# Preparing For E-Learning

## Installing Anaconda

You will need Anaconda on your home computer. If you have already been working on homework/projects from home, you should be all set. Otherwise, here are some links that might be helpful:

- Windows: https://www.anaconda.com/distribution/#download-section (https://www.anaconda.com/distribution/#download-section)
- Mac: https://www.anaconda.com/distribution/#download-section (https://www.anaconda.com/distribution/#download-section)
- Chromebook (instructions): https://alex.miller.im/posts/data-science-chromebook-pixelbook-jupyter-python-r/ (https://alex.miller.im/posts/data-science-chromebook-pixelbook-jupyter-python-r/)

## Additional Modules

Most of the modules we need are included with Anaconda (over 1,500!). However, we need a few extras that are not included by default:

- exifread: used to read metadata embedded in image files
- gmaps: the Google Map API, which allows you to put pins on your own maps
- textblob: a module for natural-language processing
- image: used for opening, manipulating, and saving many different image file formats

## How to Install Modules

We will use *pip* to install these modules. If you already know how to use *pip*, you just need the following three commands:

- pip install exifread
- pip install gmaps
- pip install textblob
- pip install image

If you are unfamiliar with *pip*, it is a package that can download and install modules quickly/easily. If you have a Windows computer, you can click the link below to watch a video of me installing these packages on my own Windows computer. If you have a Mac or a Chromebook, I've included links from other sources that I found from doing a Google search.

- Windows: https://www.youtube.com/watch?v=PweT0PTupQ0&feature=youtu.be (https://www.youtube.com/watch?v=PweT0PTupQ0&feature=youtu.be)
- Mac: https://www.youtube.com/watch?v=6vt3uaLOln4 (https://www.youtube.com/watch?v=6vt3uaLOln4)
- Chromebook: https://www.youngwonks.com/blog/Coding-on-a-Chromebook-Using-Python-and-PyGame (https://www.youngwonks.com/blog/Coding-on-a-Chromebook-Using-Python-and-PyGame)

*Note: If you have a Mac or a Chromebook and you'd like to made a video screencast that shows/explains how to download modules, I'd love to replace the above links with your screencast. I'd be happy to award a couple extra credit points for your efforts.*

## Testing That The Modules Work

The last thing to do in this notebook is to check that your modules are working. Run each of the code cells below, and if it does not produce an error then you should be all set!

### Testing exifread

In [1]:
```python
from IPython.display import Image
Image(filename="chicago.jpg")

# https://pypi.python.org/pypi/ExifRead
import exifread
import pandas as pd

# Open image file for reading (binary mode)
mystery1 = open('chicago.jpg', 'rb')

# Return Exif tags
tags1 = exifread.process_file(mystery1)

import pandas as pd

tags1_DF = pd.DataFrame(tags1, index=[0])

tags1_transpose = pd.DataFrame.transpose(tags1_DF)

tags1_transpose[:9]
```

Out[1]:

|                       | 0                   |
|-----------------------|---------------------|
| Image ImageDescription | SONY DSC            |
| Image Make            | SONY                |
| Image Model           | DSLR-A230           |
| Image XResolution     | 350                 |
| Image YResolution     | 350                 |
| Image ResolutionUnit  | Pixels/Inch         |
| Image Software        | DSLR-A230 v1.10     |
| Image DateTime        | 2018:12:02 22:10:57 |
| Image Artist          | Picasa              |

### Testing gmaps

In [2]:
```python
# Import the gmaps python module and load in your API Key:

import gmaps

gmaps.configure(api_key="AIzaSyCLla6Q7krE9xNg6SnNMoGNIzjCLddE9EU")

location = [(41.881832, -87.623177)]

from ipywidgets.embed import embed_minimal_html # Allows us to create a separte

markers = gmaps.marker_layer(location)

markermap = gmaps.Map()
markermap.add_layer(markers)

embed_minimal_html('MarkerMap1.html', views=[markermap])
print("*** Check your folder to find the new HTML file. ***")
```

```
*** Check your folder to find the new HTML file. ***
```

Open up the HTML file in your favorite web browser, then zoom out the map to see where the location (41.881832, -87.623177) is! Pretty cool, huh?

## Testing textblob

In [3]:
```python
from textblob import TextBlob

tweet1 = "Popeye's new chicken sandwich is terrible! I wouldn't wait in line for

tbobject1 = TextBlob(tweet1)

tbobject1.sentiment.polarity
```

Out[3]:  -0.48787878787878786

The negative number above indicates that this angry Popeye's customer had a negative sentiment to their Tweet.

In [ ]: