.swansea.ac.uk/courses/36294/gradebook</a>
Coursework Group 6	<a href="https://canvas.swansea.ac.uk/courses/36294/gradebook">https://canvas.swansea.ac.uk/courses/36294/gradebook</a>
Coursework Group 7	<a href="https://canvas.swansea.ac.uk/courses/36294/gradebook">https://canvas.swansea.ac.uk/courses/36294/gradebook</a>

# Example 1: Submissions



(Option 0: Download one-by-one...)



Option 1: Use the inbuilt download tool



Option 2: Use the API



# Example 2: Feedback

Option 1: Use SpeedGrader and/or Gradebook

Option 2: Use the API

# Example 2: Feedback

## Option 1: Use SpeedGrader and/or Gradebook

- ✓ Allows bulk grade upload
- ✗ Cannot add feedback or attachments in bulk
- ✗ Slow and tediously repetitive
- ✗ Error-prone
- ✗ Group work is poorly supported



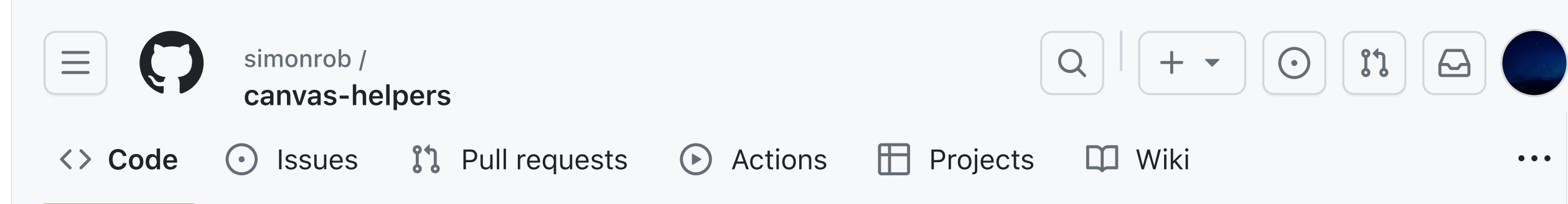
## Option 2: Use the API

- ✓ Fast
- ✓ Work offline and submit later
- ✓ Flexibly add grades, feedback, attachments and more
- ✓ Cleanly handle group work
- ✓ Handle complex assignment types and setups

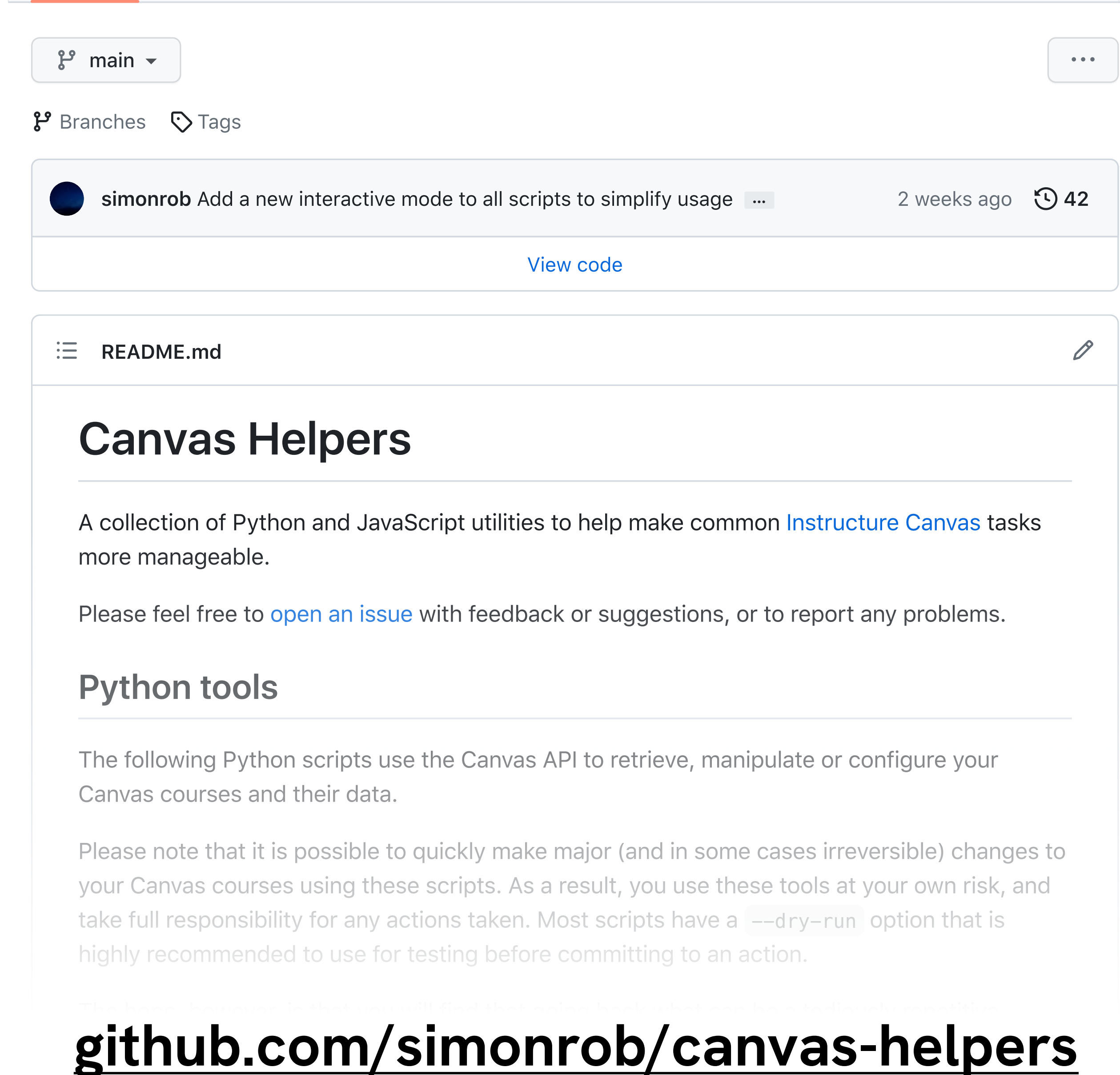


# Canvas Helpers

- Manage submissions and feedback
- Improve the Canvas web interface
- Manage inbox messages
- Deploy WebPA for contribution management
- Make moderation features useful
- Download “new quiz” results
- Remove blueprint content
- And more...



The screenshot shows the top navigation bar of a GitHub repository. On the left, there are icons for the repository menu, the GitHub logo, and the repository name 'simonrob / canvas-helpers'. On the right, there are search, add, and other utility icons. Below the navigation bar, there are tabs for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', and 'Wiki'. The 'Code' tab is currently selected and highlighted with an orange underline.



The screenshot shows the README.md file for the 'Canvas Helpers' repository. The file title is 'README.md' and it has an edit icon. The main heading is 'Canvas Helpers'. The text describes the repository as a collection of Python and JavaScript utilities to help make common Instructure Canvas tasks more manageable. It invites users to open an issue for feedback or suggestions. There is a section titled 'Python tools' which explains that the following Python scripts use the Canvas API to retrieve, manipulate, or configure Canvas courses and their data. A warning note states that using these scripts can make major (and sometimes irreversible) changes to Canvas courses, and users should use the --dry-run option for testing. At the bottom, the repository URL is provided: [github.com/simonrob/canvas-helpers](https://github.com/simonrob/canvas-helpers).

# Tips and next steps

- Use your **Sandbox course** for testing
- Try a **test run** before committing
  
- API documentation:
  - <https://api.instructure.com>
- Explore other time-saving features:
  - Rubrics, auto marking, etc

## SIMON ROBINSON Sandbox Course

### Your Sandbox site for exploring the



#### Welcome!

*This sandbox site is intended for you to use, explore and be teaching with Canvas. No students will be enrolled onto this template that will be applied to all academic courses.*

*Add a short introductory (welcome) message in this spot.* Lorem ipsum Integer nec odio. Praesent libero. Sed cursus ante dapibus diam. Sed imperdiet. Duis sagittis ipsum.



#### [Course Overview](#)

You can view background information in the [Course](#)



#### [Course Content](#)

You can view this course's content in the [Modules](#)



#### [Course Community](#)

Remember to participate in relevant discussions in the



#### [Course Assessment and Feedback](#)

# Streamlining Assessment and Feedback Management Using the Canvas API

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