**Isolated Location Identification (ID) Algorithm**

This algorithm has two objectives: 1) find the most isolated location ID from a dataset of latitudes and longitudes that are associated with locations within countries around the world, and 2) find the most isolated location IDs in each country.

**Installation**

The algorithm’s Python code file is “**Isolated\_Location\_Algorithm\_Test\_7.py**” Before executing the Python code, the CSV dataset must be saved to same folder as the Python file.

The “Test\_Dataset\_3.csv” file is subset of the “Data\_Scientist\_Product.csv” for algorithm testing.

**Usage**

The Python 2.7 code imports the location dataset; accomplishes dataset pre-processing to drop rows with missing (e.g. NaN) data; computes distance with the Haversine formulas between different locations that are outside the origin location’s country; sums all the distances from a given origin location and saves the result back to the dataset; sorts the dataset in descending order to determine level of location ID isolation; displays the most isolated location ID and most isolated location ID in each country.

The CSV file that will be processed by the algorithm is established by setting the program\_dataset\_file string variable on line 20 of Python code to the intended CSV file name (see below).

program\_dataset\_file = "Data\_Scientist\_Product.csv"

Set program\_dataset\_file to “Test\_Dataset\_3.csv” to produce the included sample test results in the Test\_3\_Output.docx file.