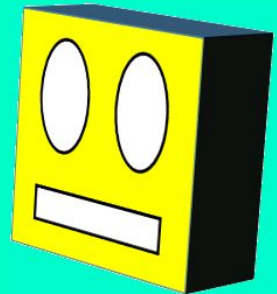


MY VERY FIRST ROBOT

**Programming a Twitter Bot to Promote Open Access
Scholarship**

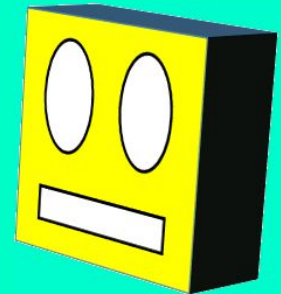
WHY TWEETS?
WHY BOTS?



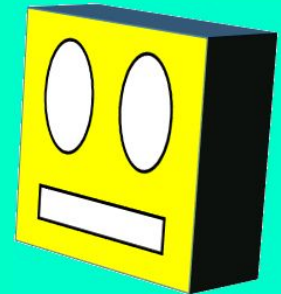
WHY TWEETS? WHY BOTS?

- Increased visibility and findability
 - Social Media Optimization
 - Rossman & Young (2015)
- Increased Automatic Page Indexing
- Save time manually sending out tweets
- It's good stuff, Brent.

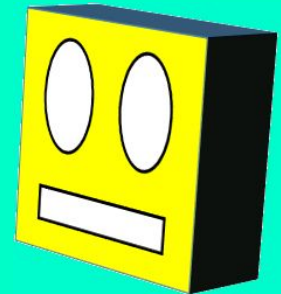
THINKING
SYSTEMATICALLY



OR



HOW DO I GET IT TO
DO WHAT I WANT



THINKING SYSTEMATICALLY

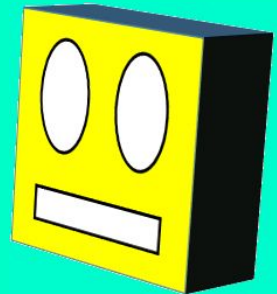
Systems thinking: A
practical field guide

Andreas Orphanides

THINKING SYSTEMATICALLY

1. Get data
2. Pull out data that's important
3. Structure the data so I can use it at a later time
4. Send out tweet

DEVELOPMENT



THINKING SYSTEMATICALLY

1. **Get data**
2. Pull out data that's important
3. Structure the data so I can use it at a later time
4. Send out tweet

THINKING SYSTEMATICALLY

```
▼<rss xmlns:dc="http://purl.org/dc/elements/1.1/" version="2.0">
  ▼<channel>
    <title>MD-SOAR</title>
    <link>http://mdsoar.org:80</link>
    ▼<description>
      The MD-SOAR digital repository system captures, stores, indexes, preserves, and distributes digital research material.
    </description>
    <pubDate xmlns="http://apache.org/cocoon/i18n/2.1">Tue, 12 Jun 2018 12:56:27 GMT</pubDate>
    <dc:date>2018-06-12T12:56:27Z</dc:date>
    ▼<item>
      ▼<title>
        Firearm Detection Using Wrist Worn Tri-Axis Accelerometer Signals
      </title>
      <link>http://hdl.handle.net/11603/10912</link>
      ▼<description>
        Firearm Detection Using Wrist Worn Tri-Axis Accelerometer Signals Khan, Md Abdullah Al Hafiz; Welsh, David; Roy, Nirmalya
        Gunshot detection traditionally has been a task performed with acoustic signal processing. While this type of detection
        can give cities, civil services and training institutes a method to identify specific locations of gunshots, the nature
        of acoustic detection may not provide the fine-grained detection accuracy and sufficient metrics for performance
        assessment. If however you examine a different signature of a gunshot, the recoil, detection of the same event with
        accelerometers can provide you with persona and firearm model level detection abilities. The functionality of
        accelerometer sensors in wrist worn devices have increased significantly in recent time. From fitness trackers to smart
        watches, accelerometers have been put to use in various activity recognition and detection applications. In this paper,
        we design an approach that is able to account for the variations in firearm generated recoil, as recorded by a wrist worn
        accelerometer, and helps categorize the impulse forces. Our experiments show that not only can wrist worn accelerometers
        detect the differences in handgun rifle and shotgun gunshots, but the individual models of firearms can be distinguished
        from each other. The application of this framework could be extended in the future to include real time detection
        embedded in smart devices to assist in firearms training and also help in crime detection and prosecution.
      </description>
      <guid isPermaLink="false">http://hdl.handle.net/11603/10912</guid>
    </item>
  </channel>
</rss>
```

HTTPS://MDSOAR.ORG/FEED/RSS_2.0/SITE

THINKING SYSTEMATICALLY

CURL

(simple command line data transfer tool)

THINKING SYSTEMATICALLY

Write to a file

THINKING SYSTEMATICALLY

~~1. Get data~~

2. **Pull out data that's important**

3. Structure the data so I can use it at a later time

4. Send out tweet

THINKING SYSTEMATICALLY

```
▼<rss xmlns:dc="http://purl.org/dc/elements/1.1/" version="2.0">
  ▼<channel>
    <title>MD-SOAR</title>
    <link>http://mdsoar.org:80</link>
  ▼<description>
    The MD-SOAR digital repository system captures, stores, indexes, preserves, and distributes digital research material.
  </description>
  <pubDate xmlns="http://apache.org/cocoon/i18n/2.1">Tue, 12 Jun 2018 12:56:27 GMT</pubDate>
  <dc:date>2018-06-12T12:56:27Z</dc:date>
  ▼<item>
    ▼<title>
      Firearm Detection Using Wrist Worn Tri-Axis Accelerometer Signals
    </title>
    <link>http://hdl.handle.net/11603/10912</link>
    ▼<description>
      Firearm Detection Using Wrist Worn Tri-Axis Accelerometer Signals Khan, Md Abdullah Al Hafiz; Welsh, David; Roy, Nirmalya
      Gunshot detection traditionally has been a task performed with acoustic signal processing. While this type of detection
      can give cities, civil services and training institutes a method to identify specific locations of gunshots, the nature
      of acoustic detection may not provide the fine-grained detection accuracy and sufficient metrics for performance
      assessment. If however you examine a different signature of a gunshot, the recoil, detection of the same event with
      accelerometers can provide you with persona and firearm model level detection abilities. The functionality of
      accelerometer sensors in wrist worn devices have increased significantly in recent time. From fitness trackers to smart
      watches, accelerometers have been put to use in various activity recognition and detection applications. In this paper,
      we design an approach that is able to account for the variations in firearm generated recoil, as recorded by a wrist worn
      accelerometer, and helps categorize the impulse forces. Our experiments show that not only can wrist worn accelerometers
      detect the differences in handgun rifle and shotgun gunshots, but the individual models of firearms can be distinguished
      from each other. The application of this framework could be extended in the future to include real time detection
      embedded in smart devices to assist in firearms training and also help in crime detection and prosecution.
    </description>
    <guid isPermaLink="false">http://hdl.handle.net/11603/10912</guid>
  </item>
```

It's already

XML

Cool!

THINKING SYSTEMATICALLY

Element Tree

(Python library that lets you create an XML element tree
that your program can understand)

THINKING SYSTEMATICALLY

Important elements

THINKING SYSTEMATICALLY

`<title>In the Minds of the Living: The
Adaptive Reuse of Monuments and
Memorials</title>`

THINKING SYSTEMATICALLY

`<link>http://hdl.handle.net/11603/10910</link>`

THINKING SYSTEMATICALLY

For each unique* item,

Get the <title> and the <link> elements

THINKING SYSTEMATICALLY

~~1. Get data~~

~~2. Pull out data that's important~~

3. **Structure the data so I can use it at a later time**

4. Send out tweet

THINKING SYSTEMATICALLY

Txt file

<title> <link>

<title> <link>

<title> <link>

<title> <link>

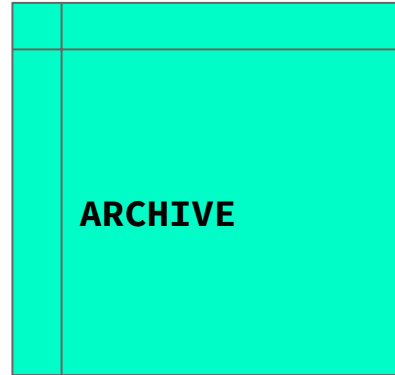
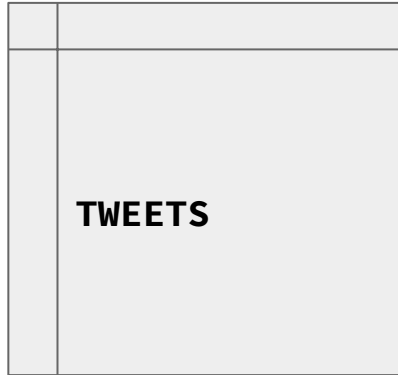
<title> <link>

THINKING SYSTEMATICALLY

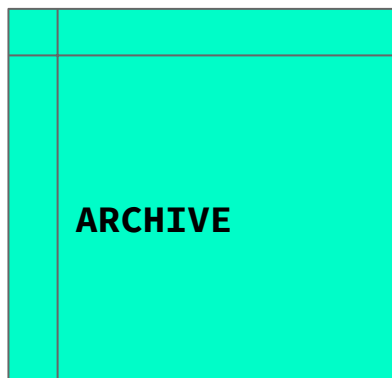
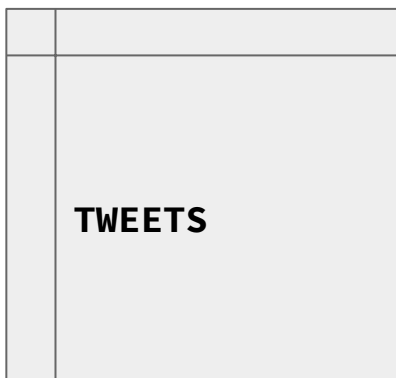
Database

id	url	title
1	<link>	<title>
2	<link>	<title>
3	<link>	<title>
4	<link>	<title>
5	<link>	<title>

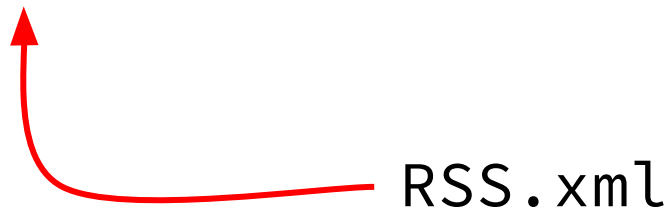
THINKING SYSTEMATICALLY



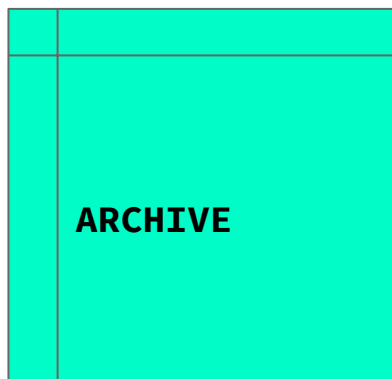
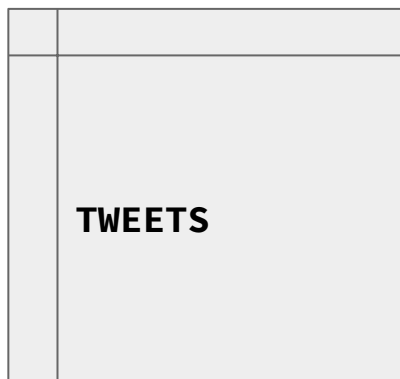
THINKING SYSTEMATICALLY



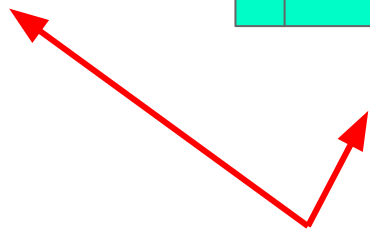
Is the URL in the
archive?*



THINKING SYSTEMATICALLY



<title>



<link>

← - - - - - RSS.xml

THINKING SYSTEMATICALLY

~~1. Get data~~

~~2. Pull out data that's important~~

~~3. Structure the data so I can use it at a later time~~

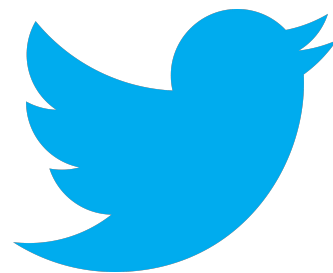
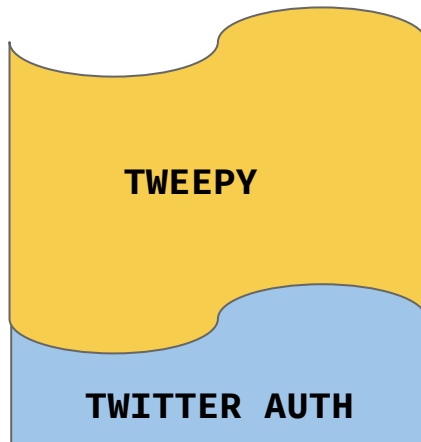
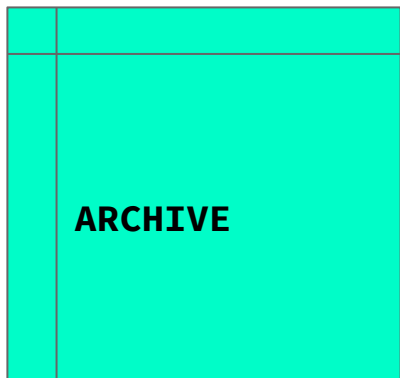
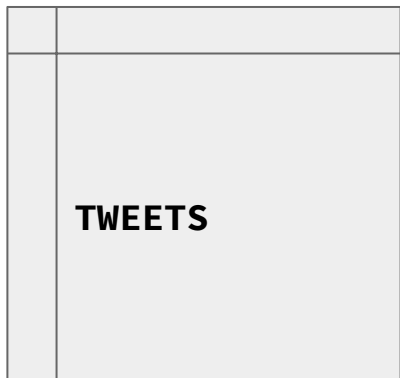
4. **Send out tweet**

THINKING SYSTEMATICALLY

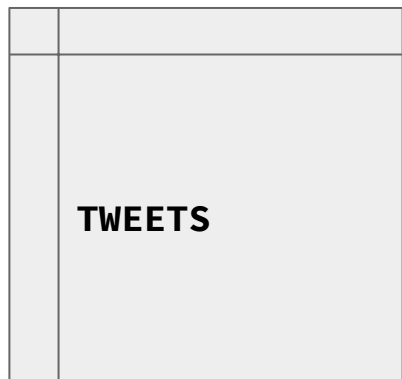
TWEEPY

(Python library that facilitates Twitter
API use)

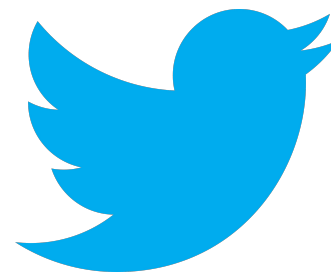
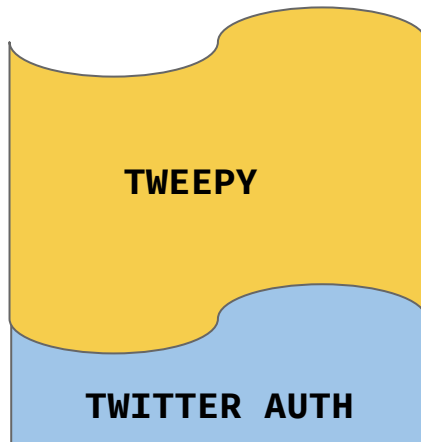
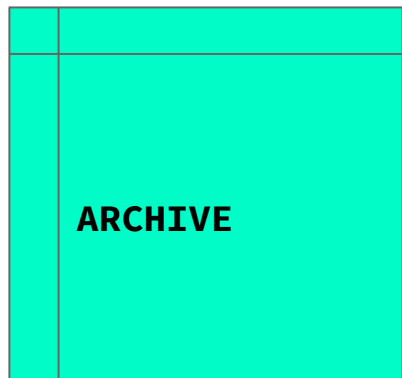
THINKING SYSTEMATICALLY



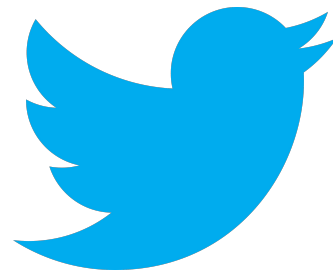
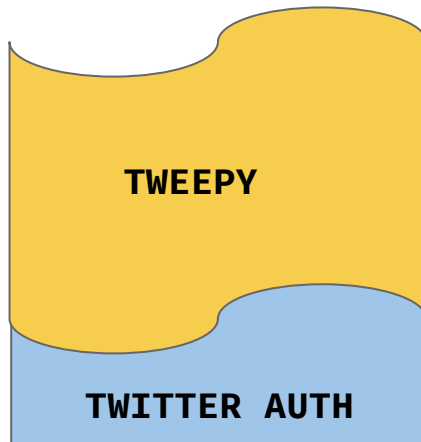
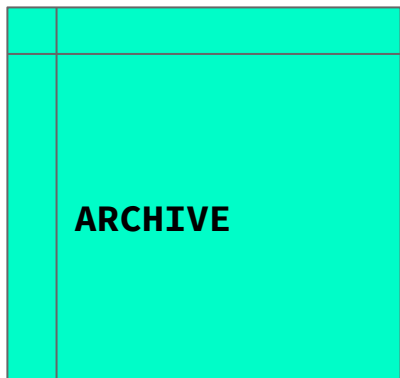
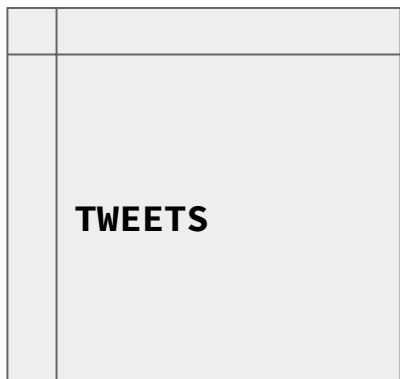
THINKING SYSTEMATICALLY



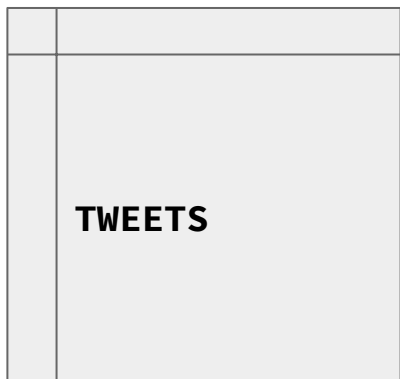
→ title + link



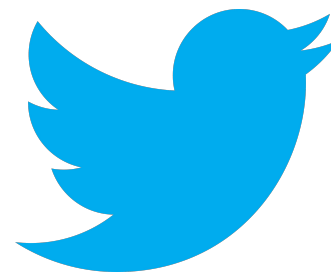
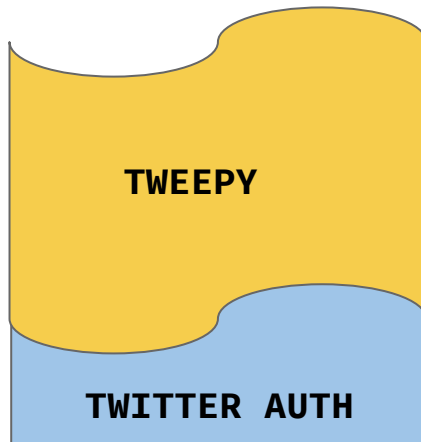
THINKING SYSTEMATICALLY

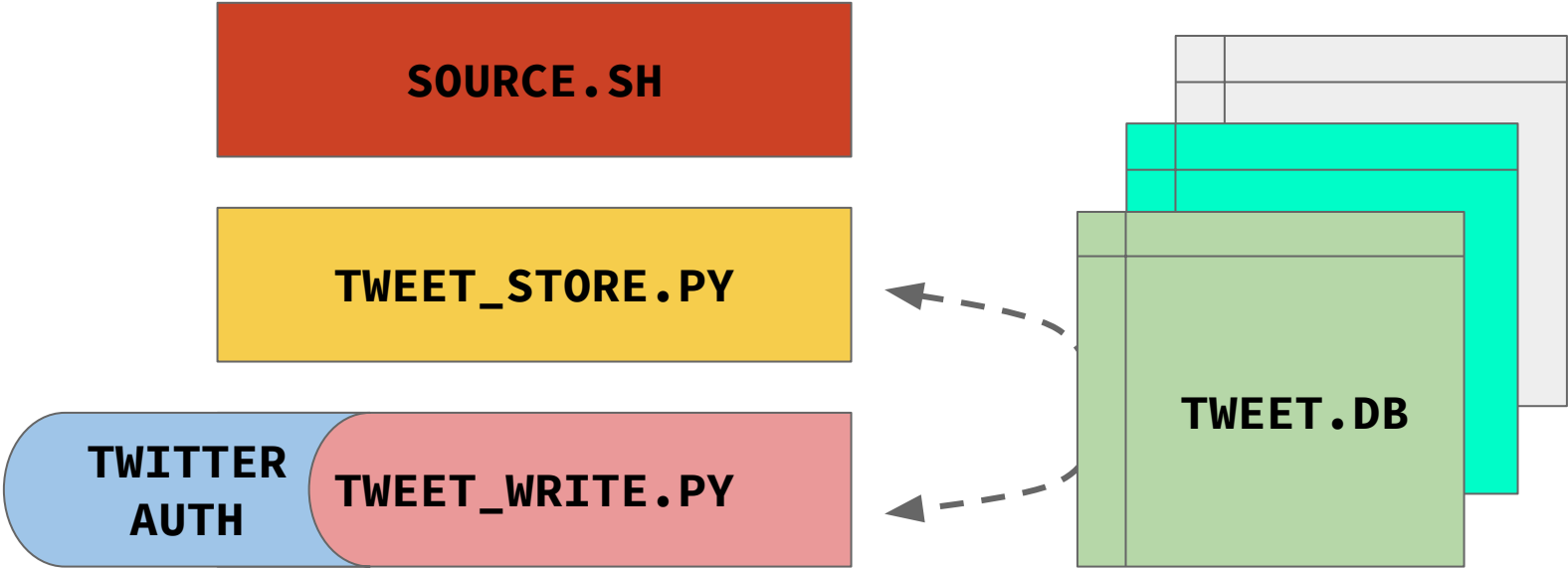


THINKING SYSTEMATICALLY



Delete title
+ link







MD-SOAR tweetbot-test
@test_mdsoar
1 Follower

Follow

Tweets Tweets & replies Media Likes

- MD-SOAR tweetbot-test** @test_mdsoar · 18h
hdl.handle.net/11603/10909 - Traditional Dance Arts in Education; Embracing our Diverse American Tapestry
- MD-SOAR tweetbot-test** @test_mdsoar · 18h
hdl.handle.net/11603/10910 - In the Minds of the Living: The Adaptive Reuse

New to Twitter?
Sign up now to get your own personalized timeline!
Sign up

- Trending now**
- #Dumbo**
Watch the new trailer now and see the film in theatres March 2019.
Promoted by Dumbo
 - Fernando Hierro**
34.7K Tweets
 - #BTSPROMPARTY**
356K Tweets
 - #Lopetegui**
33.3K Tweets
 - #Mundial2026**
7,948 Tweets



MD-SOAR tweetbot-test @test_mdsoar · 18h



hdl.handle.net/11603/10910 - In the Minds of the Living: The Adaptive Reuse of Monuments and Memorials



In the Minds of the Living: The Adaptive Reuse of Monuments and Memorials

**Author/Creator**

Gilman-Forlini, Jackson

Date

2018-06-06

Type of Work

201 pages

Text

Thesis

Department

Welch Center for Graduate and Professional Studies

Program

MA in Historic Preservation

Files[Gilman-Forlini, MAHP Thesis - Signed Copy \(4.315Mb\)](#)**Permanent Link**<http://hdl.handle.net/11603/10910>**Collections**[Goucher College MA in Historic Preservation](#)

Search



- Search MD-SOAR
- This Collection

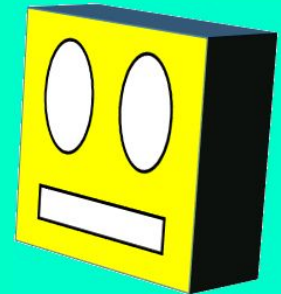
MY ACCOUNT

[Login](#)[Register](#)

BROWSE

This Collection[By Issue Date](#)[Titles](#)[Authors](#)[Subjects](#)

NEXT STEPS
&
IMPROVEMENTS



NEXT STEPS / IMPROVEMENTS

- Final implementation
- Distribution
- Refinement
 - Single program
 - Improved error handling

ds_tweet_bot

This repo is a homegrown twitter bot developed for the harvest and dissemination of resources published by a DSpace RSS feed. While it could feasibly be used to tweet out other RSS-type resource data, this program was designed with DSpace in mind (in particular, [MDSOAR](#)).

The primary workflow is as follows:

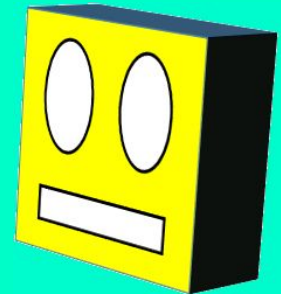
- source.sh set to run at a given time. Will check to see if database tables are appropriately created and will create if not. source.sh will harvest rss feed indicated in script will initiate tweet_store.py which will write out relevant tweet data to tweet.db if resource handle is not already present in archive (i.e. has not already passed through database).
- tweet_write.py set to run at a given time. Takes entered data from RSS feed and generates tweet text based on resource handle and title. This relies on the [tweepy library](#).

A few prerequisites & considerations:

- Download all libraries indicated in the python files.
- Existing database is titled tweet.db and is used running SQLITE3. tweet_store.py will create tables on first run.
- tweet_write.py will require you Twitter application keys. If you are not familiar with creating Twitter apps, check out the [following guide](#).

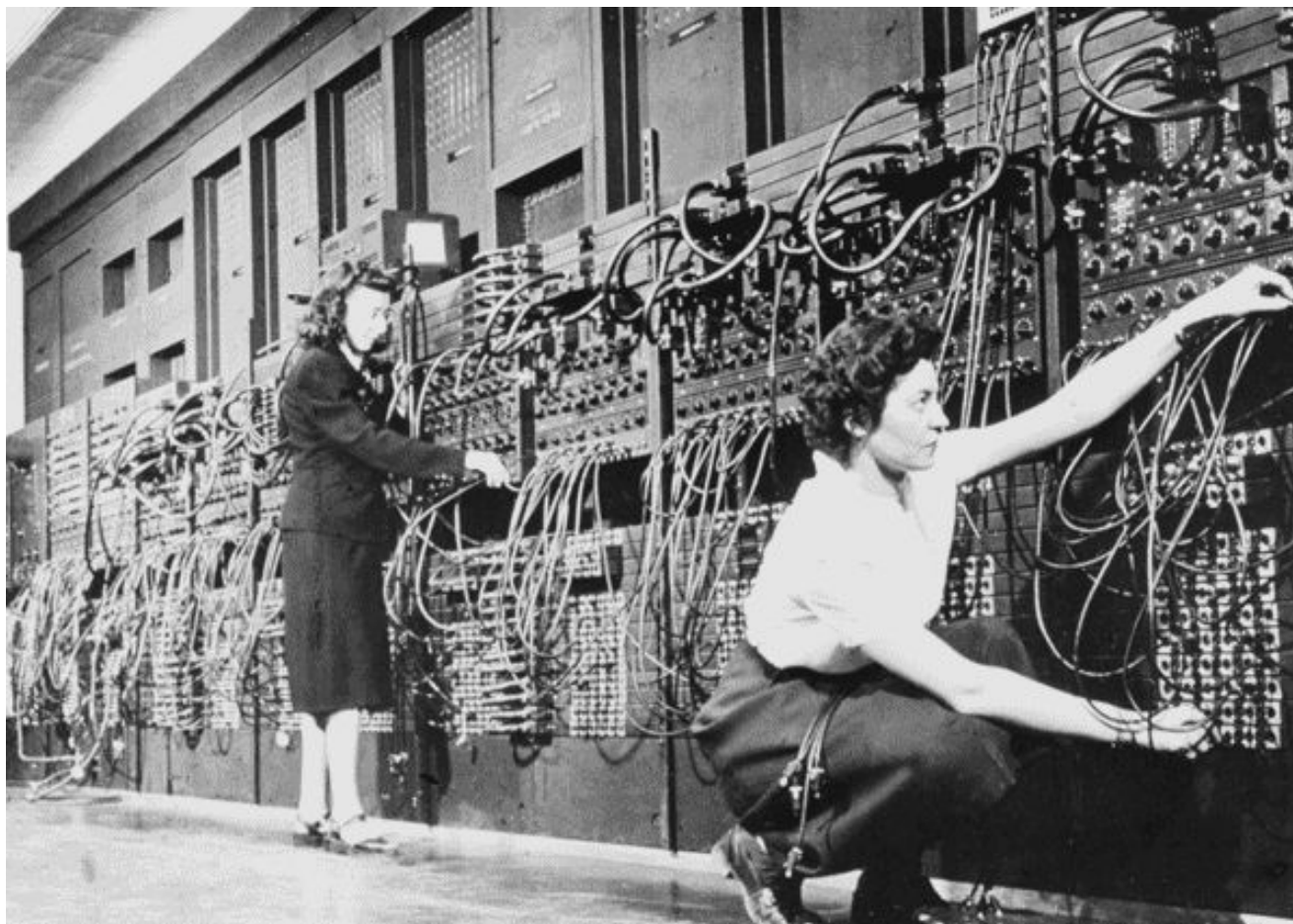
[HTTPS://GITHUB.COM/23KOIVISTO/DS_TWEET_BOT](https://github.com/23koivisto/ds_tweet_bot)

CONCLUSIONS
&
TAKE AWAYS



CONCLUSIONS / TAKE AWAYS

- Development of social media automation within reach
- Yet, building even basic programs can be a challenge for those new to development (i.e. me)
- But the real value...



WORKS CITED

- Koivisto, J. (2018). Ds_tweet_bot. Retrieved from https://github.com/23koivisto/ds_tweet_bot.
- Orphanides, A. (2018, February 9). Systems thinking: a practical field guide. Retrieved from osf.io/94c73.
- Rossmann, D. & Young, S (2015). "Social Media Optimization: Making Library Content Shareable and Engaging", *Library Hi Tech* 33(4). Accessed December 20, 2017. Retrieved from <https://doi.org/10.1108/LHT-05-2015-0053>.
- Tweepy: An easy-to-use Python library for accessing the Twitter API. Retrieved from <http://www.tweepy.org/>.