**IP Binning Project**

1. Assignment is to classify IP addresses by country in the file named, ‘ecom\_txns.csv’
2. Use the IP key file, ‘ip4\_mappings.csv’ as the key for mapping. Replace all blank country rows with ‘ZZ’ using ‘zztop.py’ script.
3. The package ‘ipaddress’ will convert the decimal-dot string to an integer so that the ip addresses can be converted into a binning table with integer ranges.
4. The script ‘convert\_both\_ip\_bins.py’ accomplishes this conversion for ‘ip4\_mappings.csv’ resulting in a file called ‘ip\_to\_integer\_start\_end.csv’ which has the original ip address columns and the new generated conversions to integer columns.
5. Manually create a new file called ‘ip\_to\_integer\_brief1.csv’ from the ‘ip\_to\_integer\_start\_end.csv’ file by using the ending integer for each country and adding an extra row up top with no country but a zero integer.
6. Also use the ‘ipaddress’ package to convert the ip addresses in ‘ecom\_txns.csv’ to integers.

This is accomplished in the first part of the ‘ip\_results.py’ script.

1. The rest of the ‘ip\_results.py’ script accomplishes the binning of each of the integer ip addresses by converting the ‘countries’ column to a list and applying the ‘pandas cut’ function, ‘pd.cut’ producing the ‘ipclassifer.csv’ output file.