FinTech @ IU Python Session #6 – Web & ML

Prepared by

Cameron Nelson
Fund Equities Lead– FinTech @ IU
https://www.linkedin.com/in/cameron-j-nelson/
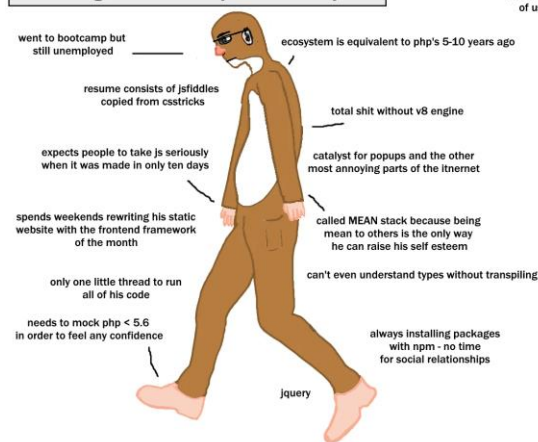
Gabriel Shores
Director of Technology – FinTech @ IU
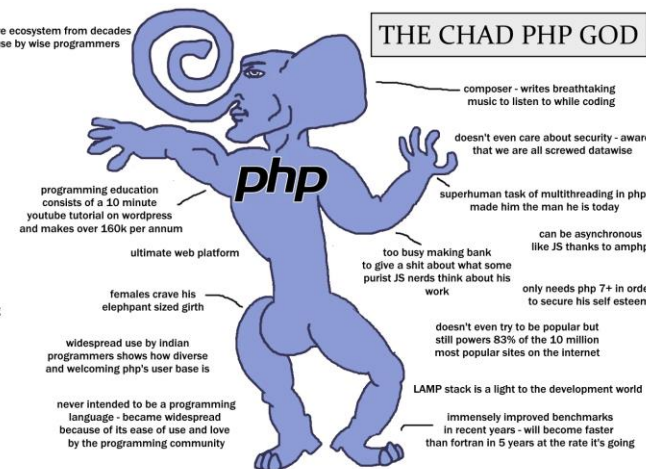https://www.linkedin.com/in/gabriel-shores-379b81291/

Why?

- Web dev: Building your own website is rewarding on its own, but if you ever want to found a startup you are more likely than not to end up writing code that takes some kind of requests from the web, even if it's just an API not truly what we think of as websites

- Machine learning: Should be self-evident enough with the rise of AI, but being better able to harness the power of data leads to better outcomes
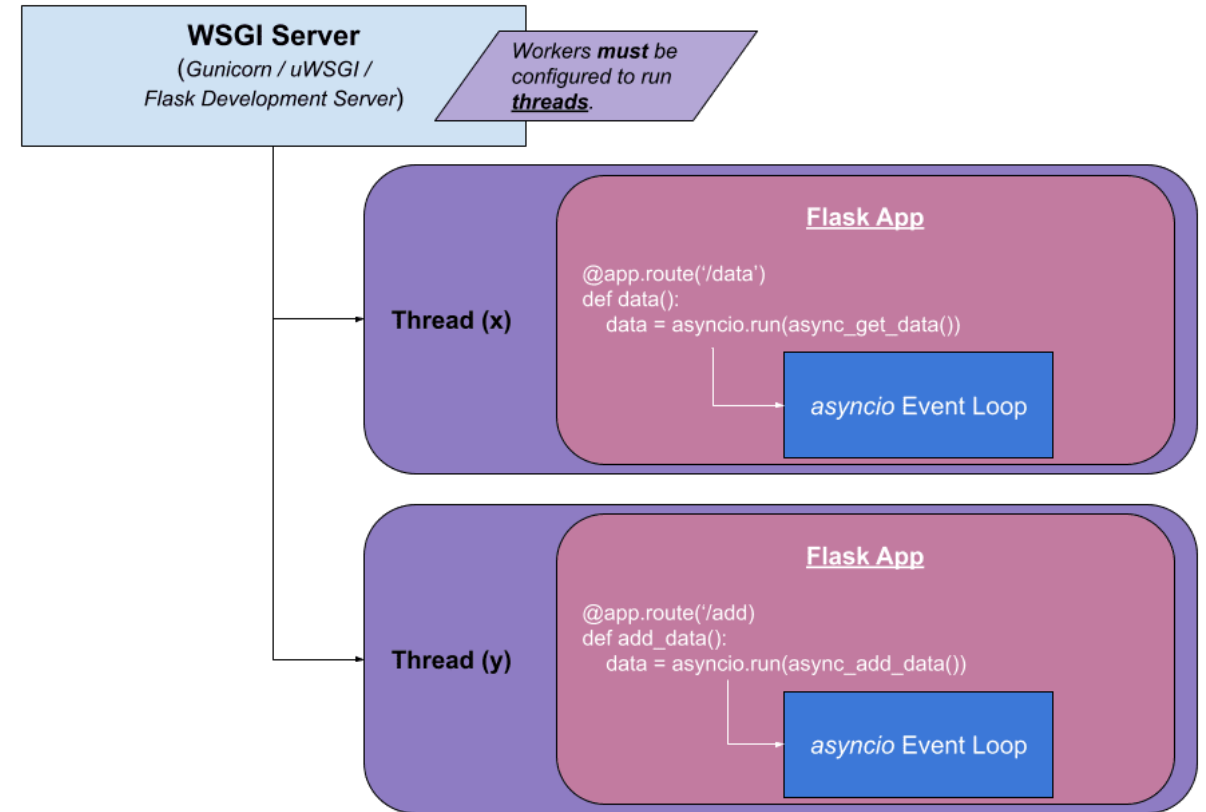
Flask

- Flask is a python library to build webpages

- Supports routing, templating, cookies, GET/POST/PUT requests, redirects, & more

- Easy to get started, but offers a ton of flexibility to the programmer

- Often used with nginx

Some websites that use Flask

Routes

- Routes allow you to tell flask what pages should be available to the web ('/', '/login', etc.)
- Created by putting `@app.route(path, methods=['GET'])` one line above a function that returns the content of a page as a string
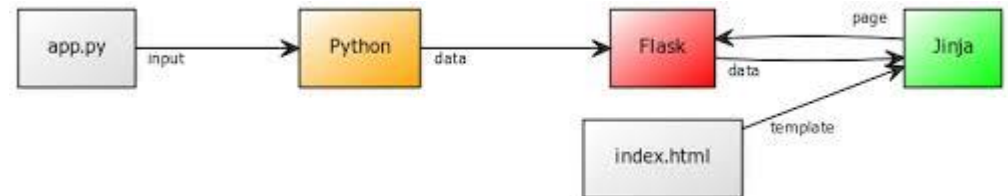
Jinja templating

- Jinja is a library commonly used alongside flask to format HTML pages.

- Instead of using f'strings or concatentating strings to each other, we can use templating to fill changing data to a mostly static webpage more easily

```
<div>
    {% for drink in drinks %}
      {{drink}}
    {% endfor %}
</div>

<div>    {% if drinks_on_sale %} Drinks on sale! {% endif %}

<div>
    Espresso
    Capuccino
    Mocha
</div>
<div>     Drinks on sale!     </div>
```
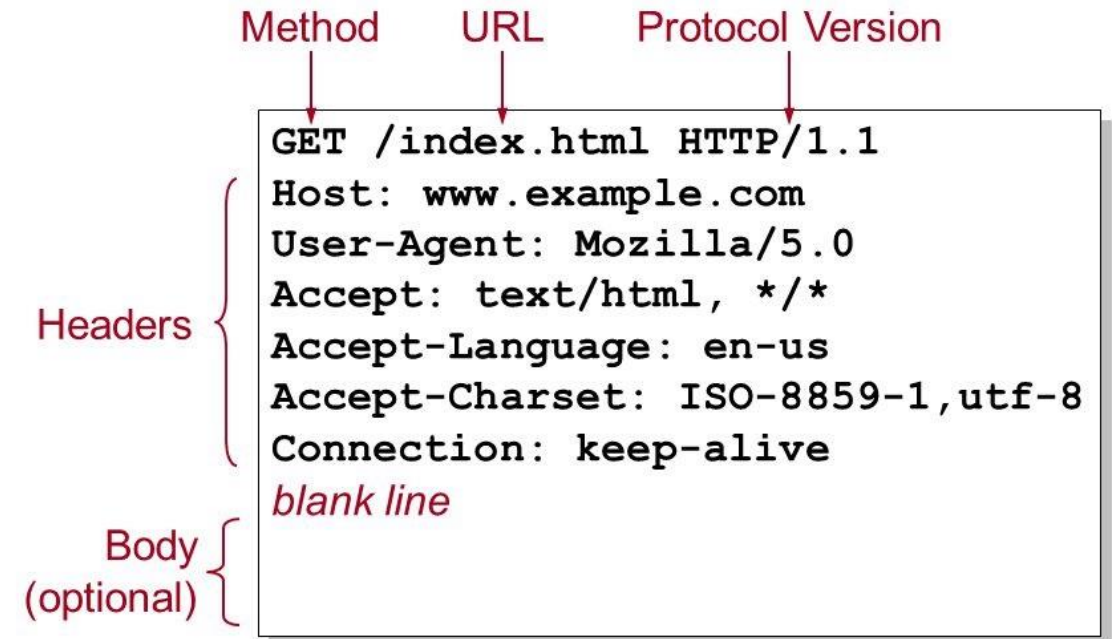
Handling request methods

- GET requests for short parameters & insecure data. Args added to end of url

- `request.args.get('param_name')`

- POST requests are used for larger requests, file upload, & contexts where the data must be secured like login screen where you receive a user's password. Data sent in body of HTTP(s) request

- `request.form.get('param_name')`

HTTP Request

Method   URL   Protocol Version

```
GET /index.html HTTP/1.1
Host: www.example.com
User-Agent: Mozilla/5.0
Accept: text/html, */*
Accept-Language: en-us
Accept-Charset: ISO-8859-1,utf-8
Connection: keep-alive
blank line
```

Headers

Body (optional)

scikit-learn

- A python library for machine learning

- Open source

- Allows you to do classification, regression, clustering, and other types of analysis

- Used by tons of big companies

- https://scikit-learn.org/stable/testimonials/testimonials.html

The End!

- Thank you!