Flask

web development,
one drop at a time

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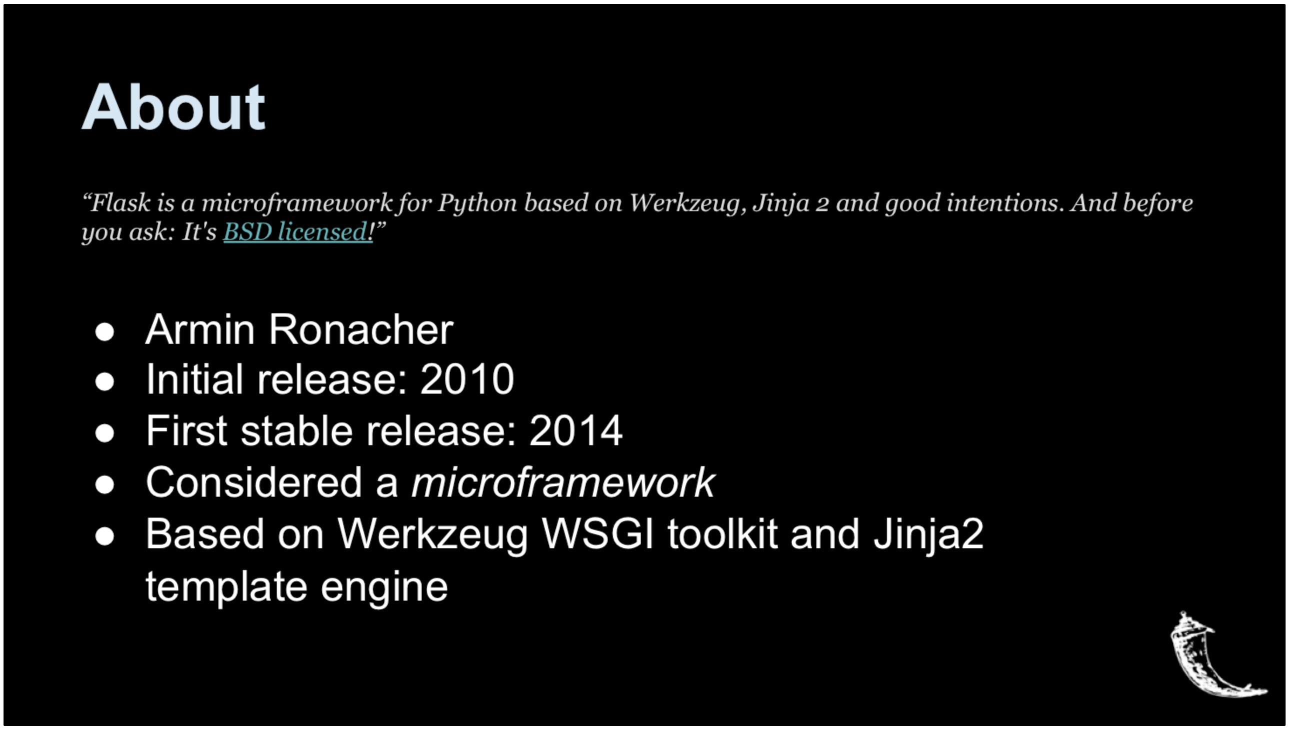
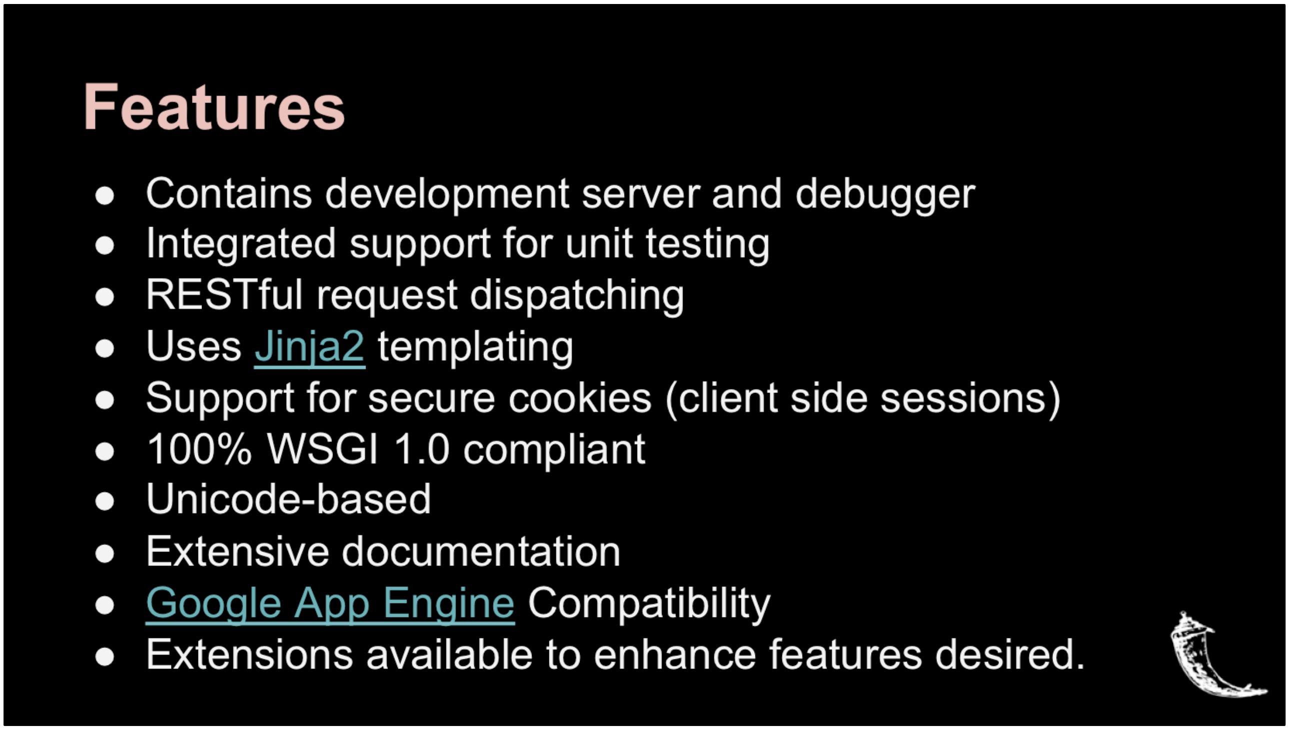


About

“Flask is a microframework for Python based on Werkzeug, Jinja 2 and good intentions. And before you ask: It's BSD licensed!”

- Armin Ronacher
- Initial release: 2010
- First stable release: 2014
- Considered a *microframework*
- Based on Werkzeug WSGI toolkit and Jinja2 template engine

- Armin Ronacher
  - Part of Pocoo, international group of python enthusiasts
  - Originally April Fools Joke
- Microframework
  - does not presume or force a developer to use a particular tool or library.
  - It has no database abstraction layer, form validation, or any other components
  - HOWEVER, it supports extensions that can add application features as if they were implemented in Flask itself.
    - e.g., object-relational mappers, form validation, upload handling, various open authentication technologies and several common framework related tools
- Based on Werkzeug WSGI toolkit and Jinja2 template engine
  - Also both pocoo projects



Features

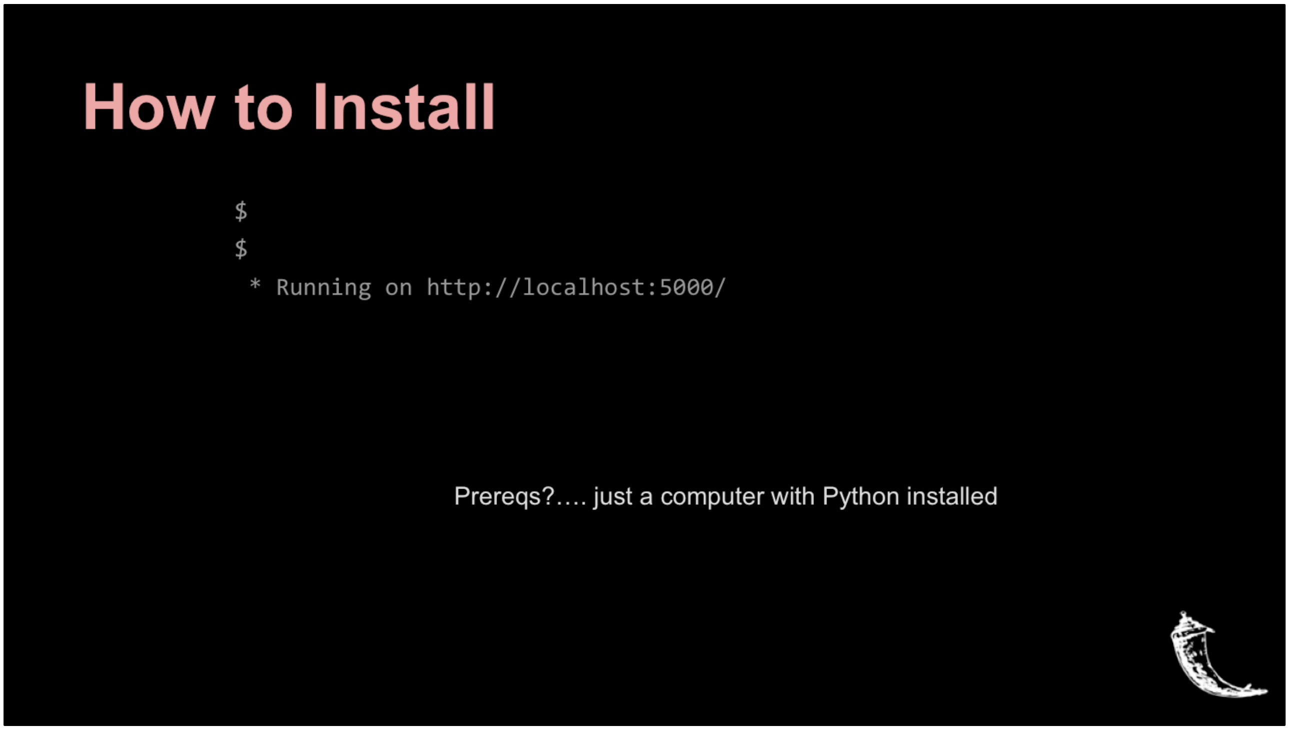
- Contains development server and debugger
- Integrated support for unit testing
- RESTful request dispatching
- Uses Jinja2 templating
- Support for secure cookies (client side sessions)
- 100% WSGI 1.0 compliant
- Unicode-based
- Extensive documentation
- Google App Engine Compatibility
- Extensions available to enhance features desired.

Shamelessly adapted from Wikipedia.

… Who uses it?

from: http://www.quora.com/What-is-the-largest-site-created-using-Flask

#1 It seems the largest is probably Pinterest!
#2: Twilio appears to be using Flask for all public and private APIs. They have authored Flask-Restful for that purpose!: [Twilio Engineering Blog](). And it must be now added, this is a very large scale company
#3: Linked-in uses Flask as its "internal stack"!
#4: President Obama's 2012 campaign used Flask:
[How Team Obama's tech efficiency left Romney IT in dust]()

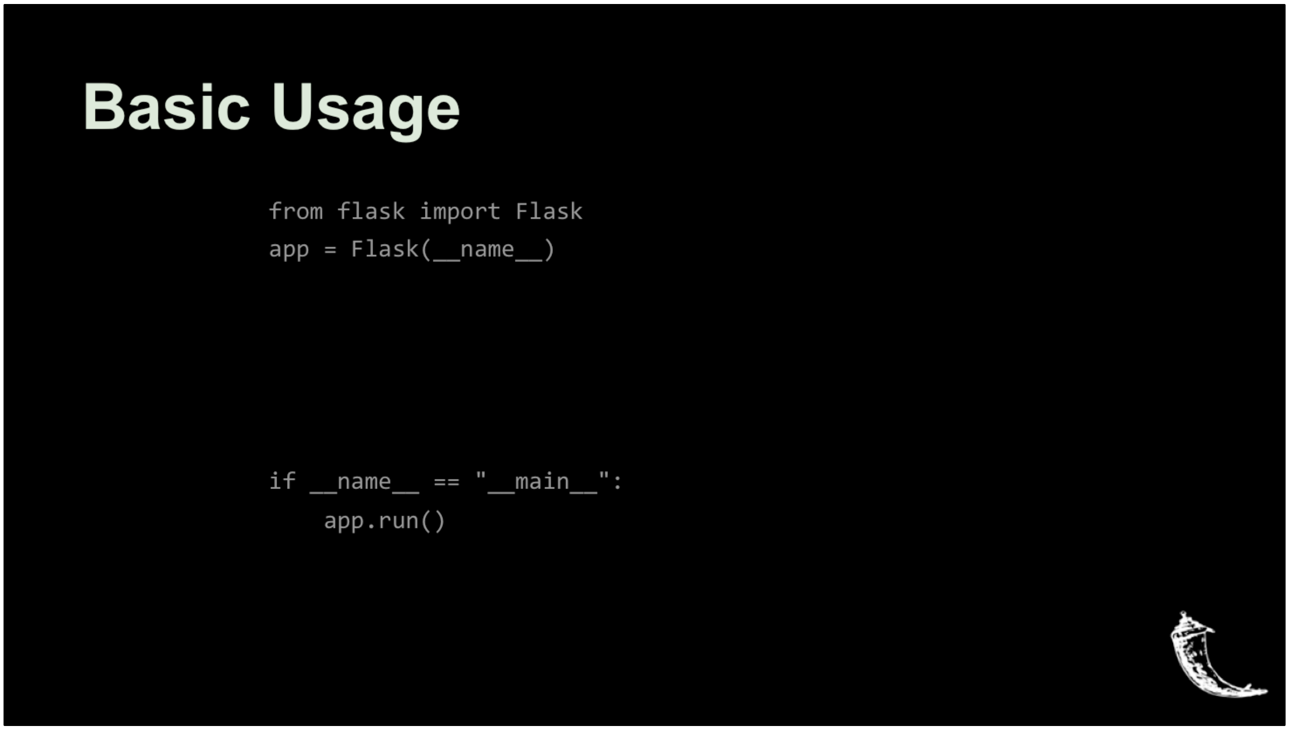


How to Install

```
$
$
 * Running on http://localhost:5000/
```

Prereqs?…. just a computer with Python installed

Later, we can also use pip to install extensions.



Basic Usage

```
from flask import Flask
app = Flask(__name__)





if __name__ == "__main__":
    app.run()
```

Explanation:

Lines 1-2
All Flask applications must create an *application instance* where the server passes it information from the client using the WSGI protocol.

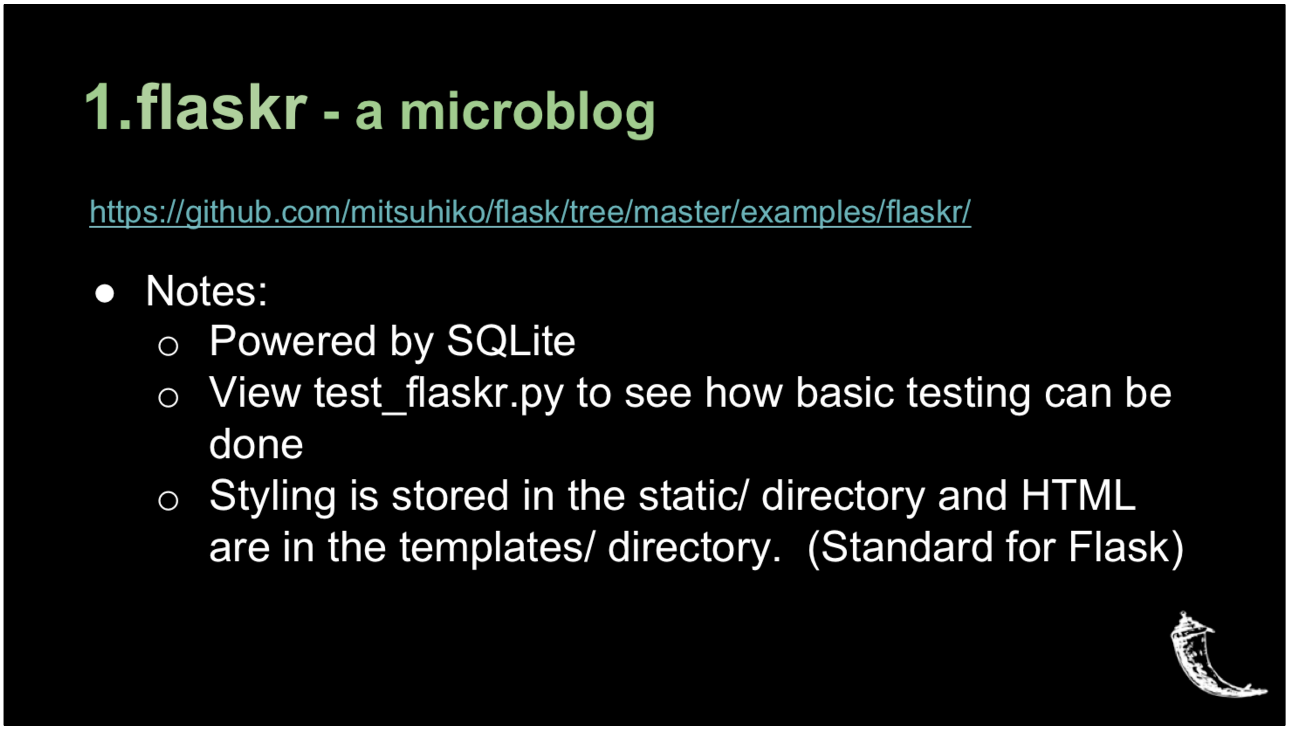
Lines 3-5
Definition of a route, using the app.route decorator. This example registers the function hello() as the handler for the app’s root URL.

Lines 6-7
Python convention. Here, you can also use debugging with “app.run(debug=True)”.

To run: Use python to execute this file (“python fileName.py”) and then use a browser to navigate to http://localhost:5000/

Three Awesome Flask Examples....

These are excellent stripped down Flask app examples provided by the Flask website for self-learning.



1.flaskr - a microblog

https://github.com/mitsuhiko/flask/tree/master/examples/flaskr/

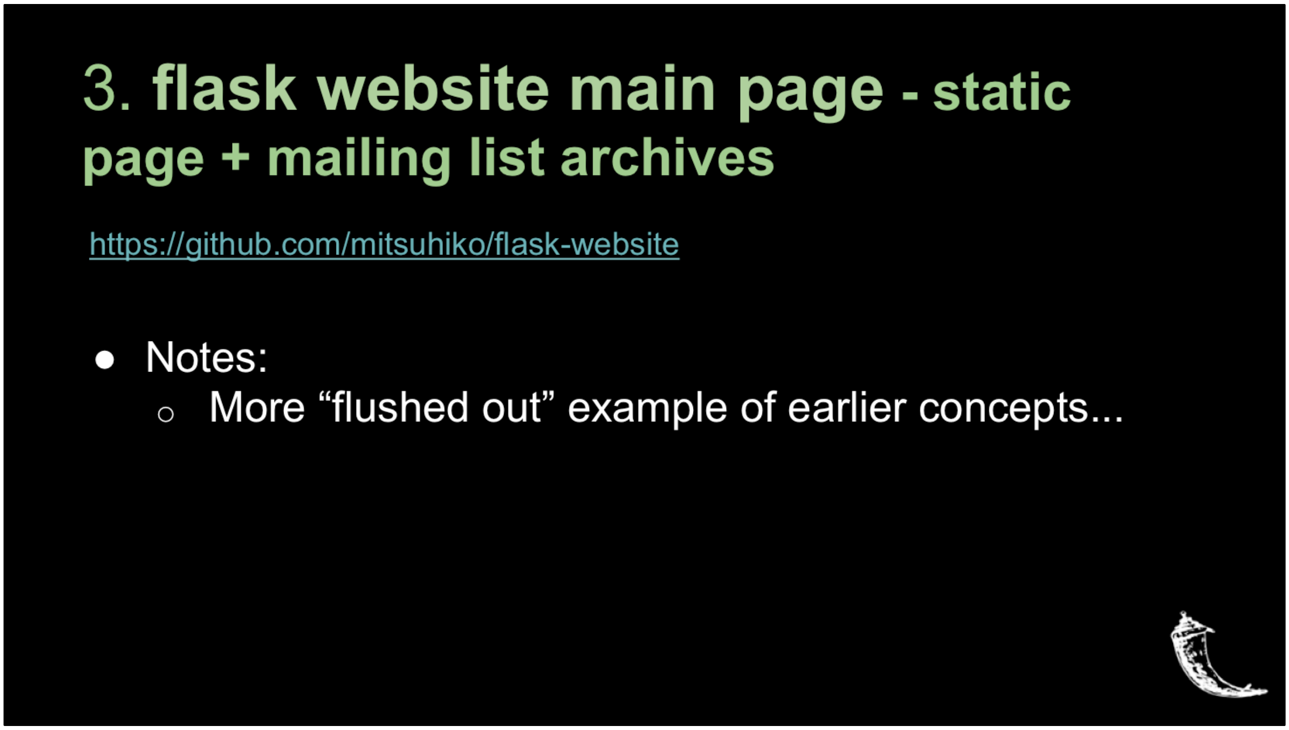
- Notes:
  - Powered by SQLite
  - View test_flaskr.py to see how basic testing can be done
  - Styling is stored in the static/ directory and HTML are in the templates/ directory. (Standard for Flask)

2. **minitwit** - a twitter clone

https://github.com/mitsuhiko/flask/tree/master/examples/minitwit

- Notes:
    - Has example of user authentication method
    - See:

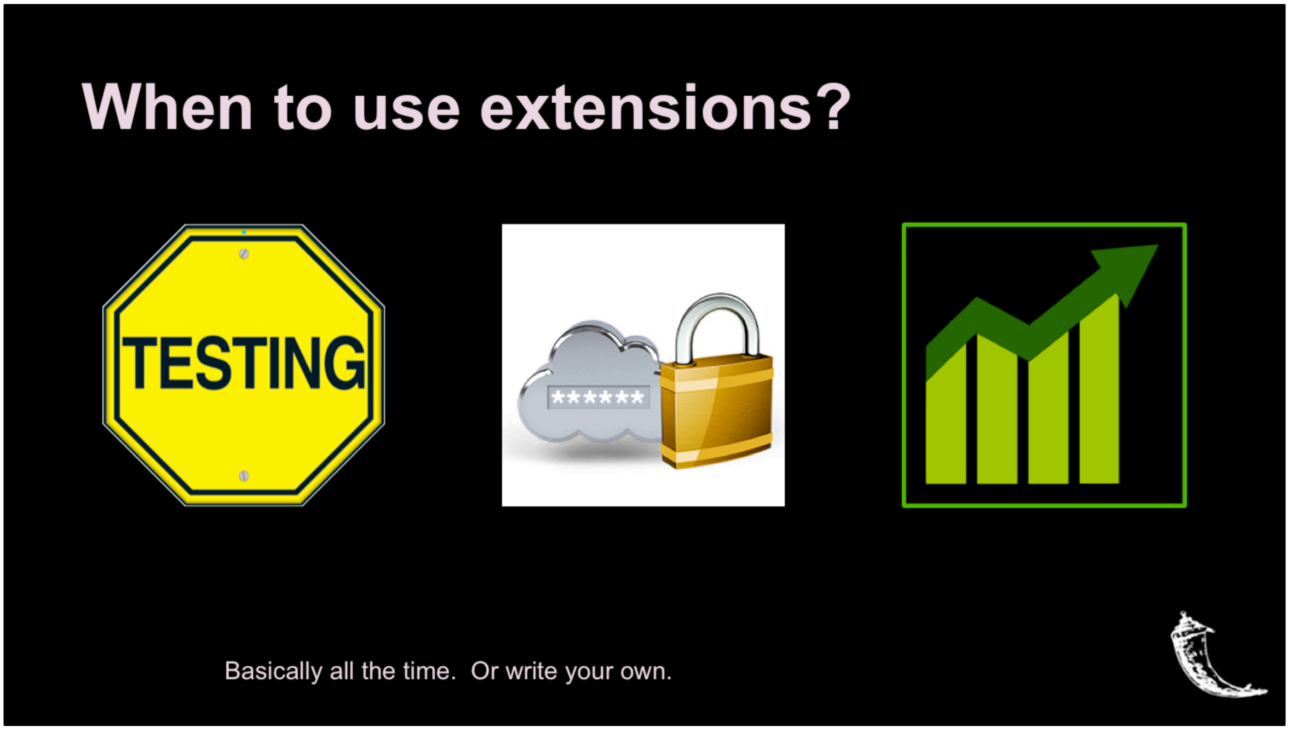
```
@app.route('/login', methods=['GET', 'POST'])
def login():
   """Logs the user in."""
...
```



3. **flask website main page - static page + mailing list archives**

https://github.com/mitsuhiko/flask-website

- Notes:
  - More “flushed out” example of earlier concepts...

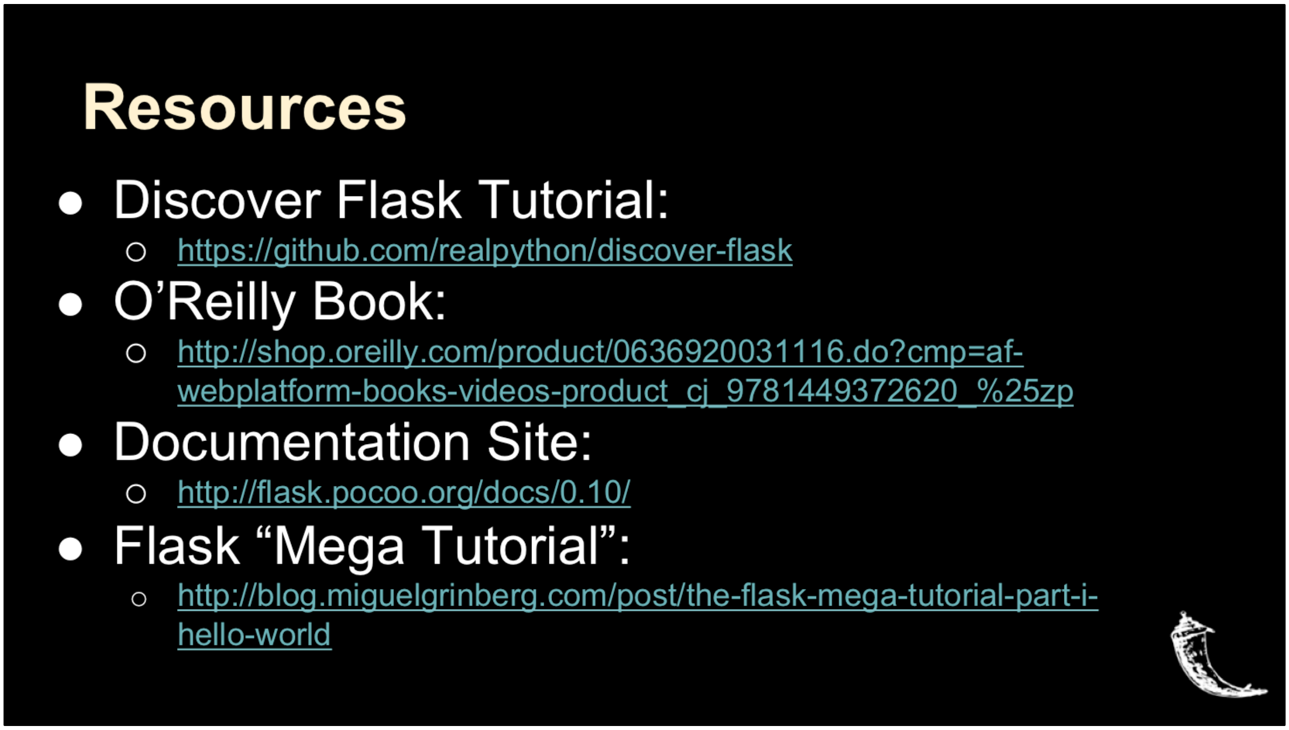


When to use extensions?

Basically all the time. Or write your own.

- Testing
  - Has some native support but is improved with extensions like flask-testing.
- Authentication (see https://stormpath.com/blog/part-one-flask-authentication-problem/)
  - Lack of a good authentication framework
    - Many are discontinued, buggy, non-intuitive, security issues
    - Options: homemade, Flask-Login, Social Media Oath
- Scaling
  - Since a microframework, no native support for DB access, validating web forms, authentication, etc.
  - However, highly extensible and flexible. Just need to do a lot of research when selecting extensions.

Interested in developing Flask extensions? Check out https://www.youtube.com/watch?t=584&v=OXN3wuHUBP0 to see how a LinkedIn employee went about it.



Resources

- Discover Flask Tutorial:
  - https://github.com/realpython/discover-flask
- O’Reilly Book:
  - http://shop.oreilly.com/product/0636920031116.do?cmp=af-webplatform-books-videos-product_cj_9781449372620_%25zp
- Documentation Site:
  - http://flask.pocoo.org/docs/0.10/
- Flask “Mega Tutorial”:
  - http://blog.miguelgrinberg.com/post/the-flask-mega-tutorial-part-i-hello-world