

# SelfEvaluation12\_2

November 15, 2015

## 1 Exercise 12.2:

1. add a new method to the City class called `printLatDiff` which prints the latitude difference (absolute value) between two cities.
2. Define a separate function outside of any class to accomplish the same functionality as `printLatDiff` . The function definition should be:

```
def printLatDiff(city1,city2):
```

3. Now suppose at some point in the future you decide to store a City's latitude and longitude as a tuple. Is anything more than a change to the class definition required? Would the new function created in 2) need to change?

*Answer appears after one blank page (so you don't peek).*

Are you sure you're ready to peek?

```

In [4]: class City:
        def __repr__(self):
            return "<City: %s at (%.2f, %.2f)>" % (self.name, self.lon, self.lat)
        def __str__(self):
            return "From str method of City: %s is at lon:%.2f lat:%.2f" % (self.lon, self.lat)

        def printLatitude(self):
            print "%s is at latitude %.2f" %(self.name,self.lat)
        def printLongitude(self):
            print "%s is at longitude %.2f" %(self.name,self.lon)
        def printLatDiff(self, othercity):
            dist = abs(self.lat - othercity.lat)
            format = "%s is %.1f degrees Latitude away from %s"
            values = (self.name, dist, othercity.name)
            print format % values

        def printLatDiff(city1, city2):
            dist = abs(city1.lat - city2.lat)
            format = "%s is %.1f degrees Latitude away from %s"
            values = (city1.name, dist, city2.name)
            print format % values

        LA = City()
        LA.name = "Los Angeles"
        LA.lat = 34.05
        LA.lon = -118.25

        Mad = City()
        Mad.name = "Madison"
        Mad.lat = 43.06
        Mad.lon = -89.40

        LA.printLatDiff(Mad)
        printLatDiff(LA, Mad)

```

```

Los Angeles is 9.0 degrees Latitude away from Madison
Los Angeles is 9.0 degrees Latitude away from Madison

```

Yes. If we change the values to tuples then the functions would need to call `self.loc[0]`, or whatever the new attributes are called. The whole structure of the function needs to change.