

Django Quickstart

For this class, many of the homework assignments will concern creating and editing Django applications. Django (<https://www.djangoproject.com/>) is a popular web framework written in Python.

Installation

1. Install Python 3 if you haven't done so already. (Go to <https://python.org> for downloads.)
 - If running on a Mac, do not uninstall Apple's Python 2.7. The OS depends on it. Python 3 can co-exist. Just install and then use the `python3` command (instead of just `python`).
2. Create a virtual environment:
 - Choose a location in which to create the virtual environment. I call it "my_env", though many people call it "venv". If you put it anywhere in your repo, be sure to put the name of the virtual environment directory into your `.gitignore`.

```
python3 -m venv my_env
```

3. Activate your virtual environment:
 - On MAC/Unix:
`source my_env/bin/activate`
 - On Windows:
`my_env\Scripts\activate.bat`

Creating a virtual environment is optional, but it nice because it simplifies package installation by reducing conflicts with other software you have on your laptop. For documentation on virtual environments see:

<https://docs.python.org/3/library/venv.html>

4. Install Django
 - Upgrade pip to the most current version:
`pip install -U pip`

If you do not run in a virtual environment you may need to use the `python3` and `pip3` commands instead of `python` and `pip`. Also on Mac, you may need to prefix the `pip` command with `sudo`.

- Then install Django
`pip install django`

The current version is 3.1, but 3.0 should work, too.

5. Outside of your class repository, clone one of the class examples and try to run it:

```
git clone https://github.com/cmu-webapps/django-intro.git
cd django-intro
python manage.py migrate
python manage.py runserver
```

6. Visit `http://localhost:8000` and verify that the application is working.

Some systems require
`http://127.0.0.1:8000`

Creating a Django Project

Create a new Django project for Homework #3:


1. Connect to the directory in your class repository for Homework #3:

```
cd hw3
```

2. Using the command prompt to create the project directory:

```
django-admin.py startproject webapps .
```

The “.” at the end of the line above causes the project to be created in the current directory.



Notice the dot

Creating a Django Application

Create the calculator application in your project:

1. Run the following Django command to create a new application:

```
python manage.py startapp calculator
```

2. Even though you're storing no data in the database, you'll need to create a database for some of Django's internal state with the following command:

```
python manage.py migrate
```

3. Configure the project using `webapps/settings.py`

- Add 'calculator' to the list of `INSTALLED_APPS`

4. Configure URL routes using `urls.py` file(s)

5. Create your templated views in `calculator/templates/calculator`

6. Put your static files in `calculator/static/calculator`

7. Create your actions in `calculator/views.py`

8. Test your solution (and fix the bugs :-)

```
python manage.py runserver
```

Deactivating your Virtual Environment

You may simply close your shell, but you can also run the “deactivate” command to leave the virtual environment.

Additional resources

See the class examples and the <http://djangoproject.com> website.