Google Fusion Tables for Data Visualization

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Introduction

- Launched in 2009

- This is a web application to collect, visualize, and share data

- Originally designed for organizations and communities for data management, internal/external sharing, and collaboration

Overview

- Stores tabular data

- Visualize large data table

- Quickly summarize and filter large data table

- Create different types of charts and maps
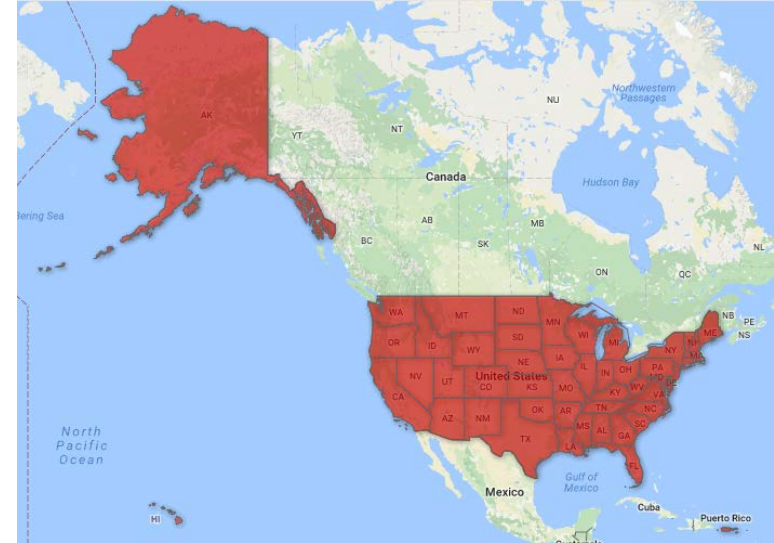
- Publish and share

Features

- Easy-to-use

- Free of cost

- Integration of Google Drive- a cloud-based storage platform from Google (requires a Google account)

- Allows data management, visualization, and collaboration between users

- Automatic geocoding capabilities from text inputs

- Sharing and privacy options- you choose what to share

Data Management and Visualization

- Import new table
  - *Simple input files (CSV, spreadsheet, txt, KML, Google Sheets)*
  - *Import from publicly available data on the web*
- Visualize instantly, customize charts and maps
- Merge data with other people's data, keep data up-to-date, and build applications via Fusion Tables API using other public data sets
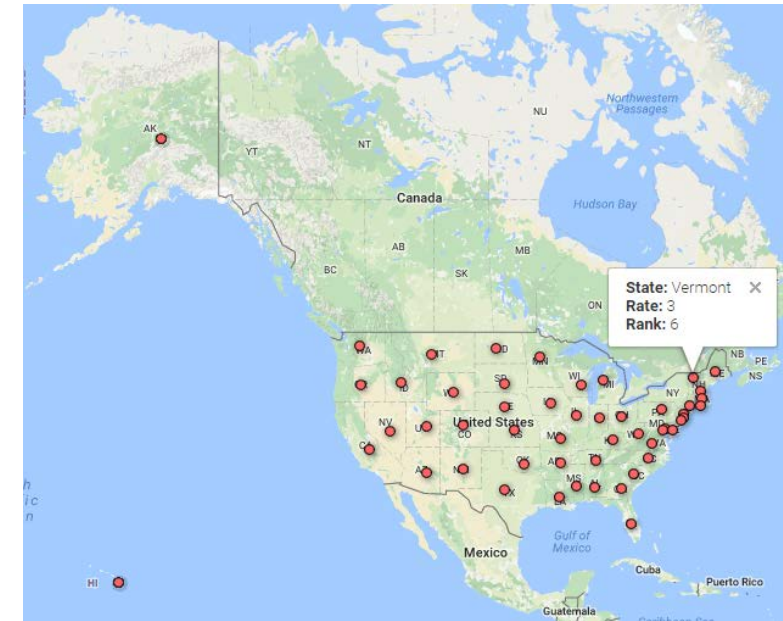
How does it work? An Example

- Objective: Map unemployment rate by state in the United States using CSV and shapefile inputs

- Requires authorization of Google Fusion Table in Google Drive

- Shapefiles can be uploaded after converting to Google Fusion Table format (e.g., using www.shpescape.com)

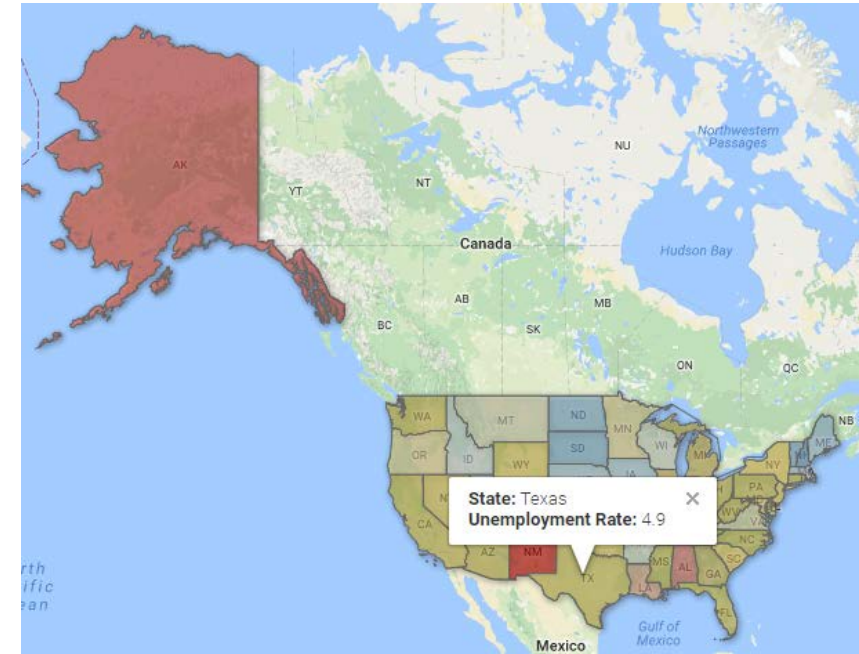- Once uploaded, Google Fusion Table creates a map using shapefile

How does it work? An Example

- Upload the .csv file from local computer

- Once uploaded, it can automatically geocode the states- can be visualized as point data in a map

- Clicking on the point map shows the information for each state

How does it work? An Example

- Next step is to merge the point unemployment data to the state polygon table

- The merged map can be configured using different fill color and gradients or ranges

- Publish- share the map in the web

- Fusion Table Layer in Google Maps API provides the HTML and JS code to include the map in any website

Google Fusion Tables API

- This is a RESTful API for convenient management of Fusion Tables

- The API allows using HTTP requests

- Performs same tasks as the web application

- Integration of JSON data structures and accessible via RESTful HTTP requests
  - *Client requests to the server and the server responds with actions*

Resources

- Documentation and Support: https://support.google.com/fusiontables/answer/2571232?hl=en

- Fusion Tables REST API: https://developers.google.com/fusiontables/

- Gonzalez, H., Halevy, A., Jensen, C.S., Langen, A., Madhavan, J., Shaply, R., Shen, W., Google Fusion Tables: Data Management, Integration, and Collaboration in the Cloud, Proceedings of the 2010 ACM SIGMOD International Conference on Management of Data. ACM, 2010