**ReadMe for Script: VDSS\_Zip\_ZCTA\_Crosswalk\_Inconsistencies**

**Purpose:**

The purpose of this script is to verify the accuracy of ZCTA (ZIP Code Tabulation Area) assignments for a sample of ZIP codes using data from a GitHub source. The script plots the coordinates of these ZIP codes, obtained from zipdatamaps.com, onto a TIGER shapefile map of Virginia and Washington, D.C., using the TIGRIS package. The analysis revealed that 9 out of 14 ZIP codes were seemingly assigned to an incorrect ZCTA based on the results.

**Data Sources:**

1. **VDSS\_Zip\_ZCTA\_Crosswalk\_Sample.xlsx**: Contains a sample of ZIP codes and their corresponding ZCTAs.
2. **TIGER/Line Shapefiles**: Used to obtain the ZCTA boundaries for Virginia and Washington, D.C.

**Process:**

1. Load the sample ZIP code data from an Excel file.
2. Convert the ZIP code data to a spatial object and reproject to a suitable coordinate system.
3. Obtain ZCTA boundaries for Virginia and Washington, D.C., using the TIGRIS package.
4. Plot the ZIP code coordinates on the map and determine whether each ZIP code falls within its assigned ZCTA.
5. Classify each ZIP code as having a "Correct ZCTA" or "Incorrect ZCTA" based on its plotted location.
6. Save the results to an Excel file and generate an interactive map for visualization.

**Output:**

1. **VDSS\_Zip\_ZCTA\_Crosswalk\_Status.xlsx**: An Excel file listing each ZIP code along with its assigned ZCTA and a status indicating whether the assignment is correct.
2. **VDSS\_Zip\_ZCTA\_Crosswalk\_Map.html**: An interactive HTML map showing the locations of ZIP codes and their corresponding ZCTAs.