**VA\_HUD\_USPS\_Zip\_Comparison\_Q4\_2010\_Q4\_2016.R - ReadMe**

**Overview**

This script, VA\_HUD\_USPS\_Zip\_Comparison\_Q4\_2010\_Q4\_2016.R, is designed to compare ZIP code data between Q4 2010 and Q4 2016 for Virginia. It loads and filters the data using USPS ZIP code information and then creates a 2x2 comparison table to identify ZIP codes present in one quarter but not the other.

**Datasets**

* **USPS\_Zip\_County.xlsx:** This file contains ZIP code data filtered specifically for Virginia (VA), including the corresponding county information.
* **HUS\_USPS\_ZIP\_CROSSWALK Files (Q4 2010 and Q4 2016):** These files contain ZIP code and tract information for Q4 2010 (ZIP\_TRACT\_122010.xlsx) and Q4 2016 (ZIP\_TRACT\_122016.xlsx).

**Script Functionality**

1. **Loading Necessary Libraries:** The script loads required R libraries such as readxl for reading Excel files, dplyr for data manipulation, and writexl for writing Excel files.
2. **Loading Data:** The script loads the USPS ZIP code data, filtered for Virginia, and the datasets for Q4 2010 and Q4 2016.
3. **Filtering for Virginia ZIP Codes:** The script filters the Q4 2010 and Q4 2016 datasets to include only ZIP codes identified as Virginia ZIP codes in the USPS data.
4. **Creating the 2x2 Comparison Table:** The script compares the filtered ZIP codes from Q4 2010 and Q4 2016, creating a 2x2 table that shows:
   * ZIP codes present in 2010 Q4 but not in 2016 Q4
   * ZIP codes present in 2016 Q4 but not in 2010 Q4
   * ZIP codes present in both 2010 Q4 and 2016 Q4
5. **Saving the Output:** The comparison table is saved as an Excel file in the specified directory.

**Dependencies**

* **readxl:** For reading Excel files.
* **dplyr:** For data manipulation.
* **writexl:** For writing data to Excel files.

**File Output**

* **Data Outputs/VDSS\_Historical\_Zip\_Code\_Changes/VA\_HUD\_USPS\_Zip\_Comparison\_Q4\_2010\_Q4\_2016.xlsx:** This file contains the 2x2 comparison table showing ZIP code presence across Q4 2010 and Q4 2016.

**Usage**

1. Ensure all dependencies are installed and up to date.
2. Place all required data files in the appropriate directories as specified in the script.
3. Run the script to compare the ZIP code data between Q4 2010 and Q4 2016.
4. The output file will be saved automatically in the Data Outputs/VDSS\_Historical\_Zip\_Code\_Changes/ directory.

**Notes**

* The accuracy of the comparison relies on the completeness and correctness of the input datasets.
* This script is specific to comparing Q4 2010 and Q4 2016; modifications are needed to compare other quarters.