# Introduction to Data Science

## Data Science Essentials

# Goals for today

- conda environments
- Create a choropleth using *geopandas*

# Review last session coding tasks

## week3_review notebook

# conda

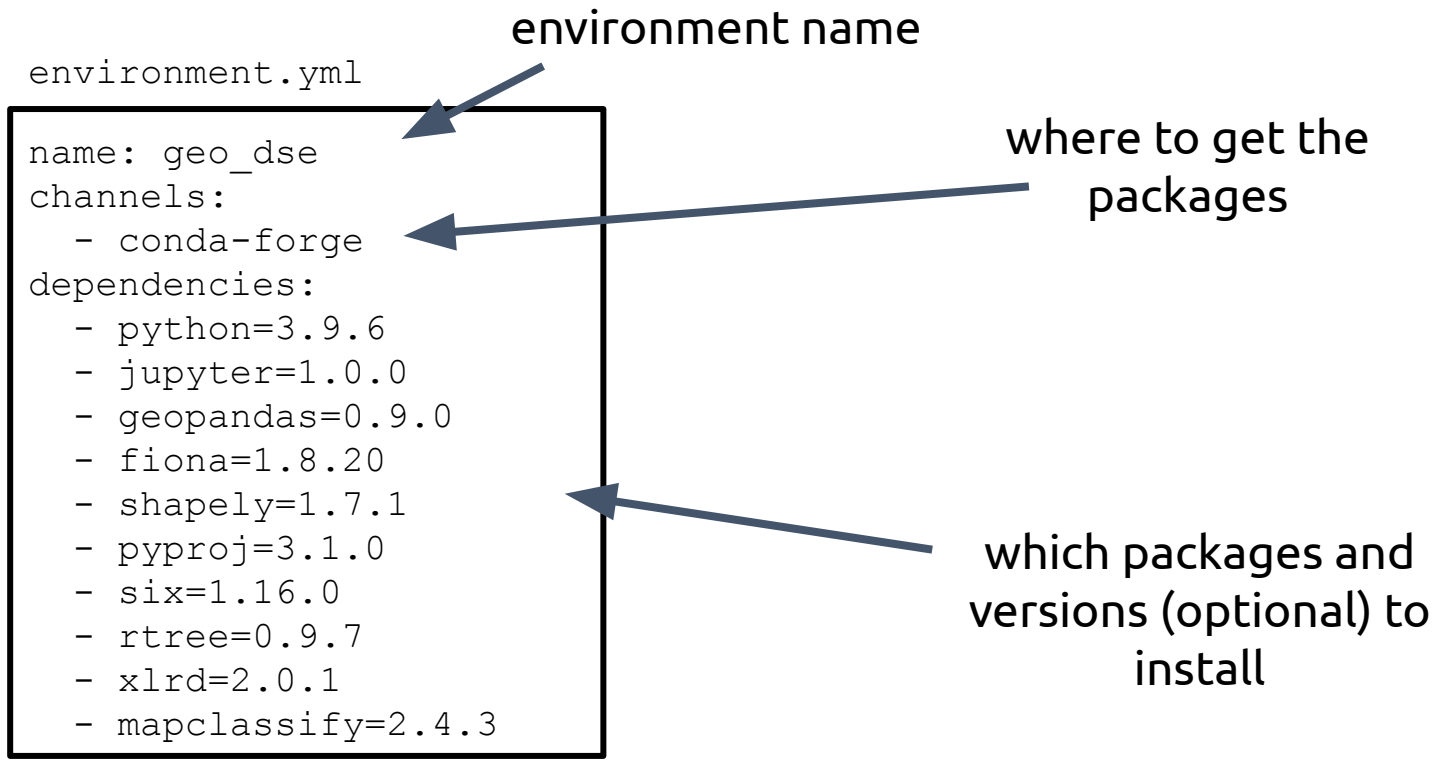
conda is not just a package manager, but is also an *environment* manager, meaning that you can create separate environments containing files, packages, their dependencies, and their own versions of the Python interpreter.

This serves two purposes:

1. Isolates your projects
2. Makes it easier to share your work and allows for reproducibility.

# conda Environments

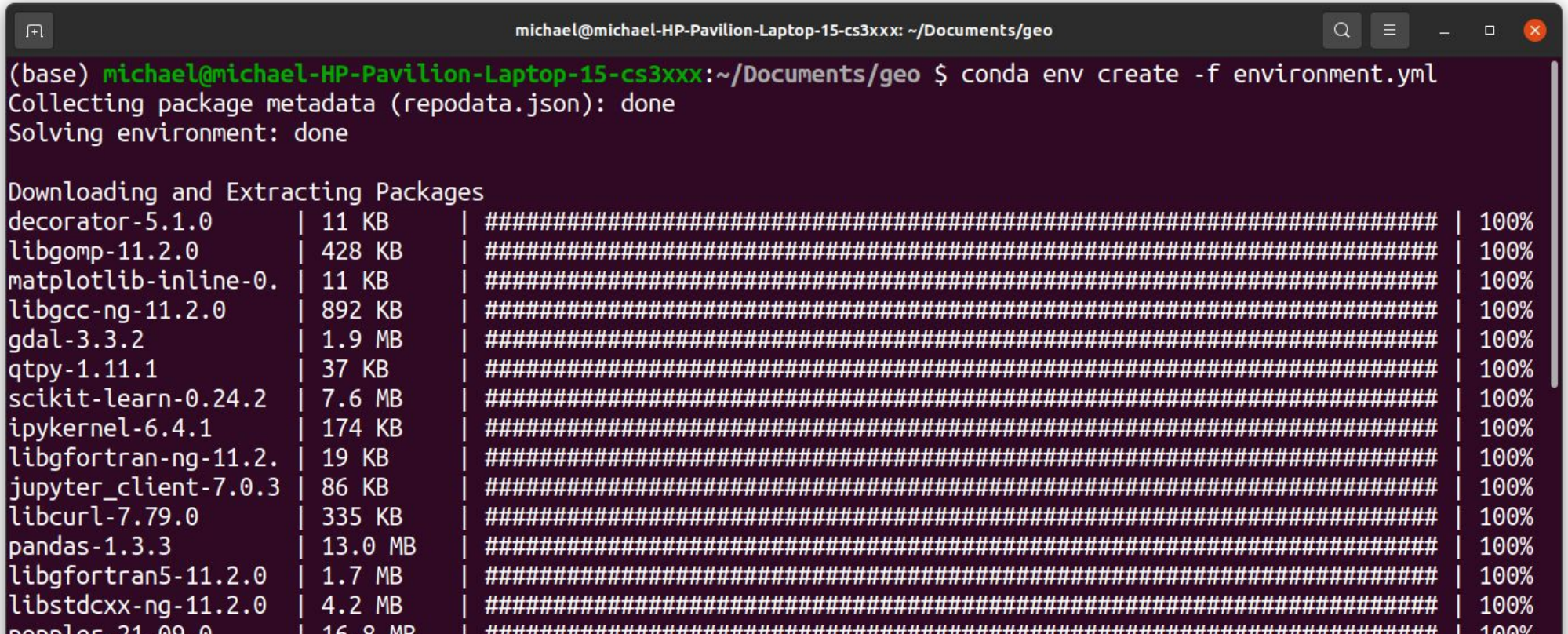
We’re going to create an environment from a YAML file which lists which packages and versions should be installed.



# conda Environments

To create an environment from a YAML file, run this from the folder containing the environment file:

```
$ conda env create -f environment.yml
```



# conda Environments

You can see a list of all of your conda environments along with the one currently active by typing

```
$ conda env list
```

```
(base) michael@michael-HP-Pavilion-Laptop-15-cs3xxx:~/Documents/geo $ conda env list
# conda environments:
#
                         /home/michael/.local/share/r-miniconda
                         /home/michael/.local/share/r-miniconda/envs/pandas
                         /home/michael/.local/share/r-miniconda/envs/r-reticulate
base                  *  /home/michael/anaconda3
abtesting                /home/michael/anaconda3/envs/abtesting
bayes                    /home/michael/anaconda3/envs/bayes
ft_vectors               /home/michael/anaconda3/envs/ft_vectors
geo_dse                  /home/michael/anaconda3/envs/geo_dse
```

This will display a * next to the active environment.

# conda Environments

To switch environments, type

```
$ conda activate <environment name>
```

```
(base) michael@michael-HP-Pavilion-Laptop-15-cs3xxx:~/Documents/geo $ conda activate geo_dse
(geo_dse) michael@michael-HP-Pavilion-Laptop-15-cs3xxx:~/Documents/geo $ conda env list
# conda environments:
#
                         /home/michael/.local/share/r-miniconda
                         /home/michael/.local/share/r-miniconda/envs/pandas
                         /home/michael/.local/share/r-miniconda/envs/r-reticulate
base                     /home/michael/anaconda3
abtesting                /home/michael/anaconda3/envs/abtesting
bayes                    /home/michael/anaconda3/envs/bayes
ft_vectors               /home/michael/anaconda3/envs/ft_vectors
geo_dse               *  /home/michael/anaconda3/envs/geo_dse
```

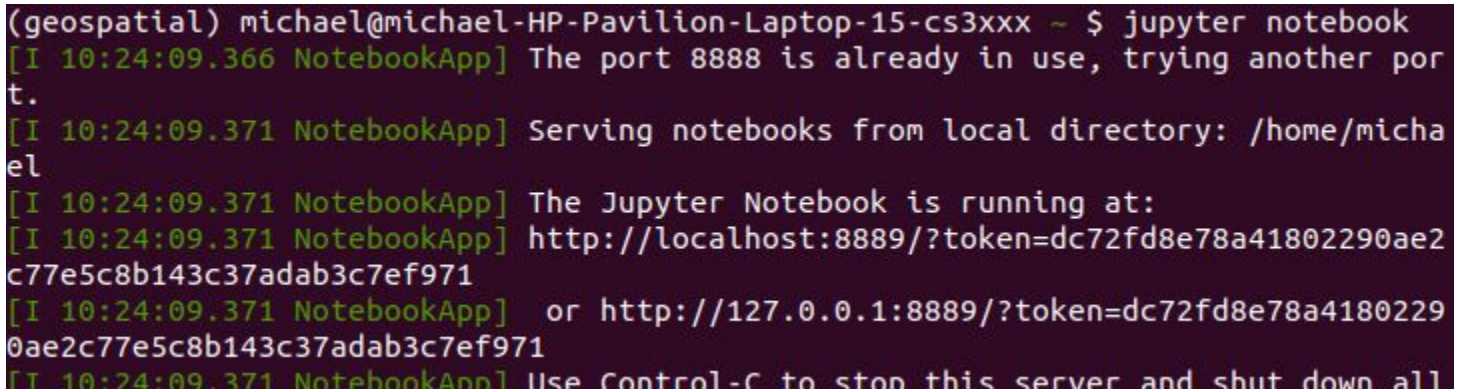
If you need to return to the base environment, type

```
$ conda deactivate
```

# conda Environments

Then (as long as your current environment includes jupyter), you can launch jupyter in the current environment by typing

```
$ jupyter notebook
```



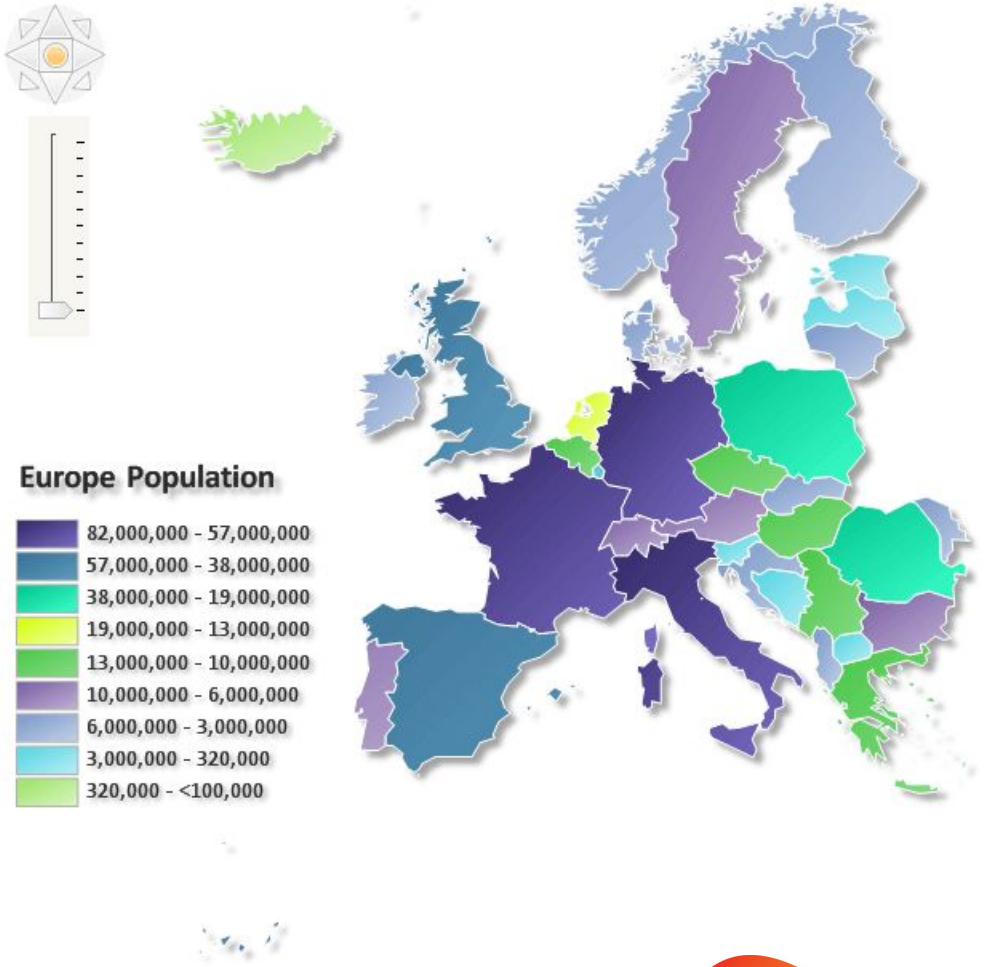
# Choropleths

**A choropleth is a map where areas are colored or shaded according to the value of some aggregate statistic for that area (eg. average income, population density, unemployment rate, etc.)**

**We will create choropleths in Python by using the *geopandas* library, which you will most likely need to install.**

**To install geopandas, open the Terminal (Mac) or Anaconda Prompt (Windows) and type**

**$ conda install geopandas -c conda-forge**




NASHVILLE SOFTWARE SCHOOL

# Building a choropleth

## Choropleth_Tutorial notebook

# Questions?