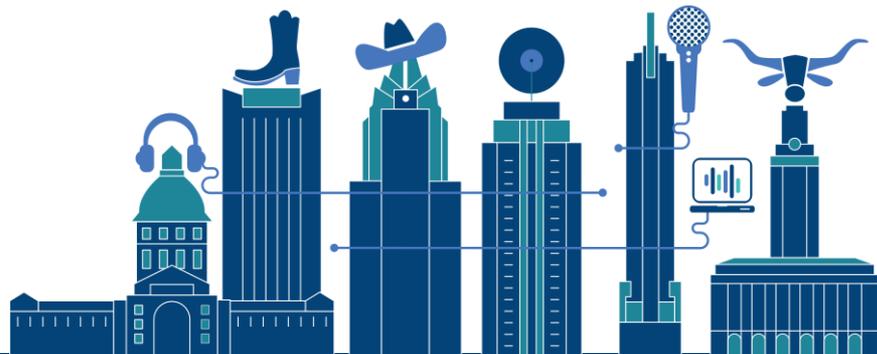


Integrating with REST and SIS using Python and Flask

Tom Salyers

University of Sheffield

July 23rd, 2019



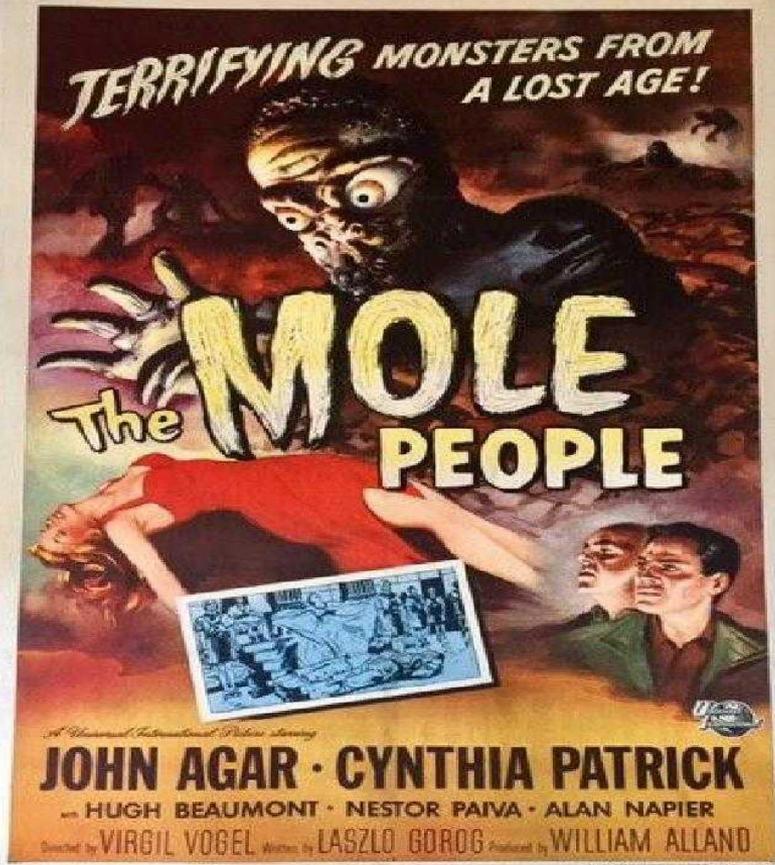
Forward-Looking Statement

Statements regarding our product development initiatives, including new products and future product upgrades, updates or enhancements represent our current intentions, but may be modified, delayed or abandoned without prior notice and there is no assurance that such offering, upgrades, updates or functionality will become available unless and until they have been made generally available to our customers.



Universities and Colleges Information Systems Association (UCISA)

- UK professional body for digital practitioners in education
- Networking, collaborating, sharing information and practices between institutions
- www.ucisa.ac.uk



A side note...

- Our VLE is called MOLE
- Those of us who work on it are informally called “the MOLE people”

Why Python and Flask?

- Familiarity
- Relative simplicity
- Speed of development

The SIS Framework and Python

Or: How I Learned to Stop Worrying and Love Uploading Feed Files

The "Upload feed file" SIS page

* File Location

Data Type

Select the type of data in the Feed File. Posting an object of

Operation Type *Select the type of operation to be performed. Stored object*

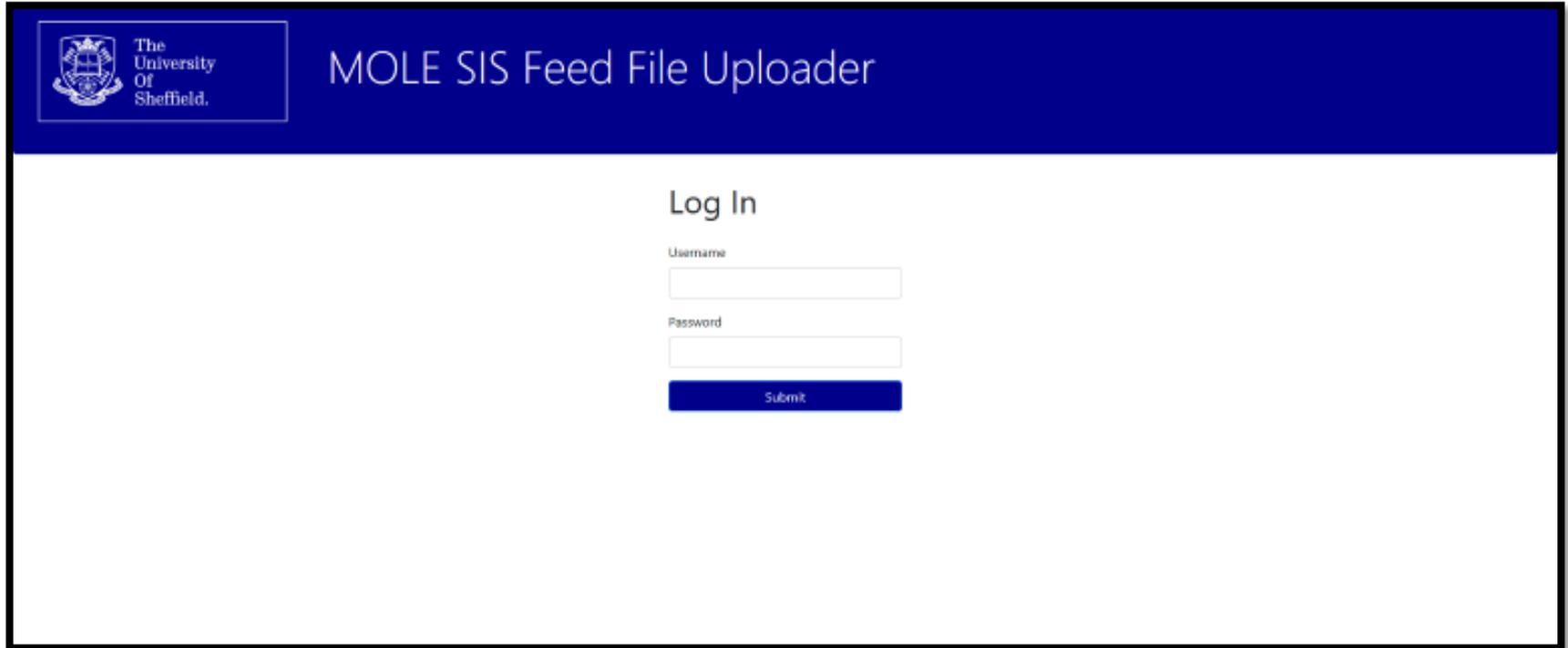
Store

Complete Refresh 

Delete

The "please ruin my day" button

So I created this...



The screenshot shows a web interface with a dark blue header. On the left of the header is the University of Sheffield logo and name. To the right of the logo, the text "MOLE SIS Feed File Uploader" is displayed in white. Below the header, the page has a white background. Centered on the page is a "Log In" section. It includes a "Username" label above a text input field, a "Password" label above another text input field, and a blue "Submit" button below the password field.

REST APIs and Python

Or: We're Going to Need an Interpreter

The care and feeding of REST APIs

- OAuth 2 access token(s)
 - Caching—tokens aren't cheap
- JSON

SITS-MOLE System (name pending)

- Exposes its own endpoints
- Forwards requests from those endpoints to the equivalent MOLE REST endpoints
- Gets an OAuth token and transforms XML to JSON along the way
- Logs the request and response
- Returns the response to SITS

Getting user info—no cached token

https://falstaff.shef.ac.uk/v1/users/username:fakeuser

GET https://falstaff.shef.ac.uk/v1/users/username:fakeuser Send Save

Params Authorization **Headers (8)** Body Pre-request Script Tests Cookies Code Comments (0)

▼ Headers (1)

KEY	VALUE	DESCRIPTION	...	Bulk Edit	Presets ▼
<input checked="" type="checkbox"/> Authorization	8675309				
Key	Value	Description			

▶ Temporary Headers (7) ⓘ

Body Cookies Headers (8) Test Results Status: 200 OK Time: 1706 ms Size: 500 B Download

Pretty Raw Preview HTML

```
i 1 [{"id": "_220322_1", "uuid": "1cb9c9c6fbb74c70ab7d74ddb899f2ea", "externalId": "fakeuser", "dataSourceId": "_2_1", "userName": "fakeuser", "educationLevel": "Unknown", "gender": "Unknown", "created": "2019-02-26T11:53:32.000Z", "systemRoleIds": ["User"], "availability": {"available": "Yes"}, "name": {"given": "Fake", "family": "User", "middle": "Notreal"}}]
```

Getting user info—cached token

https://falstaff.shef.ac.uk/v1/users/username:fakeuser

GET https://falstaff.shef.ac.uk/v1/users/username:fakeuser Send Save

Params Authorization **Headers (8)** Body Pre-request Script Tests Cookies Code Comments (0)

▼ Headers (1)

KEY	VALUE	DESCRIPTION	...	Bulk Edit	Presets
<input checked="" type="checkbox"/> Authorization	8675309				
Key	Value	Description			

► Temporary Headers (7) ⓘ

Body Cookies Headers (8) Test Results Status: 200 OK Time: 204 ms Size: 497 B Download

Pretty Raw Preview HTML

```
1 [{"id":"_220334_1","uuid":"ebd6ae2ab33d403e91b210b45fb53497","externalId":"fakeuser","dataSourceId":"_2_1","userName":"fakeuser","educationLevel":"Unknown","gender":"Unknown","created":"2019-05-09T09:11:24.000Z","systemRoleIds":["User"],"availability":{"available":"Yes"},"name":{"given":"Fake","family":"User","middle":"Notreal"}}]
```

Questions?

t.salyers@sheffield.ac.uk

Don't forget
to rate this session
in the BbWorld app.

