



Scripting Your Web GIS - Introduction to the ArcGIS API for Python

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Topics Covered

- What is the ArcGIS API for Python?
- User Groups
- Overview of Modules
- Functionality
- GIS Module
- Scripting workflows for
 - Org Administrators
 - Content Publishers
 - GIS Analysts and Data Scientists
 - Power Users and Developers

ArcGIS API for Python vs ArcPy

ArcGIS API for Python

- Script against a portal
 - ArcGIS Online or ArcGIS Enterprise
 - Python 3.5
- Analysis, Portal Admin, Content Creation, Big Data Analysis

ArcPy

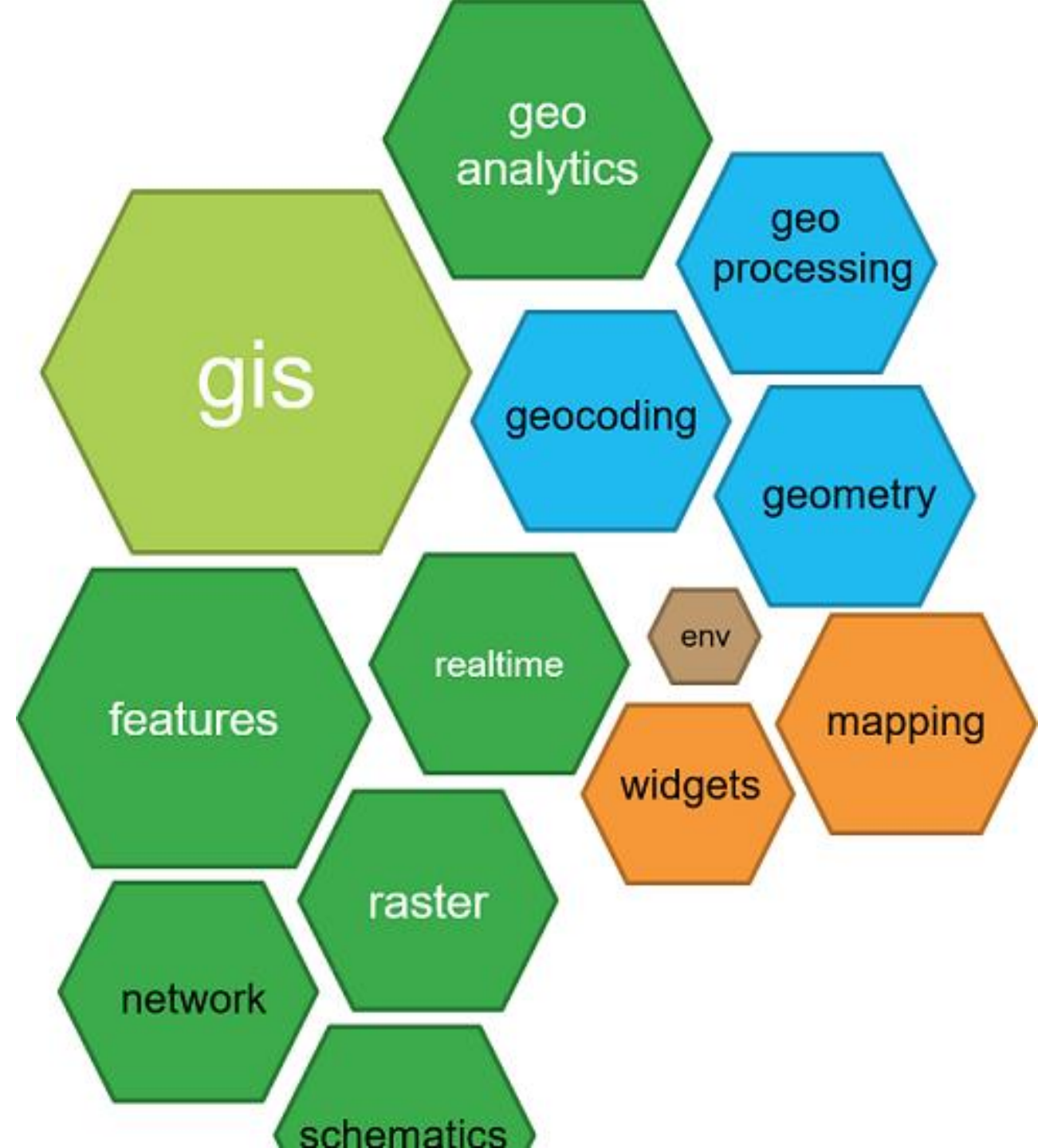
- ArcGIS Desktop
 - ArcMap – Python 2.7
 - ArcGIS Pro – 3.5
- Mostly geoprocessing
- Some map automation

Four different
groups
working with
the ArcGIS API
for Python

- Org Administrators
- Content Publishers
- GIS Analysts and Data Scientists
- Power Users/Developers

Overview of the ArcGIS API for Python

- A Pythonic GIS API
 - Corresponds to best practices
 - Uses standard Python constructs
 - Data structures with clean, readable idioms
- Easy for a Python programmer to use ArcGIS
- Easy for an ArcGIS user to script and automate their GIS



Modules

- `arcgis.gis`
- `arcgis.env`
- `arcgis.features`
- `arcgis.raster`
- `arcgis.network`
- `arcgis.schematics`
- `arcgis.geoanalytics`
- `arcgis.geocoding`
- `arcgis.geometry`
- `arcgis.geoprocessing`
- `arcgis.realtime`
- `arcgis.mapping`

Online Help Resources

- <https://developers.arcgis.com/python/>

Samples

- <https://github.com/Esri/arcgis-python-api>

Installing the API

- You will [install the API](#) using [Conda](#)
 - Popular package and environment manager application
- First need to get Conda
 - ArcGIS Pro - YES
 - Conda is already on your computer
 - ArcGIS Pro – NO
 - Install the latest version of [Anaconda for Python](#)
- Install arcgis package
 - In a command prompt: `conda install -c esri arcgis`
- Start jupyter notebook
 - Test the install

What is Conda?

- <https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=What+is+conda?>

What is jupyter notebook?

- http://jupyter-notebook-beginner-guide.readthedocs.io/en/latest/what_is_jupyter.html

Overview of Functionality

- GIS module
- Finding places with geocoding
- Mapping and visualization
- Feature data and analysis
- Image and raster analysis
- Using geoprocessing tools
- Working with big data

Getting started with the GIS module

- <https://developers.arcgis.com/python/guide/using-the-GIS/>

Finding places with geocoding

- <https://developers.arcgis.com/python/guide/using-the-geocode-function/>

Mapping and visualization

- Map Widget
 - <https://developers.arcgis.com/python/guide/using-the-map-widget/>
- Smart mapping
 - <https://developers.arcgis.com/python/guide/smart-mapping/>
- Working with web maps and web scenes
 - <https://developers.arcgis.com/python/guide/working-with-web-maps-and-web-scenes/>

Feature data and analysis

- <https://developers.arcgis.com/python/guide/working-with-feature-layers-and-features/>

Image and raster analysis

- Imagery Layers

- <https://developers.arcgis.com/python/guide/using-imagery-layers/>

- Raster Analysis

- <https://developers.arcgis.com/python/guide/using-imagery-layers/>

Using geoprocessing tools

- <https://developers.arcgis.com/python/guide/an-introduction-to-geoprocessing/>

Working with big data

- <https://developers.arcgis.com/python/guide/working-with-big-data/>

User
Workflows:

Org Administrators

Possible Workflows

automating making groups
user

Check credit usage

Set permission level

Cycle through user content
and delete out dated
content

migrate content from dev
to stg to dev

inviting users, changing
user roles

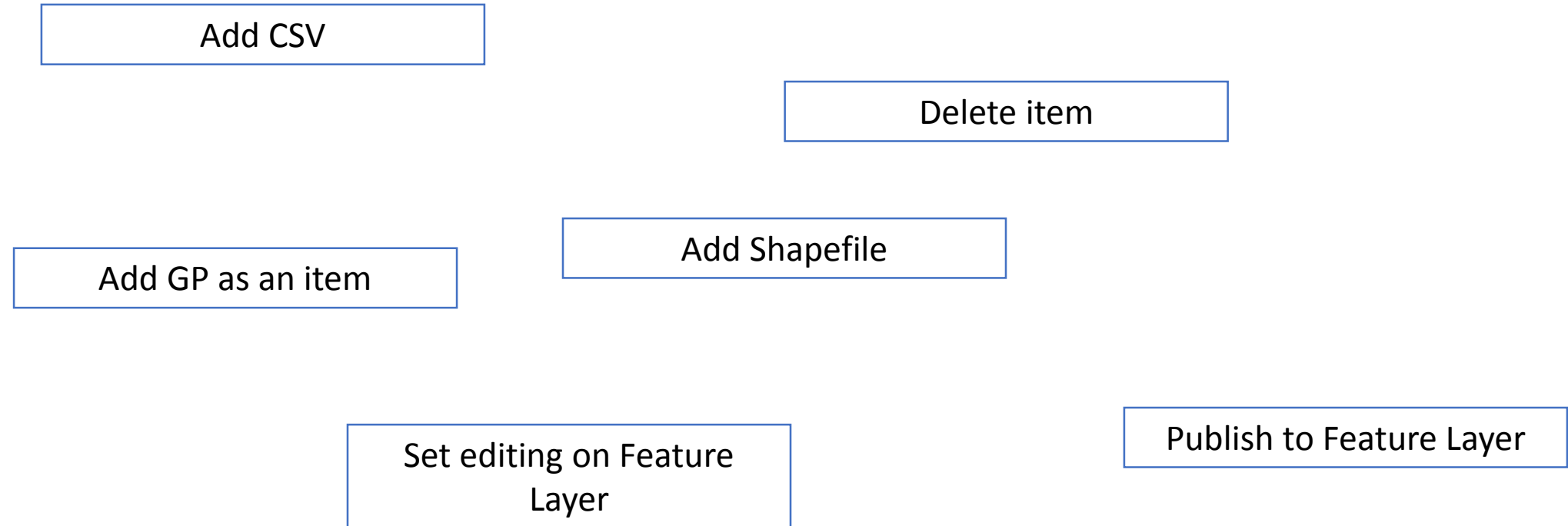
Add users to a group

Delete users that have not
logged in

User
Workflows:

Content Publishers

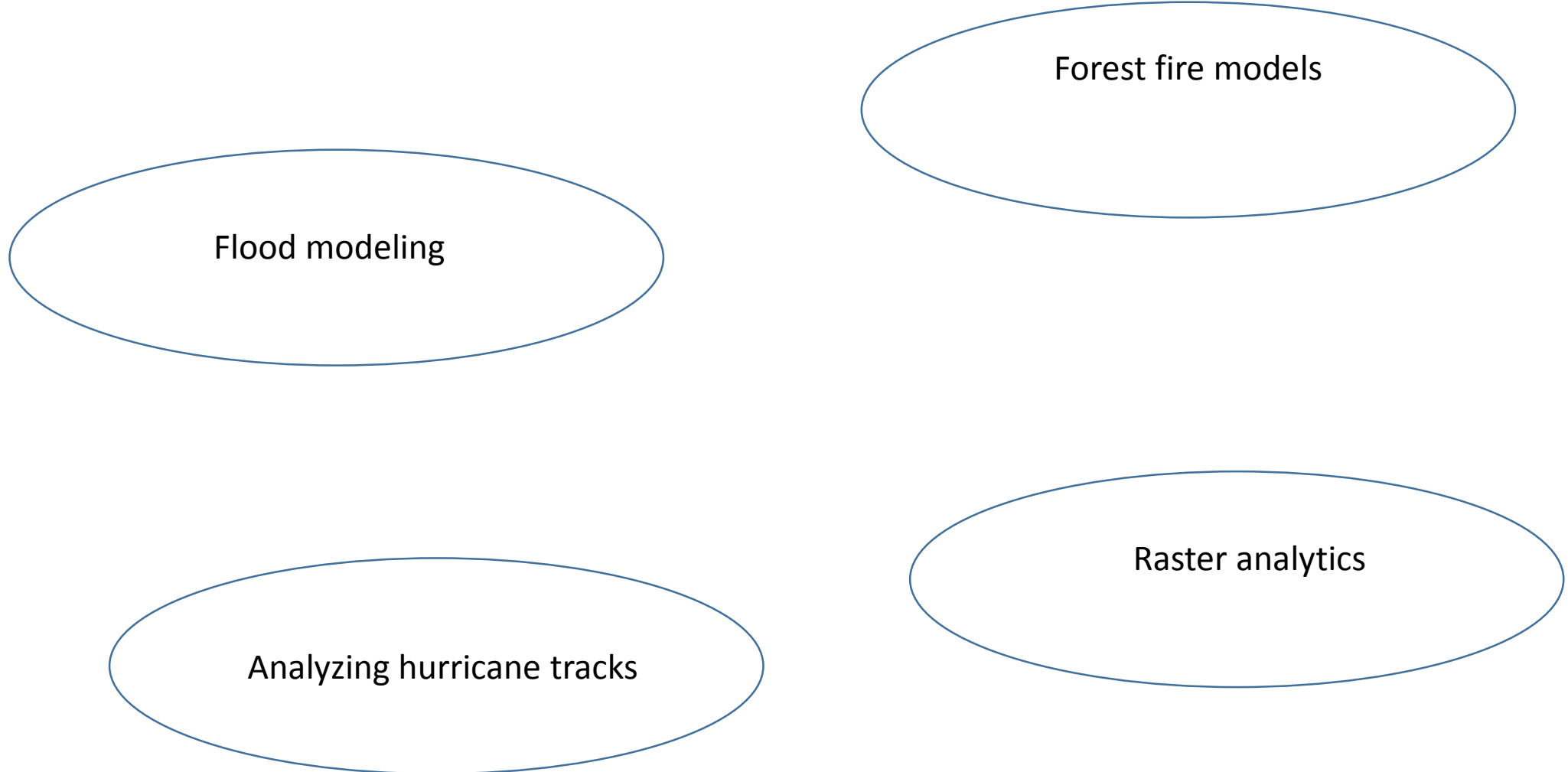
Possible Workflows



User
Workflows:

**GIS Analysts and Data
Scientists**

Possible Workflows



Flood modeling

Analyzing hurricane tracks

Forest fire models

Raster analytics

User
Workflows

Power Users/Developers

Possible Workflows

Raster Management

Geoprocessing

Directions

Edit geometries

Address locating

Buffer then select by
location

Spatial Analysis

Conclusion and Questions

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