The learning objective of this assignment is to have you develop a complete, cohesive and cogent set of visualizations to convey meaningful insights regarding the nature and impact of the Great Recession (Dec 2007-Jun 2009) on the US economic environment. Use can use data from North Carolina, Massachusetts, Florida, and California as examples for your discussion to manage scope.

Specific objectives include:

* 1. Build experience working with a variety of different data sources, formats, etc
  2. Develop visualizations that explore multiple aspects of a problem context.
  3. Group visualizations into dashboards that inform a specific aspect of the problem context.
  4. Link visualizations and dashboards into Tableau Stories that describe the impact and the nature of recovery of the US socio-economic landscape.

Resources:

Tableau Resources:

Use the techniques discussed in the Tableau Learning Modules to prepare visualizations to accompany your interpretation. A highly recommended resource (before you begin this activity) is to view videos specific to design, creating and formatting Dashboards available at [Learning Tableau - Dashboards. (Links to an external site.) (Links to an external site.)](https://www.tableau.com/learn/tutorials/on-demand/getting-started-dashboards-and-stories?product=tableau_desktop+tableau_prep&version=tableau_desktop_2018_3+tableau_prep_2018_2_1&topic=dashboardsstories&signin=b36ce0872ad7d52322e13d3b44eb6f4c)

Data Resources:

The data sources you can use include (but are not limited to):

* + - 1. A large volume of data on different aspects of the housing market is available from Zillow ([https://www.zillow.com/research/data/ (Links to an external site.) (Links to an external site.)) (Links to an external site.)](https://www.zillow.com/research/data/). Data files including time series describing median home prices and rental rates may be of particular interest.
      2. Information on personal income, unemployment rates, SNAP, benefits, people in poverty, and a variety of other socioeconomic indicators is available at Geo Fred ([https://geofred.stlouisfed.org/ (Links to an external site.)](https://geofred.stlouisfed.org/)). When working with Geo Fred, select the data type and units before downloading since these selections affect the data in the download. Information on how to get data from FRED is available at [https://fredhelp.stlouisfed.org/#fred-data-how-can-i-find-data-on-fred (Links to an external site.)](https://fredhelp.stlouisfed.org/#fred-data-how-can-i-find-data-on-fred)
      3. Much of the source data is available at the Bureau of Labor Statistics ([https://www.bls.gov/data/  (Links to an external site.)](https://www.bls.gov/data/)) and the Bureau of Economic Analysis ([https://www.bea.gov/data (Links to an external site.)](https://www.bea.gov/data)). These data sources might be useful for this activity.

Requirements:

Use at least 4 visualizations on your dashboard to tell your story. Annotate liberally and use the dashboard to highlight the explanations and themes you want to communicate. In your dashboard, look to communicate time series analysis and trends from related data from multiple sources, which together communicate and explain (not correlate or cause) the concurrent or cascading nature of the economic phenomenon, both national and individual - macro and micro.

To Do:

1. **Process your Data:**

Collect all your data from the sources. Clean and process the data for analysis and developing visualizations. Keep an eye on the nature of the story you want to tell from the data - form initial hypotheses/ideas and support them with evidence from the data/ Visualizations.

You should leave this phase with 3-5 stories (per data source) you want to tell, or 3-5 questions (per data source) that you want to answer in your narrative.

Expect to come back to this step a few times during the process of completing your assignment.

**Milestone: Expect to make significant progress no later than 01/28/2020**

1. **Build your visualizations:**

Build your visualizations in the form of charts and graphs in tableau. While not required, I suggest you build individual visualizations along each of the dimensions/questions you have identified.

Use the resources in your tableau modules to select appropriate types of charts.

Use annotations liberally to identify the *takeaway* from each visualization you develop. These should answer questions like: *What is the visualization telling the audience? What do you want the audience to take away from the visualization?*

Generally speaking, you should expect to around 3 visualizations for each major theme of the story you are trying to tell. This is a VERY ROUGH guideline – not a requirement by any means. The idea is to communicate the central themes and trends you see in the data and communicate the themes through the annotated visualizations.

**Milestone: Expect to make significant progress no later than 02/04/2020**

1. **Build Dashboards:**

Build dashboards to communicate answers in the form of visualizations for each of the **central themes** of the context that you are investigating.

These include, but are not limited to, what and when was the great recession and how do we know? What are the real estate data trends and impacts, micro-economic impacts, macro-economic impacts, social impacts, etc. of the Great Recession?

Collect the visualizations you have developed in step 2 to build the dashboards. Be mindful that you may need to add visualizations and additional data to convey a cogent picture of the central theme that you are building the dashboard for.

Think about what you want to communicate and how you want your audience to interact with your dashboard(s).

**Milestone: Expect to make significant progress no later than 02/11/2020**

1. **Collect dashboards into stories:**

Collect your dashboards into stories to communicate your overall perspective of the nature and impact of the great recession. Here you should consider the collective and multi-dimensional narrative your dashboards are conveying.

Package your Tableau data into a single Tableau WorkBook file. **Please Note:** This is NOT A TABLEAU WORKBOOK FILE). For information on how to create a packaged workbook file, please see: [https://help.tableau.com/current/pro/desktop/en-us/save\_savework\_packagedworkbooks.htm (Links to an external site.)](https://help.tableau.com/current/pro/desktop/en-us/save_savework_packagedworkbooks.htm)

Collect your narratives and related annotations into a report (Word or PDF) and communicate the process and findings.

**Deadline: Submit your assignment no later than 6 pm on 02/18)**

To Submit:

You are required to submit the following on Canvas:

* + 1. ONE Tableau packaged workbook file (.twbx) (NOT A TABLEAU WORKBOOK FILE). Please see [https://help.tableau.com/current/pro/desktop/en-us/save\_savework\_packagedworkbooks.htm (Links to an external site.)](https://help.tableau.com/current/pro/desktop/en-us/save_savework_packagedworkbooks.htm) for information on how to create a packaged workbook file.
    2. An MSWord or PDF Document that contains **an annotated narrative**of your insights and inferences about the impact of the recession on leading and relevant economic indicators. (It is generally expected that your narrative will be between 5 to 10 pages long - WITH annotated tables and figures).

Extra Credit (10%)

The extra credit section is not required and will not be considered in your grade unless significant progress (B or higher) is demonstrated on the regular assignment. The extra credit component essentially requires that you add additional relevant and interesting dimensionality to the visualizations that you have developed for the assignment.

It is generally expected that you will do **one** of the extra-credit dimensions, but this is not a limitation - you may attempt as many of the extra credit questions as you wish. However, partial work on multiple extra-credit questions will not result in the accumulation of points.

* + 1. An interesting (not required but counts for 10% extra credit) aspect of this assignment is to include information regarding the health impacts on society in these states (Available at [https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/GV\_PUF (Links to an external site.)](https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/GV_PUF)).
    2. Another interesting (not required but counts for 10% extra credit) aspect of this assignment is to include information regarding the health impacts on society in these states (Available at [https://www.cdc.gov/BRFSS/ (Links to an external site.)](https://www.cdc.gov/BRFSS/); <https://catalog.data.gov/dataset?tags=mental-health>