Exercise 2.1

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

Django is popular among web developers for several reasons:

- Django is based on Python programming language which is easier (to read?) than other high-level programming languages like Java or C++.
- It adopts Python's "batteries included" approach which means it provides all necessary things that can be used to develop a fully functioning web application (*e.g.* Object Relational Mappers, Forms, Testing, Templates, Session handling, Admin Dashboard, Authentication mechanism, Templates, and much more.) which makes development fast and easy. It also provides built-in and up-to-date security features, like security and authentication mechanisms.
- It's free and open source and has a huge community where you can get help and expert advice.

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.

National Geographic (online magazine)

National Geographic is one of the largest nonprofit scientific and educational organizations in the world.

The website and education page rely on a Django content management system (CMS) to manage all its content, from images to advertisements to modules.

Mozilla Firefox (web browser)

Mozilla Firefox is one of the most popular web browsers. Django is an excellent solution for web browsers, because the key demand is effectively handling user requests. Flexible scaling and robust security are also integral needs for such products.

Mozilla has to handle huge amounts of users. Given the number of requests they receive via the API, they had to switch from PHP and CakePHP to using Python and Django web frameworks for their website. The Mozilla support site and the add-ons and plugin for their web browser are developed with Django.

Instagram (social media platform)

Instagram is a photo and video sharing social networking service. The co-founders of Instagram used Django to create a quick working prototype. It uses Django for quick development (Instagram supports millions of users and is continually updated with new features), including

quick development and simultaneous release of the same features for Android and iOS (cross-platform usability).

YouTube (social media platform)

YouTube is a video sharing and social media platform that allows users to upload videos and earn money through traffic generated. It uses Django to handle high traffic demands and support millions of data requests daily.

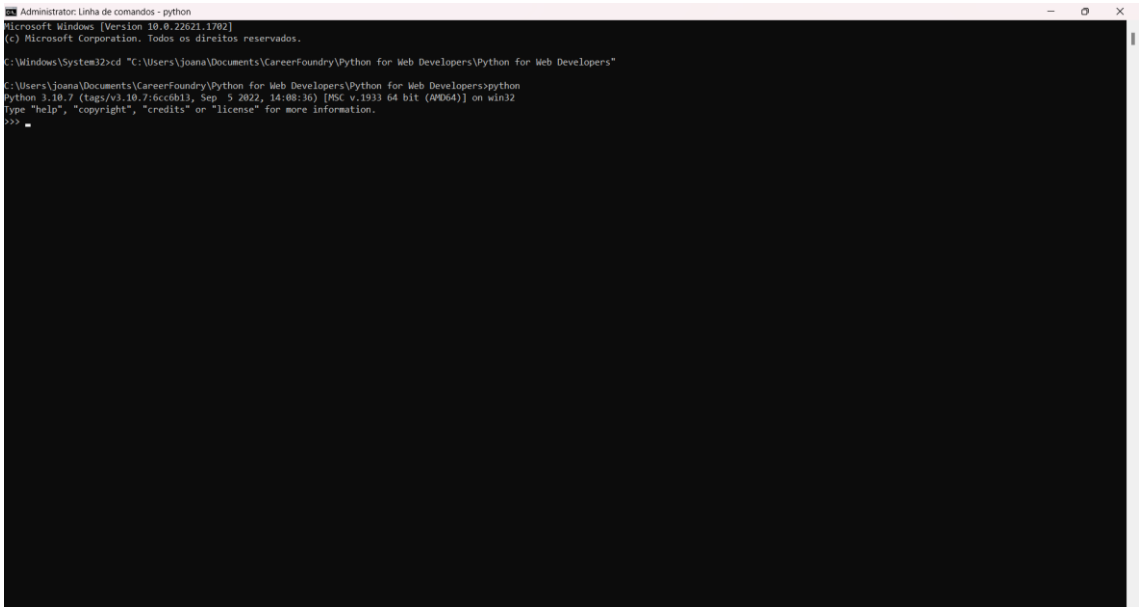
Spotify (media streaming platform)

Spotify allows users to download and listen to music on multiple devices. It handles data of millions of users, creating personalized playlists and recommendations (using Python's machine learning capabilities). It uses Django because of the need for a fast/optimized backend and machine learning options.

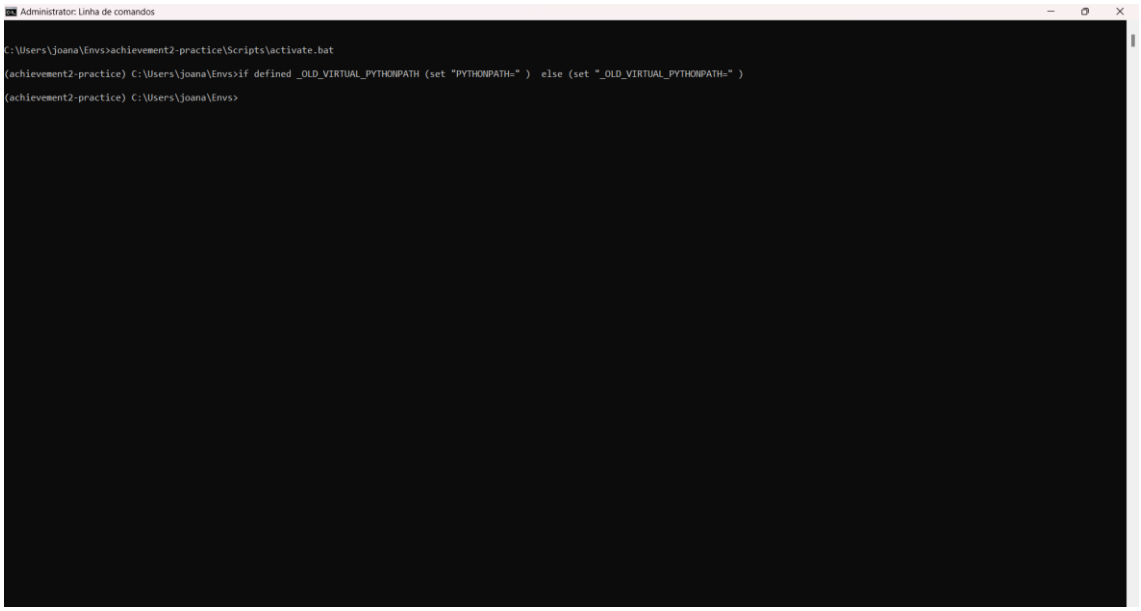
4. For each of the following scenarios, explain if you would use Django (and why or why not):

- **You need to develop a web application with multiple users.**
    - In this scenario I would use Django. Django is a good choice for web applications. An application with multiple users can potentially become a large system that needs to be scalable and secure which also makes Django suitable. Changes and speed will also be concerns because of the user experience.
- **You need fast deployment and the ability to make changes as you proceed.**
    - In this scenario I would use Django. Django is a good choice if you need fast deployment and the ability to make (lots of) changes.
- **You need to build a very basic application, which doesn't require any database access or file operations.**
    - In this scenario I wouldn't use Django because the application doesn´t require any database access or file operations. Also Django uses prewritten code which means it's more server intensive, making it rather heavy on low-bandwidth systems (it's a very basic application).
- **You want to build an application from scratch and want a lot of control over how it works.**
    - In this scenario I wouldn't use Django. Although Django would make development fast and easy and could reduce the time taken to build the application from scratch, I would lose control over the fine details of the system due to Django's batteries-included system and the specific way that it works. Since I want a lot of control over how it works Django isn't suitable.
- **You're about to start working on a big project and are afraid of getting stuck and needing additional support.**
    - In this scenario I would use Django. Django is suitable for large systems that need to be scalable (it's very simple to add new hardware and components). Since Django has a huge community it's very easy to get support. Django's documentation is also very well covered.

5. Download and install Python (if you haven’t done so already).



7. If you haven’t done so already, set up and create a virtual environment and name it achievement2-practice.



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