

# Geography 378: Introduction to Geocomputing

## Lab 6: Python Objects

Assigned: 11/18

Due: 11/25

10 points

### Hand-in

- Please collect your answers in a single .py file called **lab6\_yourname.py**.
- Submit the file to the Learn@UW Dropbox folder called "Lab 6".
- Include appropriate comments to explain what each line or block of code accomplishes.  
**You must comment your code for full credit.**

### Notes

- You need to deal with bad user inputs in this lab.
- Under no circumstances should your program bomb (i.e. it either restarts or ends gracefully).

### Lab Task

(10 pts) In last lab, we created python scripts that read in the content of *CityPop.csv* and store the data in certain containers. Now, let's try to replace your containers with **classes** and create **instances** to store the data.

- The name of your class should be `City`.
- Your class should have an `__init__` method to assign values to the following attributes: city name, city label, latitude, longitude, population values from 1970 to 2010 (consider to store them in a dictionary).
- Create a list called `Cities` to store the city instances based on reading the entries in *CityPop.csv*.
- Print out the attributes of all cities at the end.
- Like last lab, you need to deal with bad inputs when trying to read the file.

### Additional Task

(2 pts) Add the following **methods** to your `City` class to make it more useful:

- `printDistance(self, othercity)`: calculate and output the distance between this city and a given city.
- `printPopChange(year1, year2)`: calculate and output the population change over two years. You may assume the input values are valid.