Intermediate Python

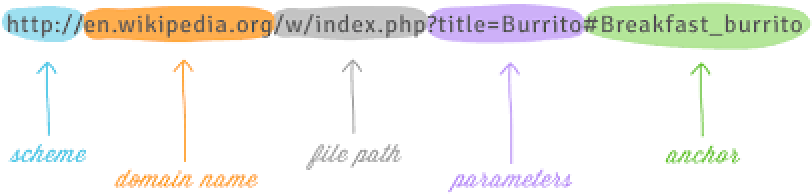
Unit 3: Introduction to Flask

Query Parameters and Request Class In Flask

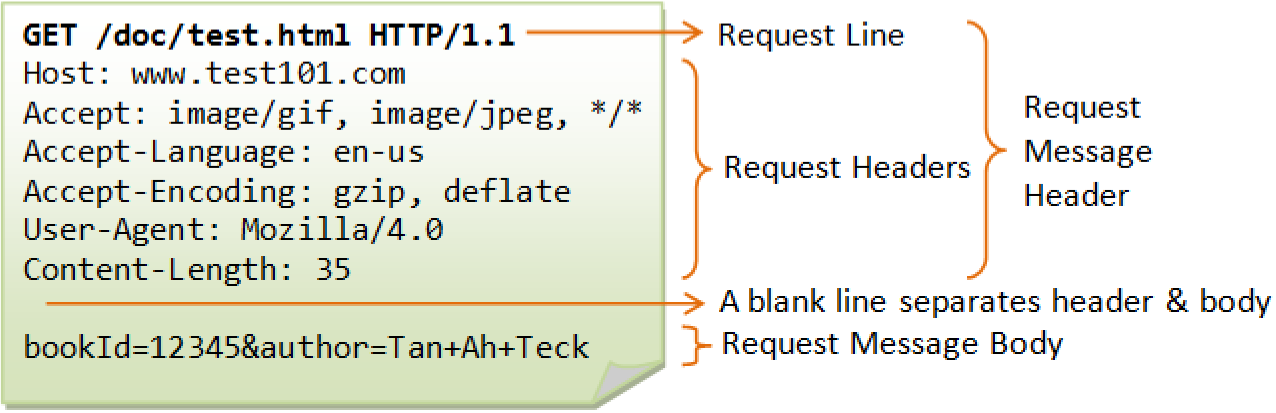
Flask

web development,
one drop at a time

A Quick Review of URL's And Schemes


http://en.wikipedia.org/w/index.php?title=Burrito#Breakfast_burrito
scheme
domain name
file path
parameters
anchor

What Is HTTP/HTTPS?



```
GET /doc/test.html HTTP/1.1
Host: www.test101.com
Accept: image/gif, image/jpeg, */*
Accept-Language: en-us
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0
Content-Length: 35

bookId=12345&author=Tan+Ah+Teck
```

Request Line

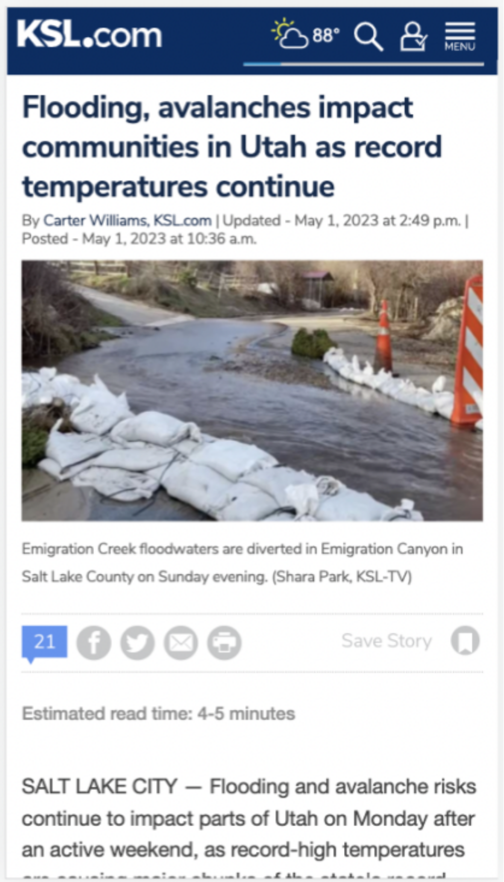
Request Headers

Request Message Header

A blank line separates header & body

Request Message Body

Website Speak In HTTP



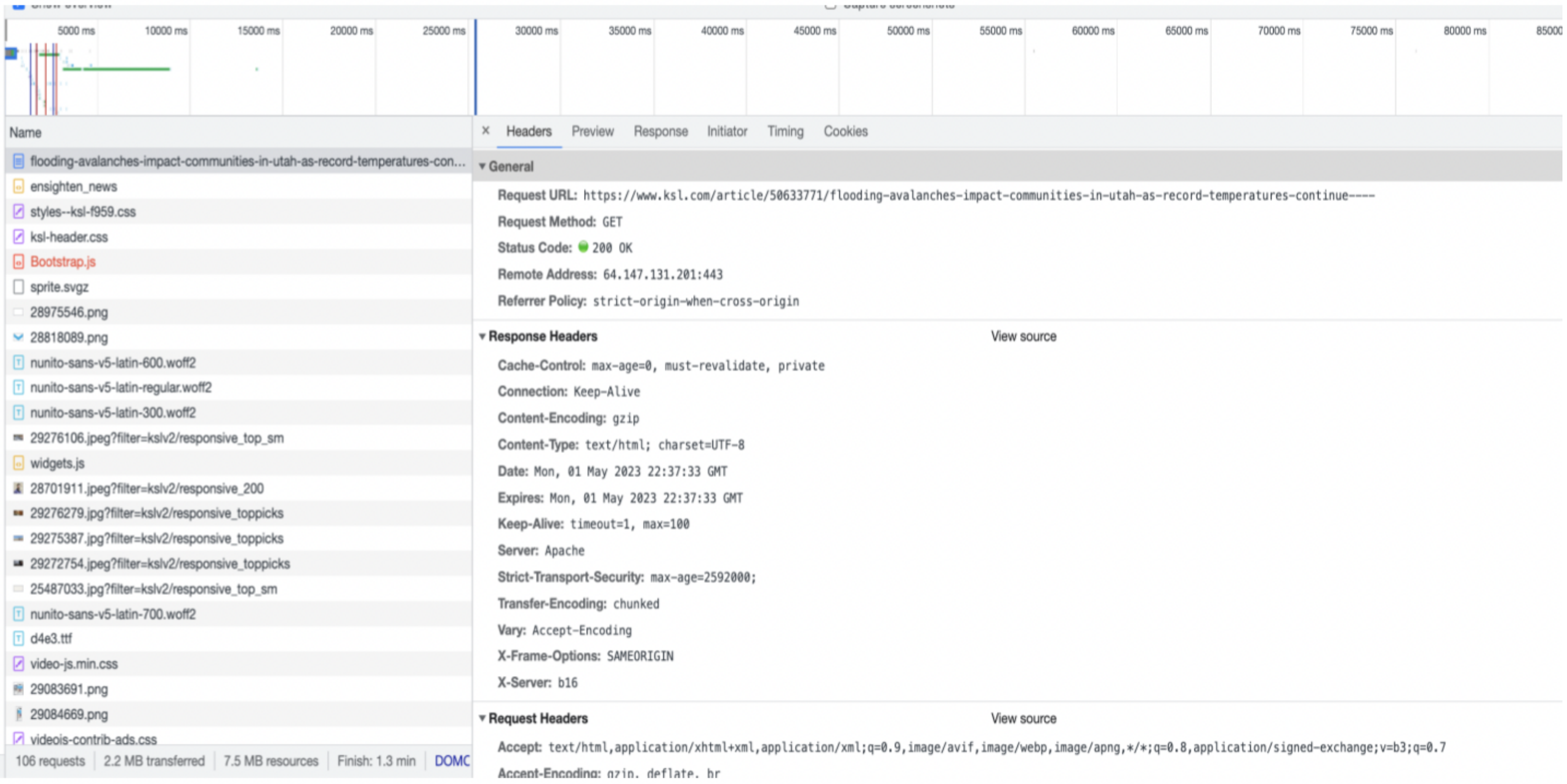
Flooding, avalanches impact communities in Utah as record temperatures continue

By Carter Williams, KSL.com | Updated - May 1, 2023 at 2:49 p.m. | Posted - May 1, 2023 at 10:36 a.m.

Emigration Creek floodwaters are diverted in Emigration Canyon in Salt Lake County on Sunday evening. (Shara Park, KSL-TV)

Estimated read time: 4-5 minutes

SALT LAKE CITY — Flooding and avalanche risks continue to impact parts of Utah on Monday after an active weekend, as record-high temperatures



```
flooding-avalanches-impact-communities-in-utah-as-record-temperatures-con...
ensighten_news
styles--ksl-f959.css
ksl-header.css
Bootstrap.js
sprite.svgz
28975546.png
28818089.png
nunito-sans-v5-latin-600.woff2
nunito-sans-v5-latin-regular.woff2
nunito-sans-v5-latin-300.woff2
29276106.jpeg?filter=kslv2/responsive_top_sm
widgets.js
28701911.jpeg?filter=kslv2/responsive_200
29276279.jpg?filter=kslv2/responsive_toppicks
29275387.jpg?filter=kslv2/responsive_toppicks
29272754.jpeg?filter=kslv2/responsive_toppicks
25487033.jpg?filter=kslv2/responsive_top_sm
nunito-sans-v5-latin-700.woff2
d4e3.ttf
video-js.min.css
29083691.png
29084669.png
videois-contrib-ads.css
106 requests | 2.2 MB transferred | 7.5 MB resources | Finish: 1.3 min | DOMC
```

```
▾ General
  Request URL: https://www.ksl.com/article/50633771/flooding-avalanches-impact-communities-in-utah-as-record-temperatures-continue----
  Request Method: GET
  Status Code: ● 200 OK
  Remote Address: 64.147.131.201:443
  Referrer Policy: strict-origin-when-cross-origin
▾ Response Headers
  Cache-Control: max-age=0, must-revalidate, private
  Connection: Keep-Alive
  Content-Encoding: gzip
  Content-Type: text/html; charset=UTF-8
  Date: Mon, 01 May 2023 22:37:33 GMT
  Expires: Mon, 01 May 2023 22:37:33 GMT
  Keep-Alive: timeout=1, max=100
  Server: Apache
  Strict-Transport-Security: max-age=2592000;
  Transfer-Encoding: chunked
  Vary: Accept-Encoding
  X-Frame-Options: SAMEORIGIN
  X-Server: b16
▾ Request Headers
  Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7
  Accept-Encoding: gzip, deflate, br
```

In Flask, We Access HTTP Requests With The `request` Class

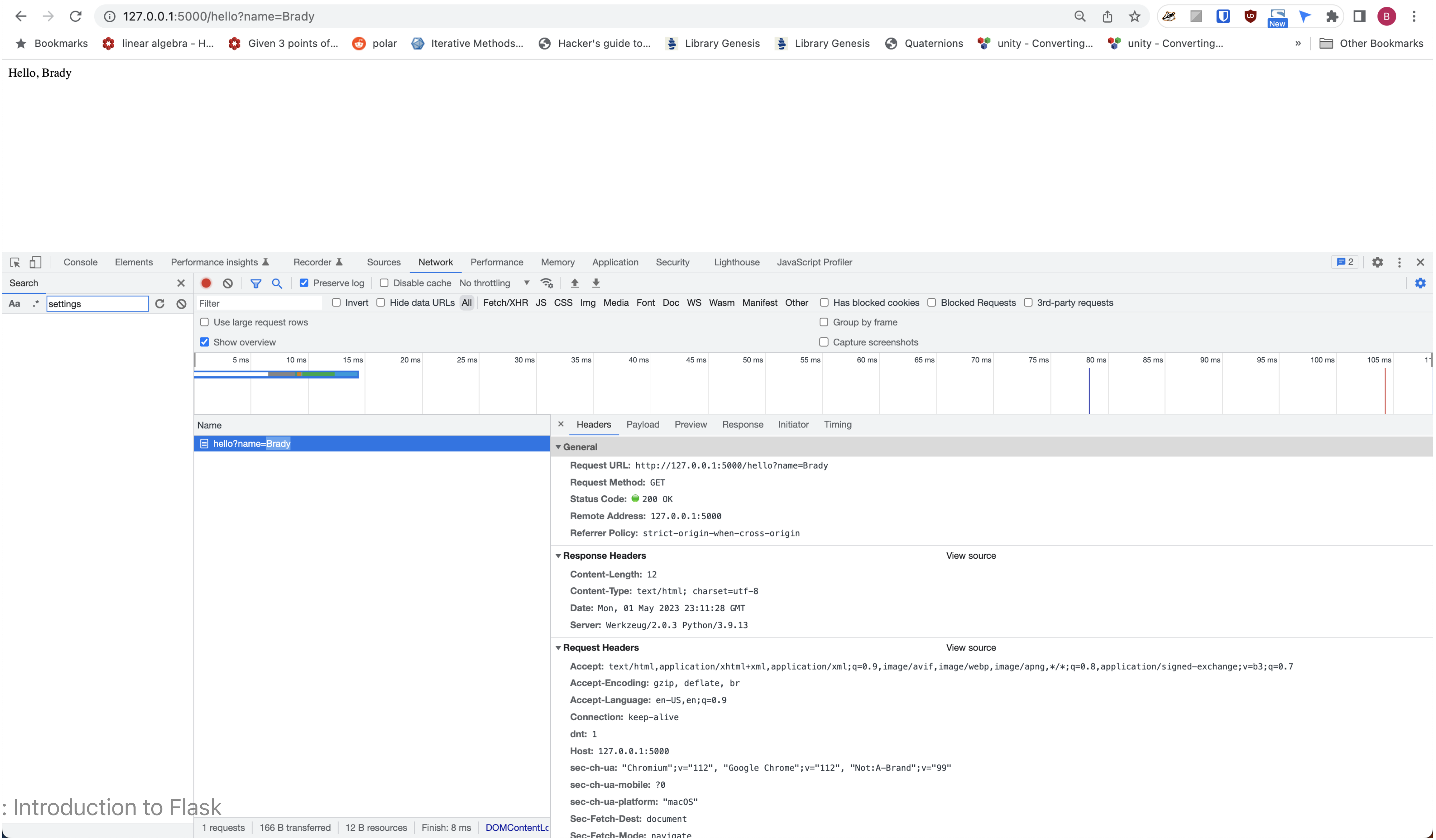
`http://127.0.0.1:5000/hello?name=Brady`

```python
from flask import Flask, request

app = Flask(__name__)

@app.route('/hello')
def hello():
        name = request.args.get('name')
        return "Hello, " + name

app.run()
```

Notice that request.args is a dictionary! Remember those?

```python
my_dictionary = {"name": "Brady"}
```

Request looks like this



127.0.0.1:5000/hello?name=Brady

Hello, Brady

hello?name=Brady

General

```
Request URL: http://127.0.0.1:5000/hello?name=Brady
Request Method: GET
Status Code: 200 OK
Remote Address: 127.0.0.1:5000
Referrer Policy: strict-origin-when-cross-origin
```

Response Headers

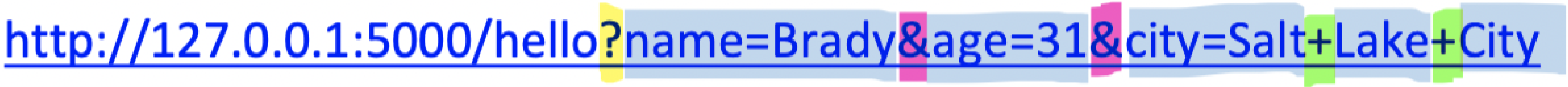
```
Content-Length: 12
Content-Type: text/html; charset=utf-8
Date: Mon, 01 May 2023 23:11:28 GMT
Server: Werkzeug/2.0.3 Python/3.9.13
```

Request Headers

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7
Accept-Encoding: gzip, deflate, br
Accept-Language: en-US,en;q=0.9
Connection: keep-alive
dnt: 1
Host: 127.0.0.1:5000
sec-ch-ua: "Chromium";v="112", "Google Chrome";v="112", "Not:A-Brand";v="99"
sec-ch-ua-mobile: ?0
sec-ch-ua-platform: "macOS"
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
```

1 requests | 166 B transferred | 12 B resources | Finish: 8 ms | DOMContentLo

Working With Multiple Arguments



http://127.0.0.1:5000/hello?name=Brady&age=31&city=Salt+Lake+City

```
from flask import Flask, request

app = Flask(__name__)

@app.route('/hello')
def hello():
        return "Here are all your args:" + str(request.args)

app.run()
```

Looks similar to

```
my_dictionary = {"name": "Brady", "age": 31, "city": "Salt Lake City"}
```

Handling User Input with Query Parameters

```
from flask import Flask, request

app = Flask(__name__)

@app.route('/greet')
def greet():
        name = request.args.get('name')
        if name:
                return "Hello, " + {name}
        else:
                return 'Please enter your name.'

app.run()
```

Query parameters are Often Used to Filter, Sort or Search For Data

```python
from flask import Flask, request

app = Flask(__name__)

# A list of data in JSON format
people = [
    {"name": "Brady", "age": 31},
    {"name": "Marcos", "age": 31},
    {"name": "Nephi", "age": "??"},
]

# A route that filters the data by a 'name' query parameter
@app.route('/people')
def filter_people():
    # Get the 'name' query parameter from the URL
    name = request.args.get('name')

    if name is None:
        return str(people)

    # Filter the data by name, if name is provided, using a loop
    filtered_people = []
    for person in people:
        if person['name'] == name:
            filtered_people.append(person)


    return str(filtered_people)

app.run(debug=True)

# http://localhost:5000/people?name=John
```