**Agile Challenge - Trial Run**

***Challenge Overview***

Advancing in the 21st century and leveraging a ubiquitous Internet, troves of previously unavailable or difficult to access data are coming available, in large part thanks to both industry and government organizations who seek to empower their consumers with data. The federal government has enacted hundreds of programs aimed at helping government become increasingly transparent through increased availability of data. But making this data and such programs simply available is not enough. Increasingly, the public also needs help to translate and more meaningfully consume this data.

Over the past few years most government entities (state, local, federal, foreign) have begun embracing open data and are increasingly releasing datasets publicly. This movement has vastly increased the amount of data available, but existing applications seem to be designed mainly to view and access individual datasets one at a time. This restriction contradicts the notion that, ultimately, everything is related to everything else.

The vision for this challenge is simple, it’s about assisting customers with discovery of U.S. communities through a mixing and combining of government data. A visualization capability that enables users to discover a variety of information about a region, or the inverse, to identify a region based on various data criteria provided. The challenge is to construct a simple web-based capability that leverages a plethora of government data and APIs and enables users to specify criteria (geographic area or mix of data specifications) and discover the geographic area(s) that match or information about a specified geographic area queried.

Data by itself is inadequate and/or overwhelming; the goal here is to turn data into information, and information into better insights about our communities.

***Data Sources***

1. *Files:*
   1. The U.S. DHS publishes annually [The Yearbook of Immigration Statistics](http://www.dhs.gov/yearbook-immigration-statistics), which is a compendium of tables that provides data on foreign nationals who, during a fiscal year, were granted lawful permanent residence (i.e., admitted as immigrants or became legal permanent residents), were admitted into the United States on a temporary basis (e.g., tourists, students, or workers), applied for asylum or refugee status, or were naturalized. Data files from 1996 through 2013 are available.
   2. The U.S. DOL publishes annually [The Occupational Employment Statistics](http://www.bls.gov/oes/#data), which includes employment and wage estimates for over 800 occupations. These estimates are available for the nation as a whole, for individual States, and for metropolitan and nonmetropolitan areas. Data from 1996 through 2013 are available.
   3. The USDA's National Agricultural Statistics Service conducts hundreds of surveys every year and publishes reports and data covering virtually every aspect of U.S. agriculture, ranging from farm chemical usage to grain production and chickens to alpacas. This information is available in [data](http://quickstats.nass.usda.gov/) form, as well as an API.
2. *APIs:*
3. Each year, the Census Bureau's Population Estimates Program (PEP) utilizes current data on births, deaths, and migration to calculate population change since the most recent decennial census and produce a time series of estimates of population, demographic components of change, and housing units. The Census Bureau makes available the PEP [API](http://www.census.gov/data/developers/data-sets/population-estimates-and-projections.html) to provide:
   1. National, state, and county total resident population and demographic components of population change
   2. National resident, household, resident plus Armed Forces overseas, civilian, and civilian noninstitutionalized populations by age, sex, race, and Hispanic origin
   3. State and county resident population by age, sex, race, and Hispanic origin
   4. Metropolitan and micropolitan statistical area total resident population and demographic components of population change (Note: metro and micro areas are composed of one or more whole counties or equivalent entities. Producing metro and micro area population estimates involves the aggregation of the appropriate county-level population estimates.)
   5. City, town, and other subcounty area total resident population
   6. National, state, and county housing units
4. The Census Bureau also provides Population Projections, which are similar but distinctly different than Population Estimates. Population projections are estimates of the population for future dates. Projections illustrate possible courses of population change based on assumptions about future births, deaths, net international migration, and domestic migration. The Census Bureau makes this [API](http://www.census.gov/data/developers/data-sets/population-estimates-and-projections.html) available for Population Projections.
5. *Shapefiles:*
6. [Census Bureau CBSA and MSA Shapefiles](https://www.census.gov/geo/maps-data/data/tiger-line.html)

***User Stories and Sample Questions:***

Analysts, Journalists, Executives and average citizens are often limited in their questions and research by the data available to answer them. It is common to spend 75% of one’s time locating, downloading, cleaning, and standardizing the relevant datasets—leaving very little time and resources for the important work of developing a comprehensive answer.

This product:

1. Will enable users to assemble and download data from multiple, independent data sources.
2. Will integrate datasets into a single geospatial l and/or time-based interface, making it possible to aggregate previously independent data with a single query.

From the initial loading of data specified above, users can quickly answer questions such as:

1. *Where is the highest population of Legal Permanent Residents in the U.S. today?*
2. *How many Immigration Naturalizations were conducted from 2009 through 2013 in New York?*
3. *What was the average compensation for a Plumber and how many Alpacas were there in Virginia in 2010?*
4. *Where is the largest crop of wheat in the U.S.?*
5. *How many Chickens are there in Washington DC?*
6. *Contrast the estimated population of cows versus humans in Oklahoma.*
7. *Where is the highest population of Armed Forces personnel in the U.S.?*
8. *What state has the lowest housing units and the highest population of pigs?*
9. *Differentiate the number of male humans with the number of llamas in Colorado.*
10. *Compare Computer Programmer Salaries with acres of blackberries across the U.S.*