

Introduction to Flask

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Overview

- Welcome
- Flask
- Getting the code
- Python virtual environments
- Example web applications
 - Hello World!
 - Simple example with template
 - Less simple example: Team Accolade
- Flask extensions

Flask

- Web framework written in Python
- “micro” framework
 - **Jinja2** for templates
 - **Werkzeug** for WSGI
- Easy to get started
- Add extensions as needed

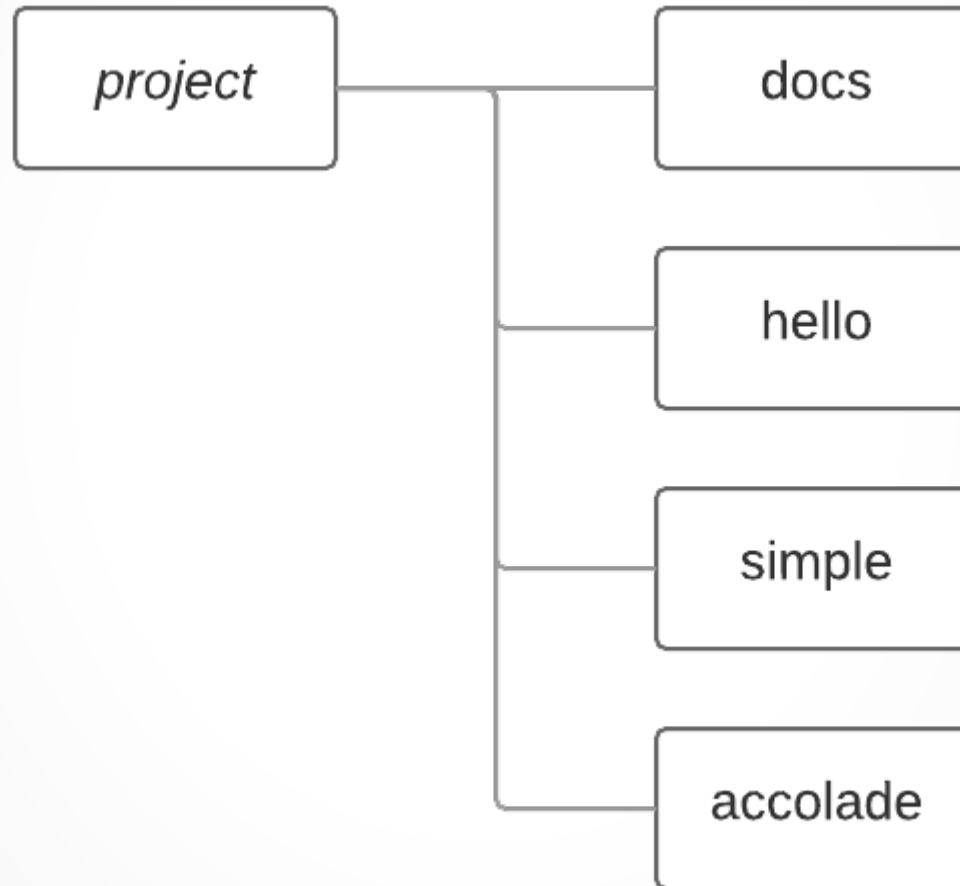
Getting the Code

- Install Python from <https://www.python.org/>
- Install `pip` (maybe included with Python)
- Install `virtualenv`

```
pip install virtualenv
```

- Create a directory and unzip the files
 - We'll call this the *project* directory
- Use an editor that supports “soft tabs”

Directory Structure



Python Virtual Environments

- A virtual environment has its own installation directory for packages
- Separate from other Python virtual environments
- Avoids dependancy hell
- Can be located anywhere; does not have to be with application code
- Create with the command

```
virtualenv ENV
```

Create the Virtual Environment

- In the project directory, create a virtual environment called *venv*

```
virtualenv venv
```

- Activate the environment

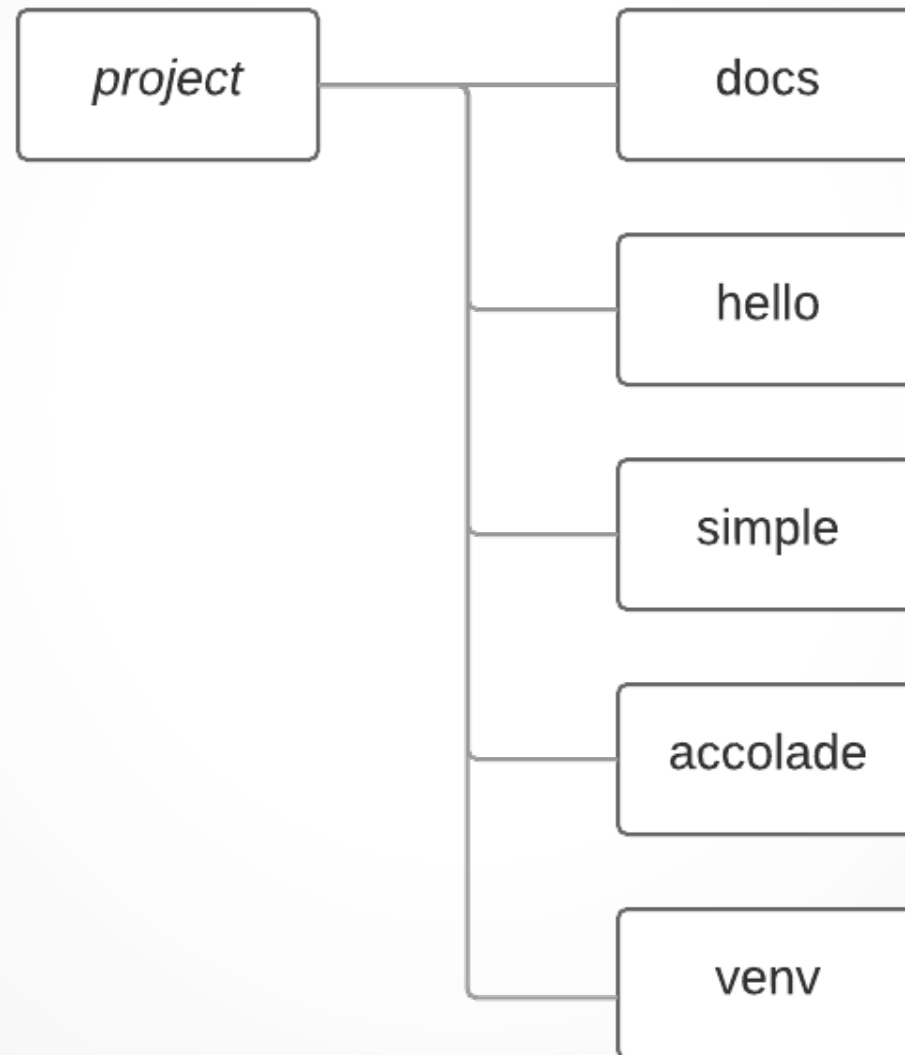
```
source venv/bin/activate (Linux)
```

```
venv/Scripts/activate (Windows)
```

- Observe your prompt
- You can deactivate the virtual environment

```
deactivate
```

Directory Structure



Install Flask

- With the virtual environment activated:

```
pip install Flask
```

Hello World!

- Make `hello` the current directory
- Execute the command

```
python hello.py
```

- The application listens on localhost:5000
- `app.route()` decorator
- See results in browser

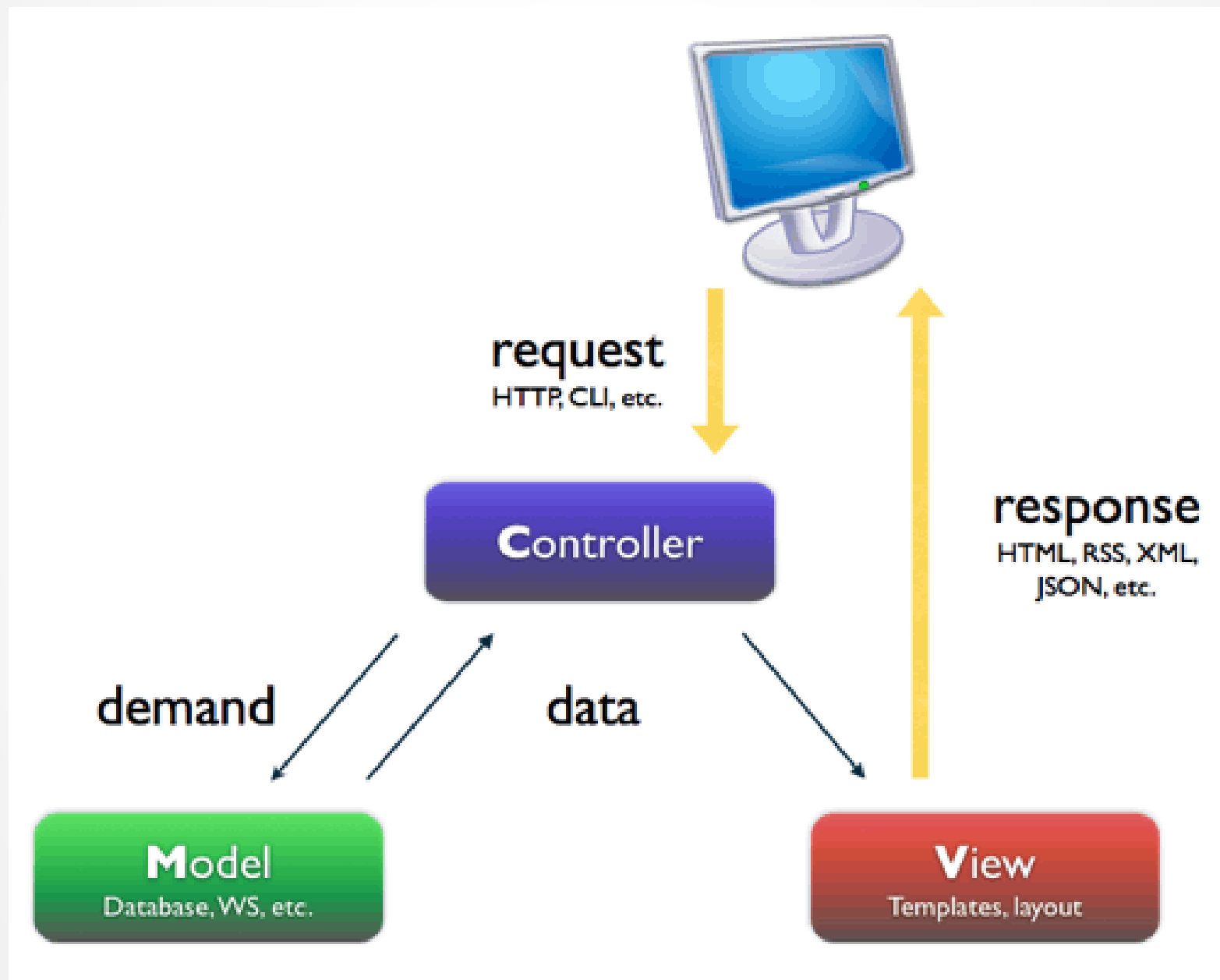
Simple Example

- Make `simple` the current directory
- Execute the command

```
python webapp.py
```

- `app.debug = True`
- `render_template()`

Model – View - Controller



Flask-SQLAlchemy

- SQLAlchemy is an object-relational mapping (ORM) toolkit
- Flask-SQLAlchemy is a Flask extension which provides support for SQLAlchemy
- Install with
 - `pip install flask-sqlalchemy`

Team Accolade

- Make `accolade` the current directory
- Execute the command

```
python webapp.py
```

- Twitter Bootstrap
- Config file
- `url_for()`
- SQLAlchemy model
- Sqlite database for development

Flask Extensions

- **Flask-WTF** for form handling
- **Flask-Login**, **Flask-Security**
- **Flask-Admin**
- ...
- You don't need Flask extensions
- Why not Django?

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