CKAN Development

GOVERNMENT DATA CATALOG FOR DEVELOPERS

CKAN Development - Outline

Day 1

- ❑ CKAN Components and Architecture
- ❑ Python and Flask Framework
- ❑ Jinja2 Templates

Day 2

- ❑ CKAN Extensions
- ❑ CKAN Customization

Day 3

- ❑ CKAN Management API
- ❑ CKAN API Customization

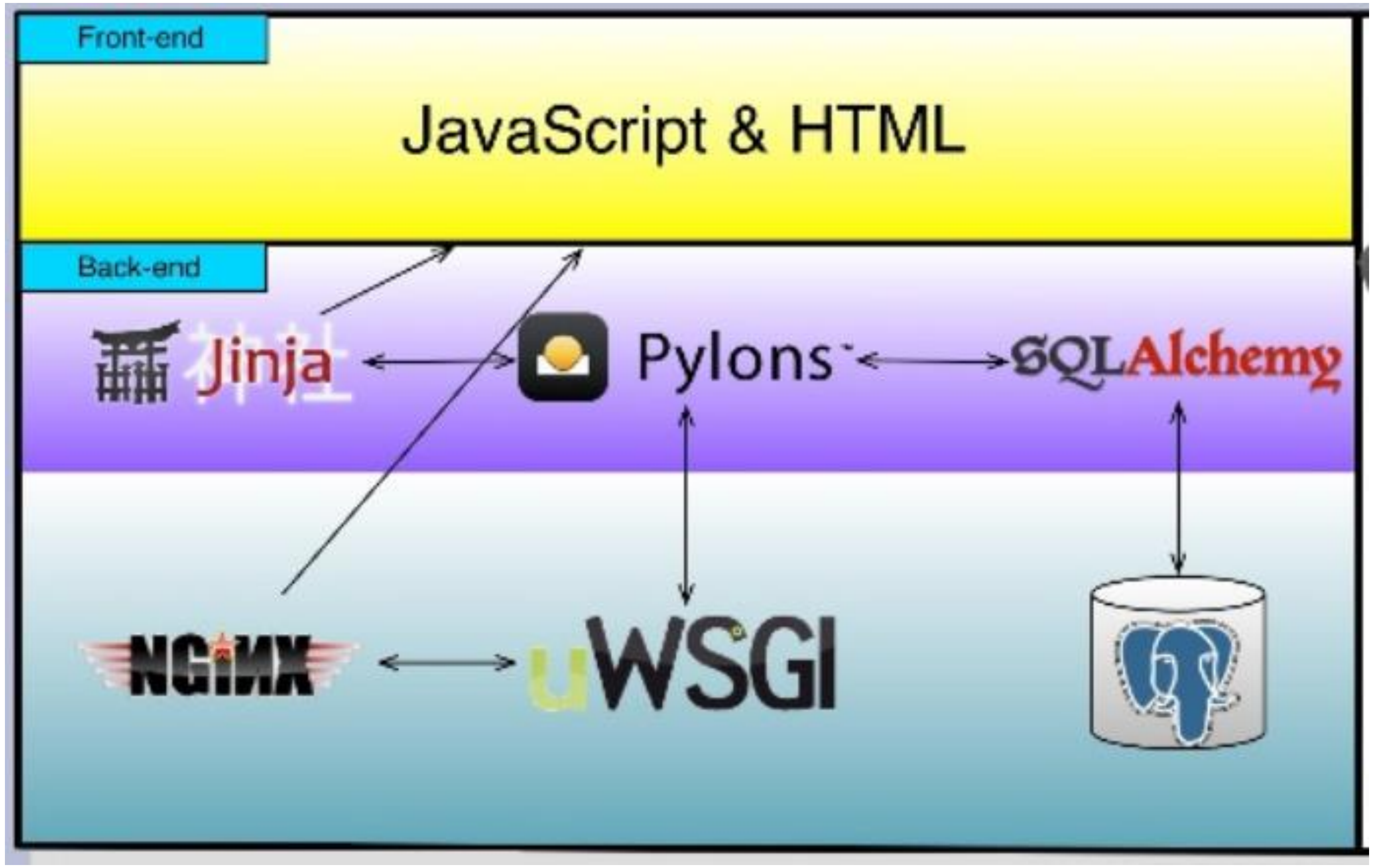
CKAN Components and Architecture

- ❑ CKAN Components
- ❑ Flask Framework
- ❑ MVC vs MVT
- ❑ MVT with Flask
- ❑ Flask Templates
- ❑ CKAN Architecture

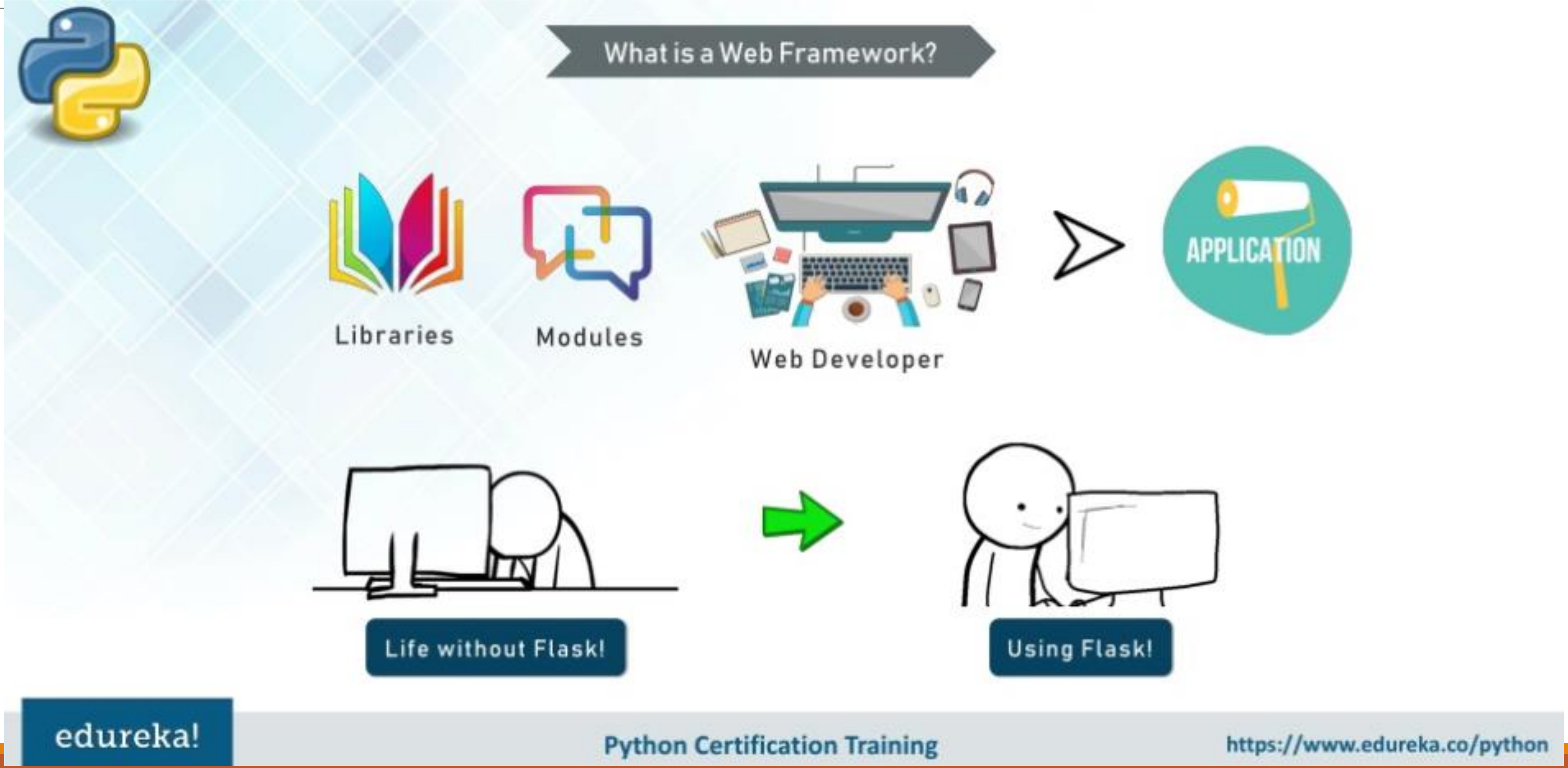
CKAN Components

- Usually sits alongside a CMS (e.g. Drupal or Wordpress)
- WGSI (Web Server Gateway Interface) Application pluggable to Apache (modwsgi), to nginx, etc.
- PostgreSQL database (metadata, datastore, etc.)
- Apache Solr (for indexing and searching)
- Other components (depending on the installed and in-use extensions)

CKAN Components



Python Web Framework



What is a Web Framework?

Life without Flask!

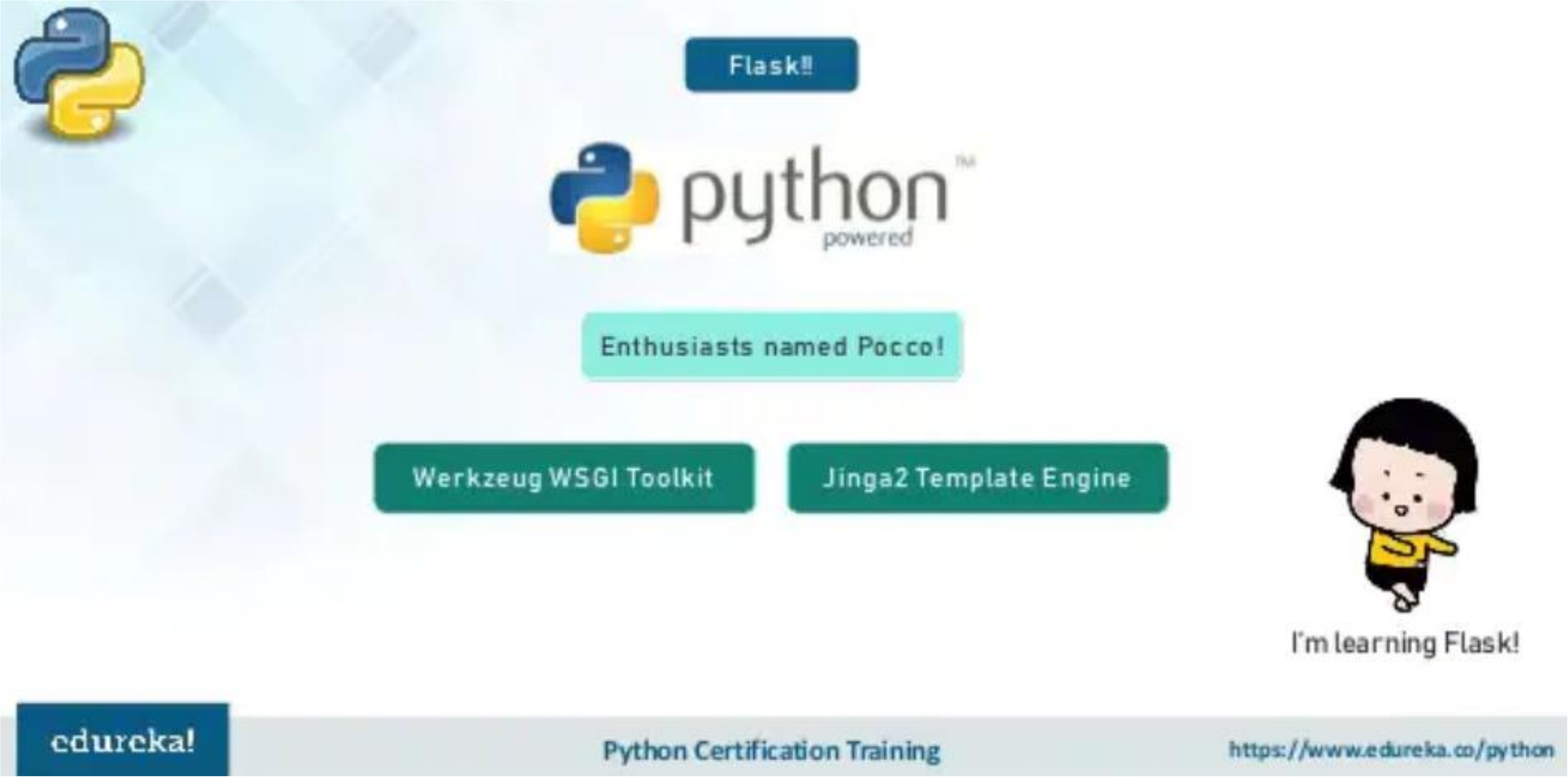
Using Flask!

edureka!

Python Certification Training

https://www.edureka.co/python

Flask Framework



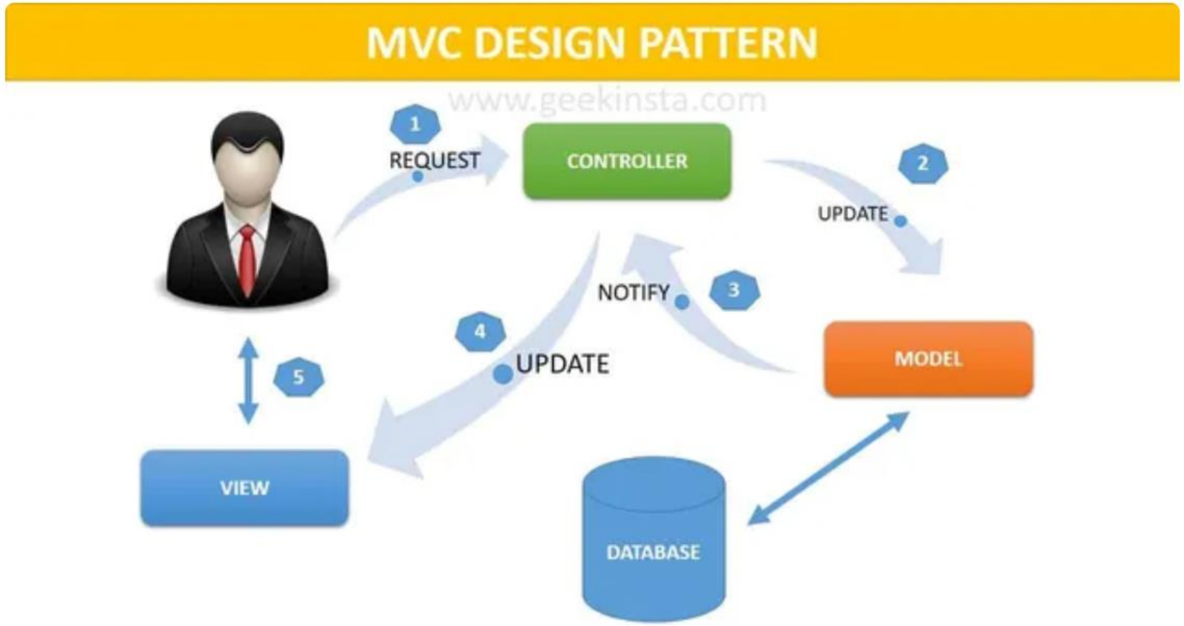
Flask‼

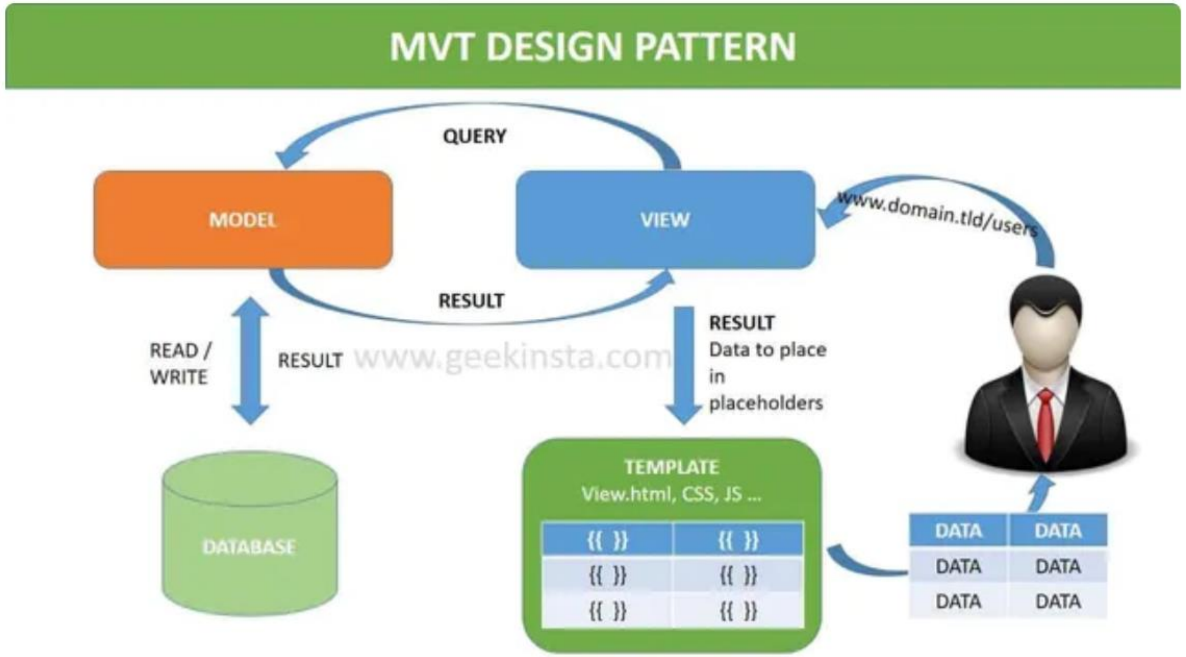
Enthusiasts named Pocco!

Werkzeug WSGI Toolkit

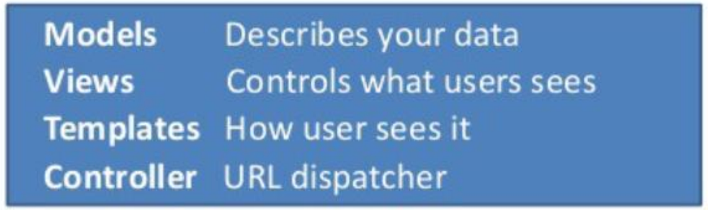
Jinga2 Template Engine

MVC vs MVT



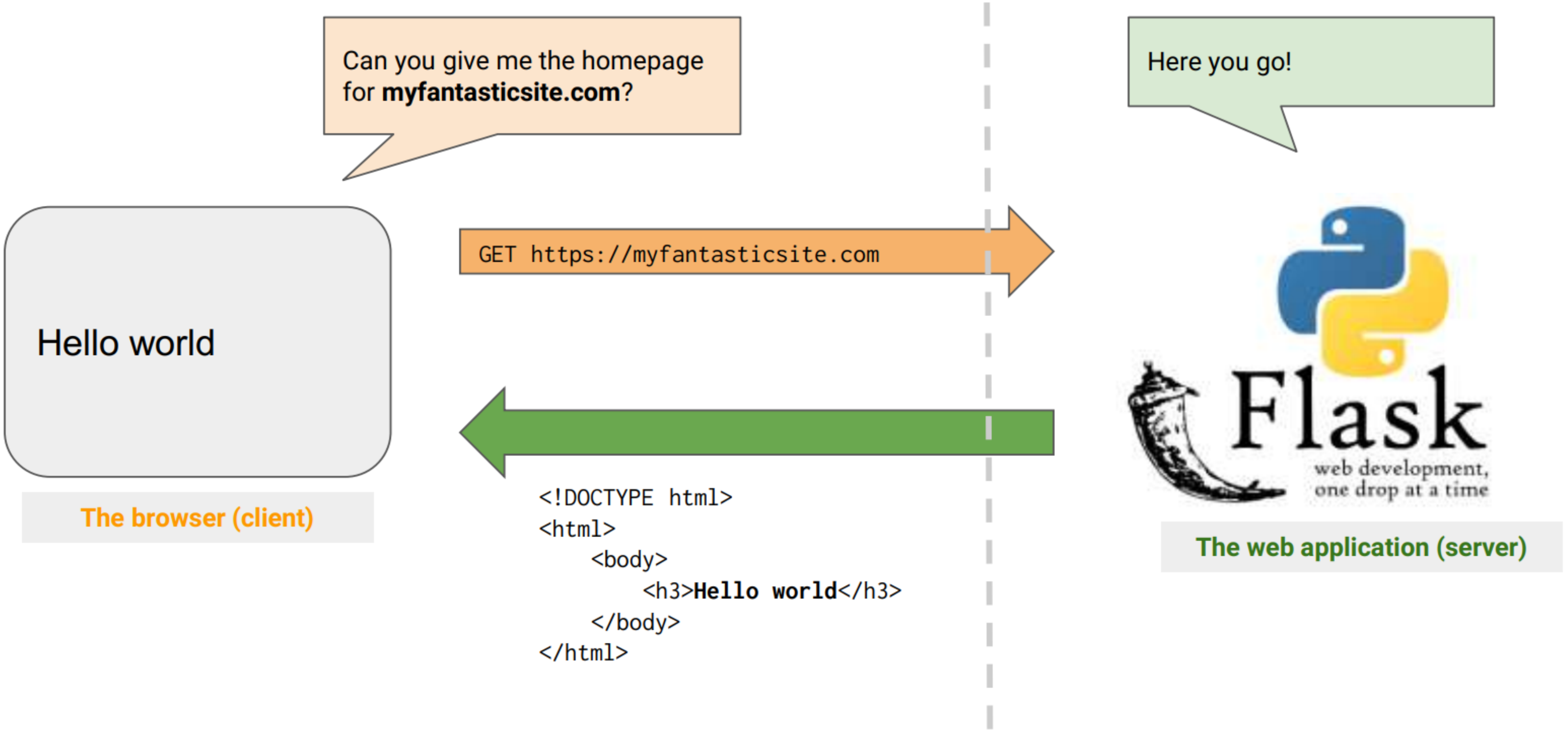


Model	⟷	Model
Template	⟷	View
View	⟷	Controller



Models	Describes your data
Views	Controls what users sees
Templates	How user sees it
Controller	URL dispatcher

MVT with Flask



Can you give me the homepage for **myfantasticsite.com**?

Here you go!

Hello world

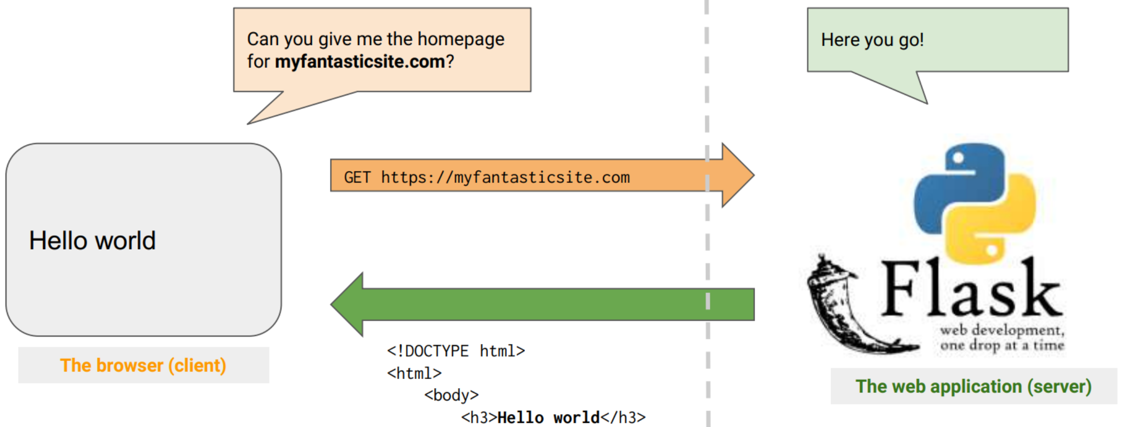
`GET https://myfantasticsite.com`

The browser (client)

The web application (server)

```
<!DOCTYPE html>
<html>
    <body>
        <h3>Hello world</h3>
    </body>
</html>
```

MVT with Flask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Here you go!
Hello world
GET https://myfantasticsite.com
Flask
web development, one drop at a time
The browser (client)
The web application (server)

```
<!DOCTYPE html>
<html>
    <body>
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    </body>
</html>
```
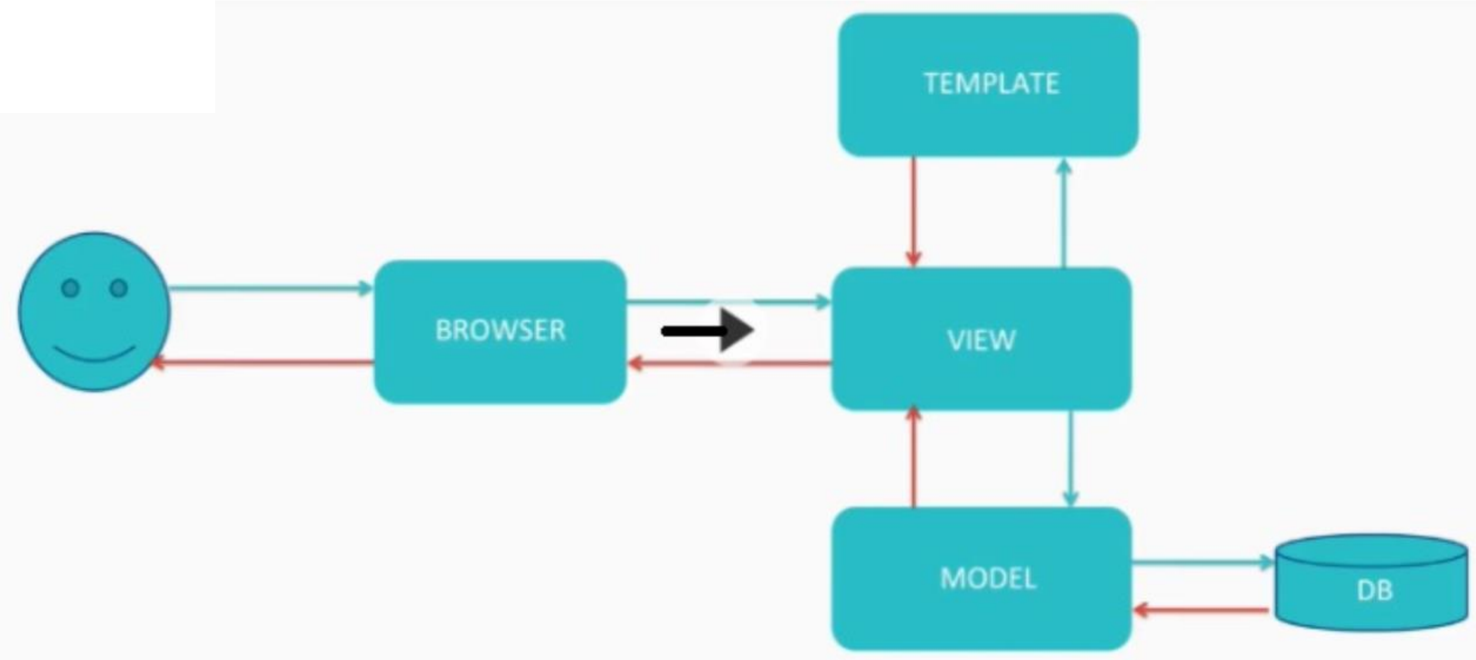
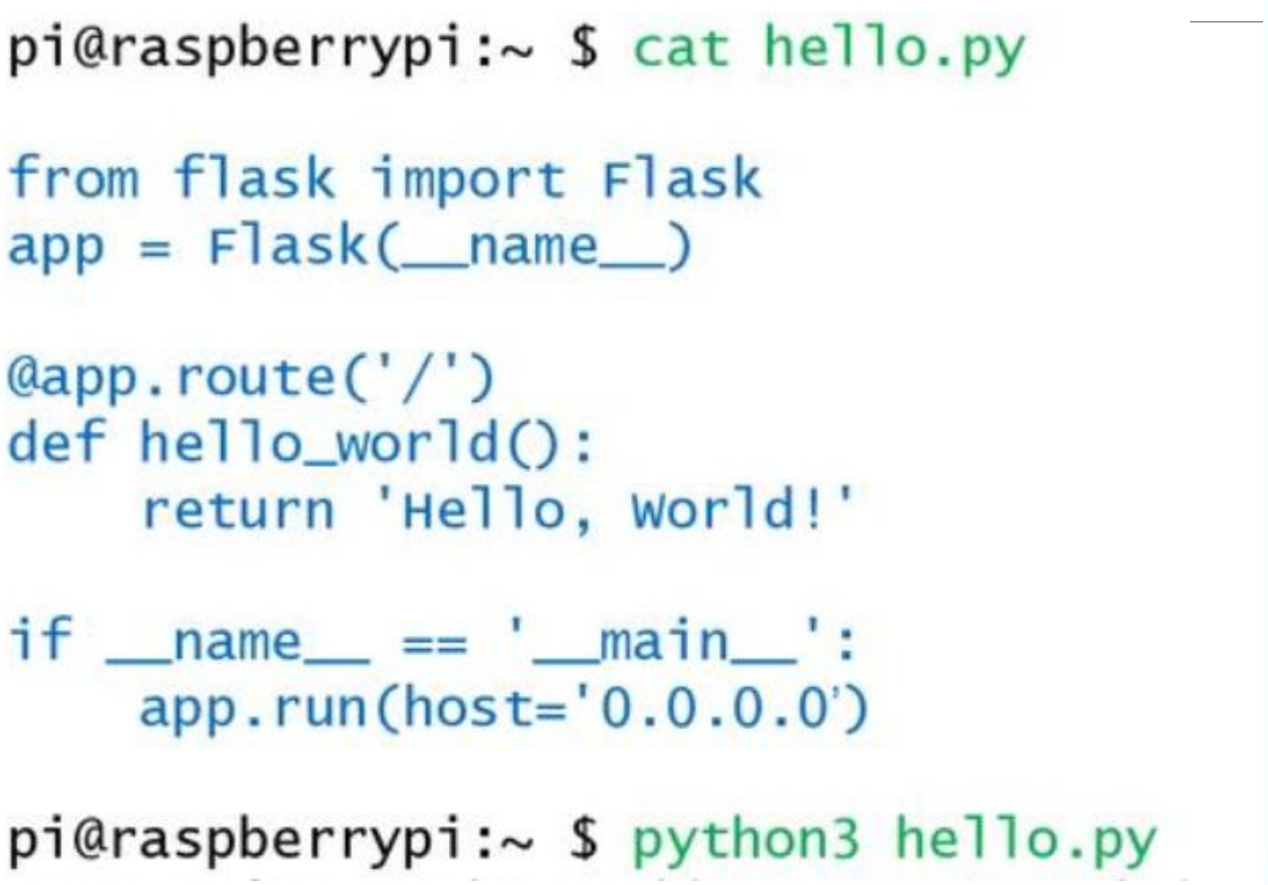
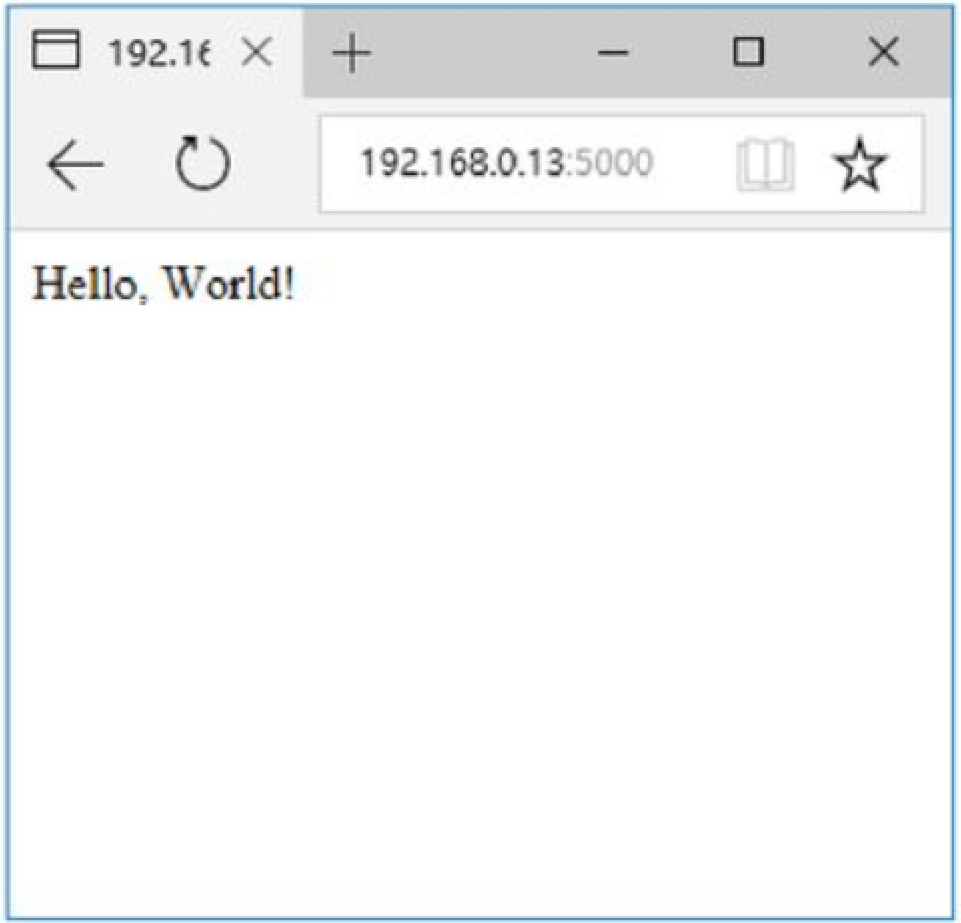



Flask – Minimal Application



```
pi@raspberrypi:~ $ cat hello.py

from flask import Flask
app = Flask(__name__)

@app.route('/')
def hello_world():
    return 'Hello, World!'

if __name__ == '__main__':
    app.run(host='0.0.0.0')

pi@raspberrypi:~ $ python3 hello.py
```

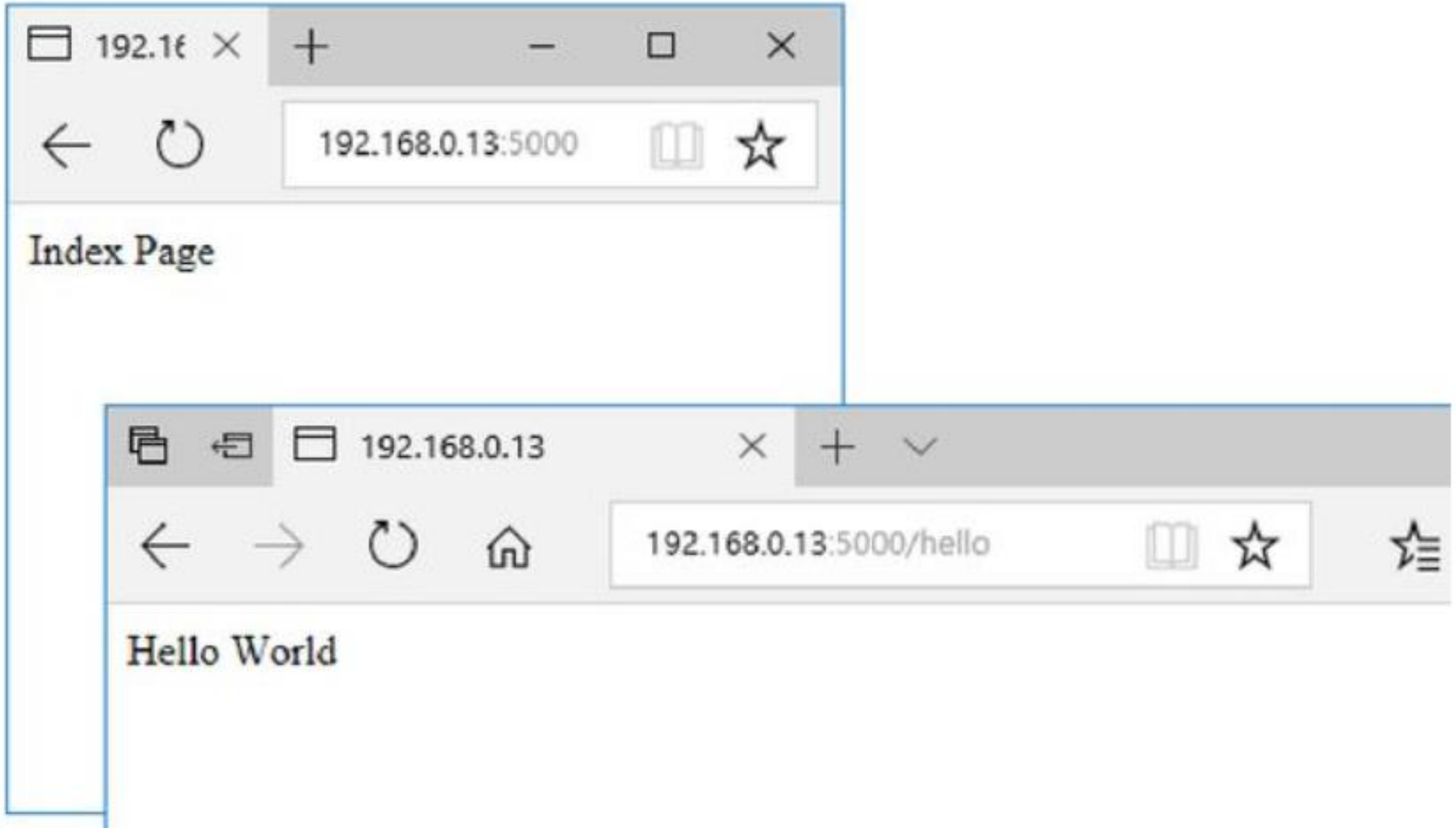


Hello, World!

Flask – Minimal Application

- route() decorator is used to bind a function to a URL

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

@app.route('/')
def index():
    return 'Index Page'


@app.route('/hello')
def hello():
    return 'Hello World'


if __name__ == '__main__':
    app.run(host='0.0.0.0')
```



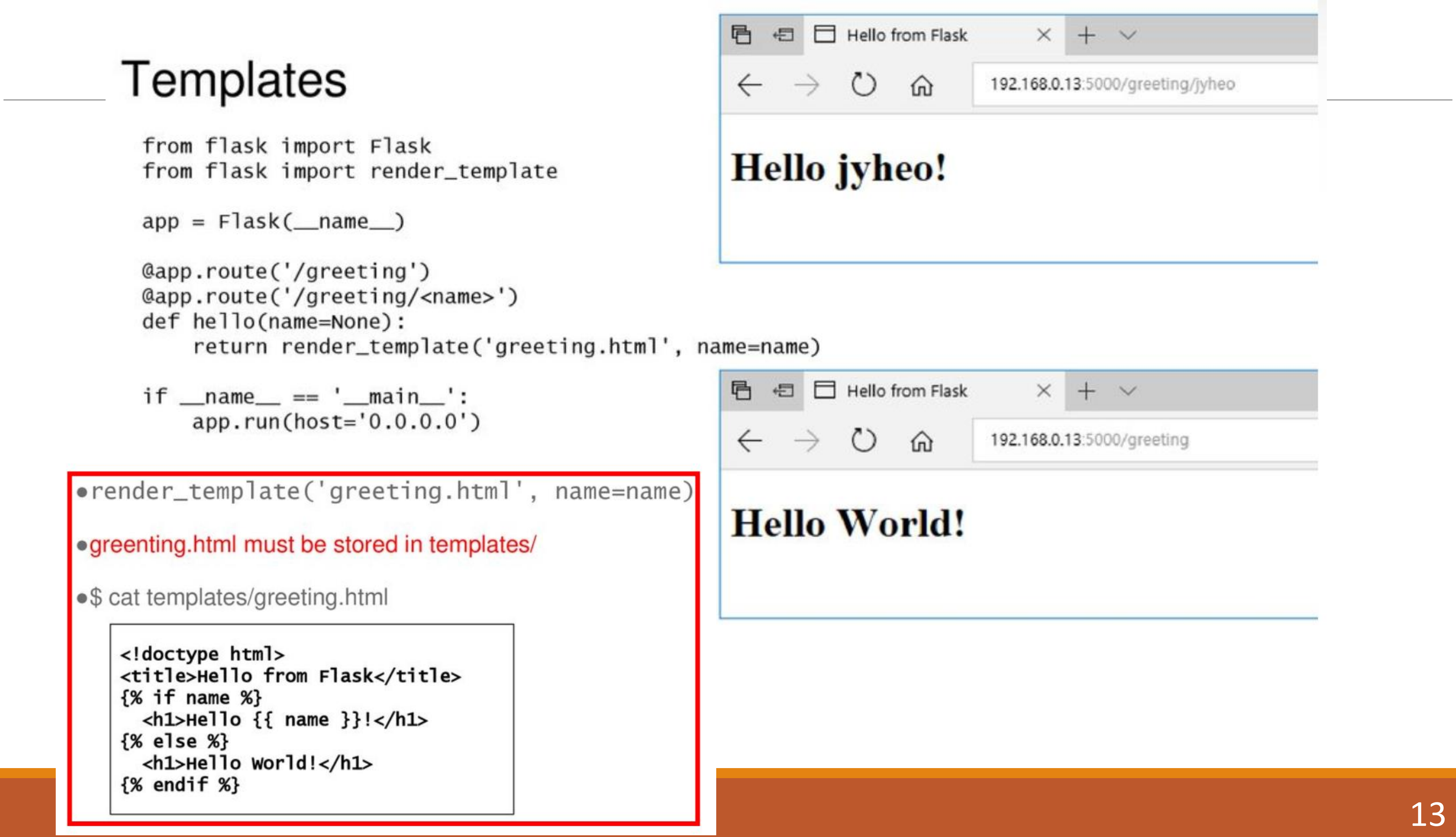
192.168.0.13:5000

Index Page

192.168.0.13:5000/hello

Hello World

Flask Templates



Templates

```
from flask import Flask
from flask import render_template

app = Flask(__name__)

@app.route('/greeting')
@app.route('/greeting/<name>')
def hello(name=None):
    return render_template('greeting.html', name=name)

if __name__ == '__main__':
    app.run(host='0.0.0.0')
```

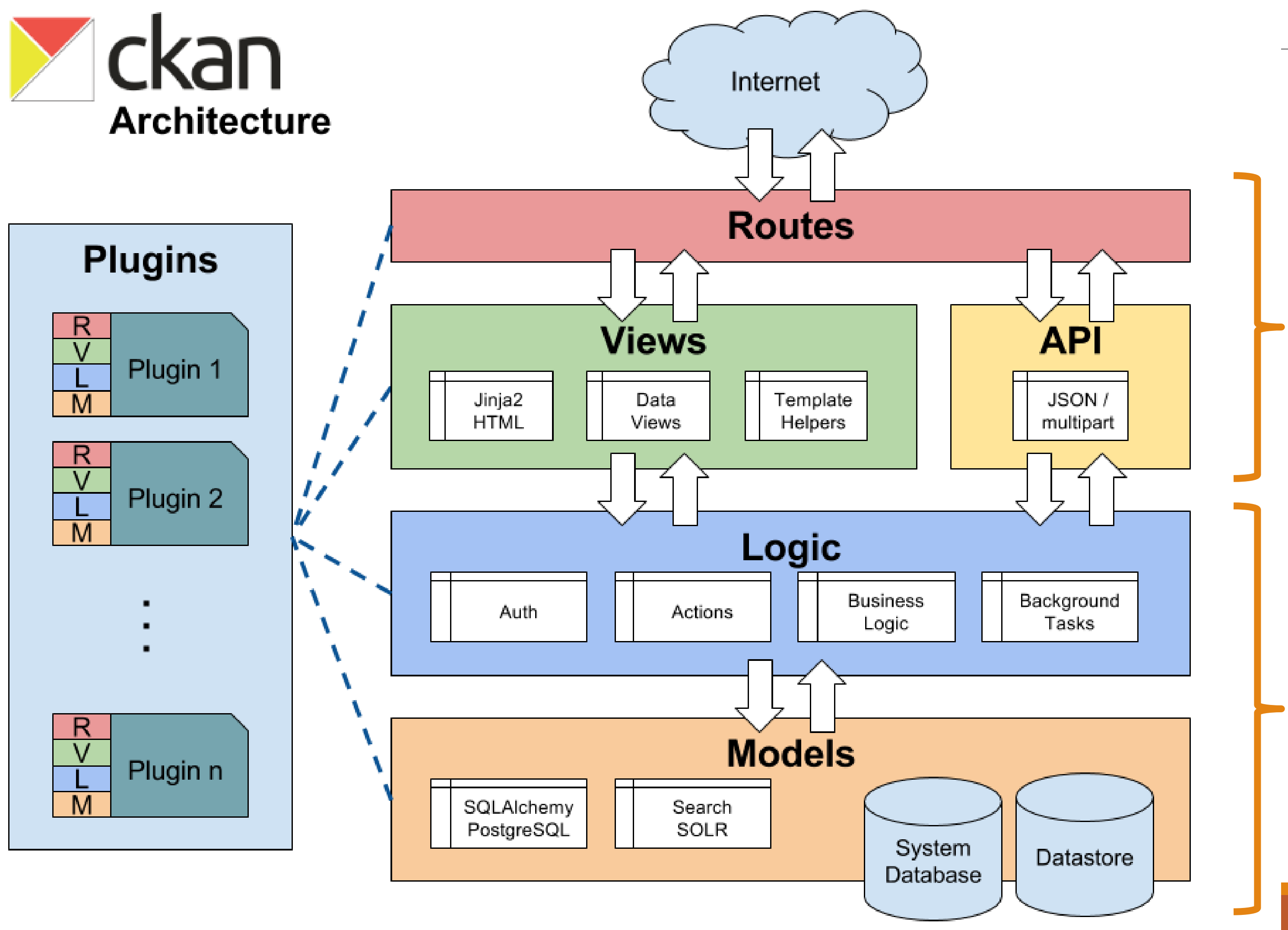
Hello jyheo!

Hello World!

- `render_template('greeting.html', name=name)`
- greenting.html must be stored in templates/
- $ cat templates/greeting.html

```
<!doctype html>
<title>Hello from Flask</title>
{% if name %}
  <h1>Hello {{ name }}!</h1>
{% else %}
  <h1>Hello World!</h1>
{% endif %}
```

CKAN Architecture



Flask Framework

Python & CKAN Libs