Yufan Xu

Exercise 2.1: Getting Started with Django

❖ 2. Write two to three sentences on why Django is so popular among web developers.

➢ Django comes with a lot of the essential tools and features pre-installed, so it takes the load off the developer and allows for fast development. Django's MVT architecture also allows for scalability, fast prototyping, and fast processing speeds. Its predefined workflow provides developers the basic framework for an application (that includes both a backend and frontend) to be up and running, so the developer has more time to focus on the user experience.

❖ 3. After some research, list five large companies that use Django. Specify what the company's product or service is and what they use Django for.

➢ 1. Instagram

■ Instagram is one of the largest and most widely used social media platforms where users post and share photos and videos. Django is used for their backend, handling the requests from the mobile client to the server over a JSON, HTTP API (with over 2000 endpoints).

➢ 2. Disqus

■ Disqus is a US blog comment hosting service that allows users to implement comments and discussion options on their websites, analyze audience activity, and customize ad impressions. Disqus uses Django in their backend for almost all of their web traffic, now continuing to scale up for millions of new users.

➢ 3. Spotify

■ Spotify is a digital music, podcast, and video service that offers access to millions of songs and content from creators around the world. Speed is a big focus for Spotify, so it uses Python mainly in their backend services and data analysis. Python (and Django) is used due to its fast backend development and processing (including prototyping), as well as machine learning options.

➢ 4. YouTube

■ YouTube, part of the Google Company, is the largest video hosting platform. YouTube uses Django and Python for the servers that serve the

> frontend and APIs due to the rapid growth of audience and the need for fast implementation of new features.

- ➢ 5. DropBox
    - ■ DropBox is one of the largest data storage websites, or cloud storage. DropBox used Python to create the backend and client software. Using Django, the developers were able to add a user history option, synchronize the account across devices, and add a file sharing option.

- ❖ 4. For each of the following scenarios, explain if you would use Django (+ why/why not):

    - ➢ You need to develop a web application with multiple users.
        - ■ Yes. Django could be suitable to quickly develop the application and scale it up in the future as the user base expands.

    - ➢ You need fast deployment and the ability to make changes as you proceed.
        - ■ Yes. Django's MVT architecture allows for fast development and deployment, as well as the ability to make changes and add new components due to its loosely coupled architecture.

    - ➢ You need to build a very basic application, which doesn't require any database access or file operations.
        - ■ No. In a basic application that doesn't make use of most Django features, I wouldn't use it, as it can lead to unnecessary overhead.

    - ➢ You want to build an application from scratch and want a lot of control over how it works.
        - ■ No. Django is a highly structured web framework that does things "the Django way", so it would mean losing some control over how an application works. If I want control over most of the details, I would not use Django.

    - ➢ You're about to start working on a big project and are afraid of getting stuck and needing additional support.
        - ■ Yes. Django is a great choice for big projects due to its fast development, fast processing, and scalability. If I am afraid of getting stuck, Django has a huge community of contributors, so I can get additional support if needed.

- ❖ 5. Download and install Python

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```
yufanxu@Yufans-MacBook-Air ~ % python3 --version
Python 3.9.6
yufanxu@Yufans-MacBook-Air ~ % python3.8 --version
Python 3.8.19
yufanxu@Yufans-MacBook-Air ~ %
```

❖ 7. Set up and create a virtual environment and name it "achievement2-practice"

```
yufanxu@Yufans-MacBook-Air ~ % cd Desktop/CFProjects/Python
yufanxu@Yufans-MacBook-Air Python % cd Achievement_2
yufanxu@Yufans-MacBook-Air Achievement_2 % mkvirtualenv achievement2-practice
created virtual environment CPython3.8.19.final.0-64 in 386ms
  creator CPython3macOsBrew(dest=/Users/yufanxu/.virtualenvs/achievement2-practice, clear=False, no_vcs_ignore=False, global=False)
  seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_data_dir=/Users/yufanxu/Library/Application Support/virtualenv)
    added seed packages: pip==24.0, setuptools==70.0.0, wheel==0.43.0
  activators BashActivator,CShellActivator,FishActivator,NushellActivator,PowerShellActivator,PythonActivator
virtualenvwrapper.user_scripts creating /Users/yufanxu/.virtualenvs/achievement2-practice/bin/predeactivate
virtualenvwrapper.user_scripts creating /Users/yufanxu/.virtualenvs/achievement2-practice/bin/postdeactivate
virtualenvwrapper.user_scripts creating /Users/yufanxu/.virtualenvs/achievement2-practice/bin/preactivate
virtualenvwrapper.user_scripts creating /Users/yufanxu/.virtualenvs/achievement2-practice/bin/postactivate
virtualenvwrapper.user_scripts creating /Users/yufanxu/.virtualenvs/achievement2-practice/bin/get_env_details
(achievement2-practice) yufanxu@Yufans-MacBook-Air Achievement_2 %
```

❖ 8. Install Django and verify the installation by checking the version

```
(achievement2-practice) yufanxu@Yufans-MacBook-Air Achievement_2 % django-admin --version
4.2.13
```

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