Creating a virtual environment in Python for Windows

Motivation

Virtual environments and Conda environments are a way to organize and keep track of all the dependencies you need for a Python script (i.e. packages like Pandas, NLTK, etc.).

Setup

- Make sure you have Python3 installed for Windows
- Note: If you cannot remember if you have installed it or not, you can open a command prompt and type: **python3** ; if this command works then Python3 is already installed on your computer.

Commands

1. Open command prompt and type change directories to your desktop (or wherever you would like to store your environment)

```
cd Desktop
```

2. Create a new folder which we will call **envs.** You want to make sure your environments are organized and stored in an easily accessible location

```
mkdir envs
```

3. Change directories into your new directory

```
cd envs
```

4. Make a new virtual environment in Python (this may take a minute to run)

```
env>python -m venv INSERT_NAME
```

(changing INSERT_NAME to whatever you would like to name your environment, make sure it is a descriptive name so that you remember what each environment is)

5. Make sure that your environment was created by typing `dir` in the command prompt. You should see the name of your environment you just created in Step 4.

6. Now your environment has been created, but we still have to activate that environment. We can activate our environment by typing:

```
INSERT_NAME\Scripts\activate
```

replacing INSERT_NAME is the name you selected in Step 4.

7. Now you should be able to see the virtual environment name in parentheses next to your name in the command prompt which means you have successfully created your environment.

8. The environment has been activated, but we still have yet to install any packages in the environment. Let's say you are interested in using the NLTK and Pandas package for a text analysis package. We want these packages installed in this environment, so we can type:

```
pip install nltk
pip install pandas
```

   This should take a few minutes to install these packages.

9. To make sure NLTK and Pandas were installed, you can look at the output of:

```
pip freeze
```

10. Alternatively, you can open a Python shell (to do this, just type python3 in the command line) and try importing those two packages

```
import pandas
import nltk
```

    You should not get any errors with this if your packages were installed correctly. Type quit() to exit the Python shell.

11. If you would like to exit out of your virtual environment, type:

```
deactivate
```

12. If you would like to reactivate your environment at any point, just change directories into Desktop/envs (or wherever you stored your environment) and then rerun step 6.