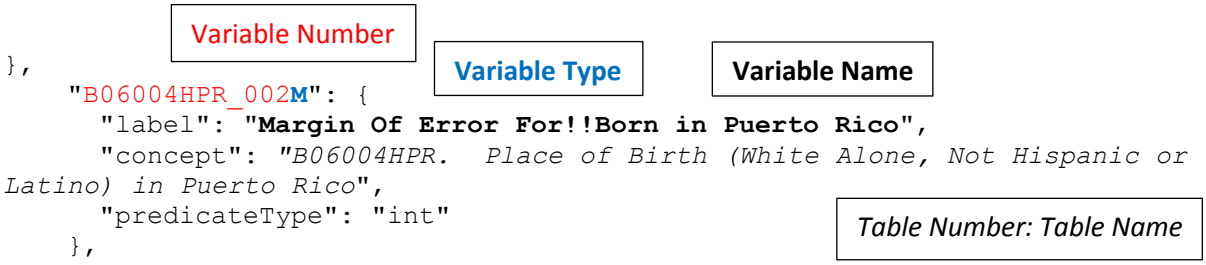
Census Bureau API Guide

Available Data

The Census Bureau provides access to American Community Survey (ACS) data in standard 1-, 3-, and 5-year roll-ups through their APIs. They have listed all available APIs at: http://www.census.gov/data/developers/data-sets.html . Two types of data are available for each time-period: the Summary File and the Data Profile.

The **Summary Files** are the most detailed tables available from the ACS, and all of them are identified by the letter 'B' at the beginning. You can view the list of variables available from these tables at: http://api.census.gov/data/2014/acs5/variables.json . Each entry will look similar to **Figure 1**.

Figure 1. An illustration of the elements present in a variable listing (in JSON format).



Note that variable information is also viewable as html or xml; simply change the final extension in the URL to view it another way.

The **Data Profiles** are a set of popularly requested data related to demographic estimates and social, economic, and housing characteristics. These tables are identified by the letter 'D' at the beginning. You can view the list of variables available from these tables at: http://api.census.gov/data/2014/acs5/profile/variables.json.

Currently it is not possible to access **Subject Tables** (designated by the letter 'S' at the beginning) through the Census Bureau API. In general, these tables provide aggregated versions of the information available in the Summary Files. You may be able to reconstruct Subject Table variables by adding Summary File columns together, and many topics covered in the Subject Tables are also included in Data Profiles.

A Word about Variable Types

Most of the elements listed in **Figure 1** are self-explanatory. However, please note that there are generally four *variable types* available: estimates (E), margins of error (M), percentages (PE) and margins of error on percentages (PM). Most ACS measures are estimates (E), although occasionally related

percentages (P) are also provided for user convenience. Margins of error are provided for every estimate and percentage.

Accessing the Data

The Census Bureau provides examples of how to request access to the API here: http://api.census.gov/data/2014/acs5/examples.html . For further explanation, we will break down a specific call and explain its parts.

In general, we can directly access a set of table using the HTTP method GET. In Python, this can be accomplished by importing the **`requests`** package and using function **`requests.get().`**

For instance:

```
import requests

key = "Sample Key"

response =
requests.get('http://api.census.gov/data/2014/acs5?get=NAME,B01001_001E,B0812
6_033M&for=tract:*&in=state:53+county:*&key=' + key)
```

Breaking it down:

```
'http://api.census.gov/data/2014/acs5?' #ACS 2014 5-year rollup Summary File
'get='                                  #HTTP GET method
'NAME'                                  #Name of the table
'B01001_001E,B08126_033M'               #Two variables we want returned
'for=tract:*'                           #For all census tracts (* = "all")
'in=state:53'                           #In state 53 (Washington)
'+county:*'                             #All counties
'&key='                                 #We need to include API key
```

Note that adding two character entries together (as in + key) works in Python, but may not work everywhere. Normally your private key will be typed in the URL directly after the equal sign.

Now that you understand how a call to the API can be written, you are ready to gather your list of variables and request a key!