DATA AND
ARTIFICIAL INTELLIGENCE

Tableau 10

# Using Maps in Tableau

# What's In It For Me

At the end of this lesson, you will be able to:

- Describe how to create Geographic Maps with Tableau

- Explain how to use Pan, Zoom, Lasso, and Radial Selection

- Explain how to use Filtering, Map layering, Custom territories

- Modify locations within Tableau

- Understand how to import and manage custom geocoding

- Describe how to use a background image map and geographic search

**Using Maps in Tableau**

Topic 1: Creating Geographic Maps with Tableau
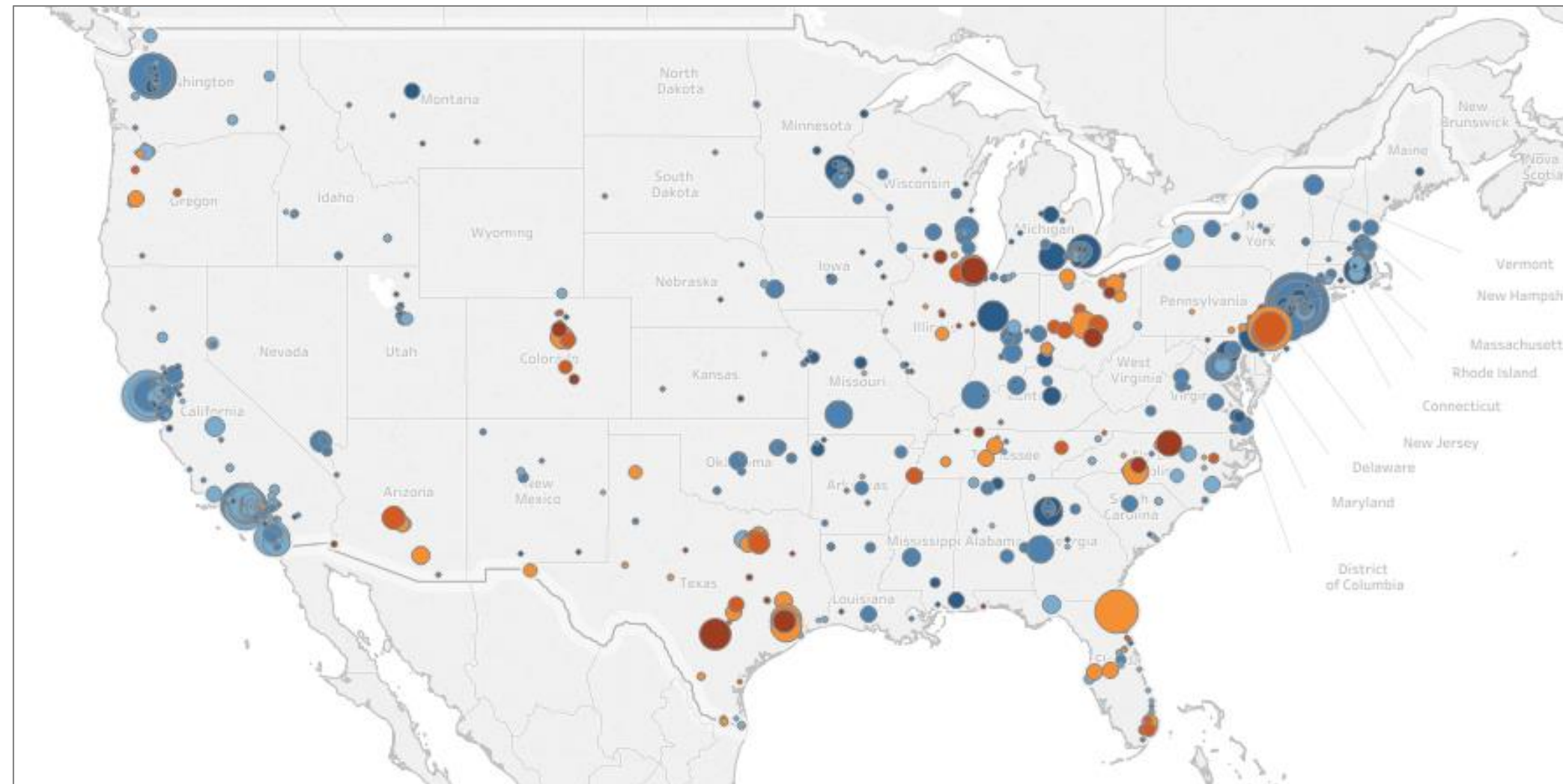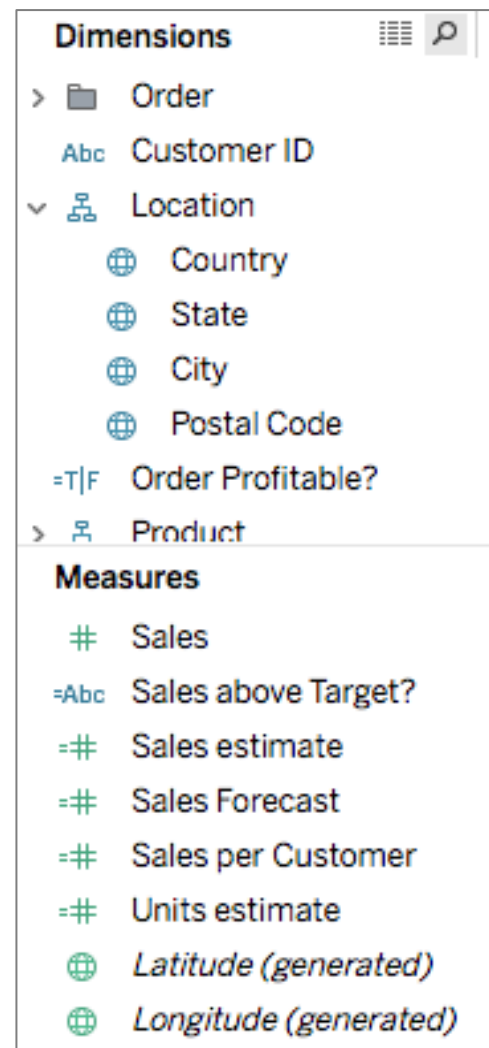
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# Creating Geographic Maps with Tableau

GEOGRAPHIC MAPS

Geographic maps add rich context to your dashboards, allowing the users to easily see patterns in the data.

Example: In the image below, the size of the marks represents Sales.
The user can easily see that there are high sales areas along both the West and East coasts.

# Creating Geographic Maps with Tableau

GEOGRAPHIC MAPS

Tableau automatically identifies some geographic fields within the data (Country, State, City, Postal Code), and also automatically generates latitude and longitude dimensions.
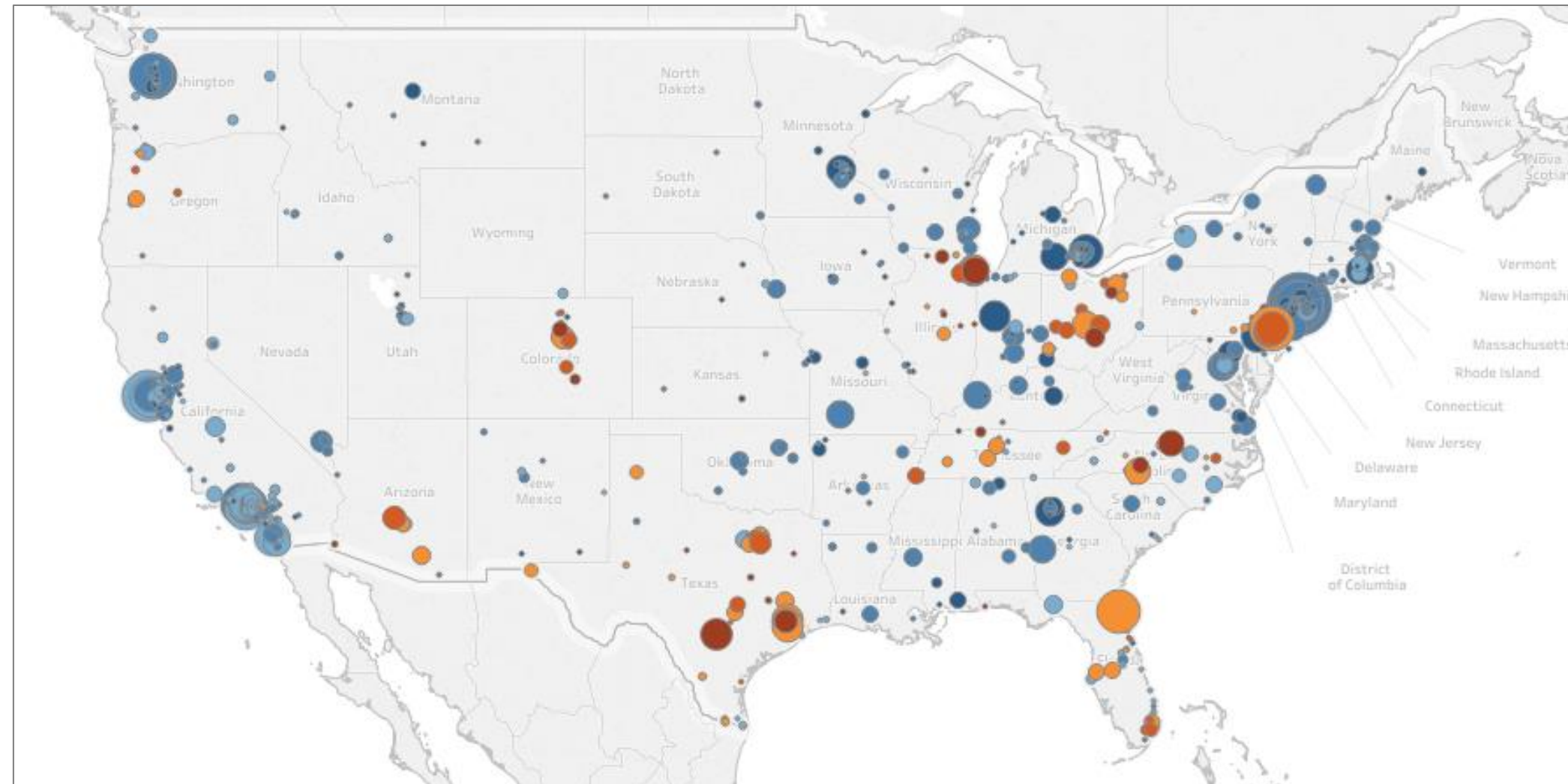
# Creating Geographic Maps with Tableau

## CREATING MAPS

Maps are created by dragging geographic field(s) into the view, then dragging fields on the marks shelf.
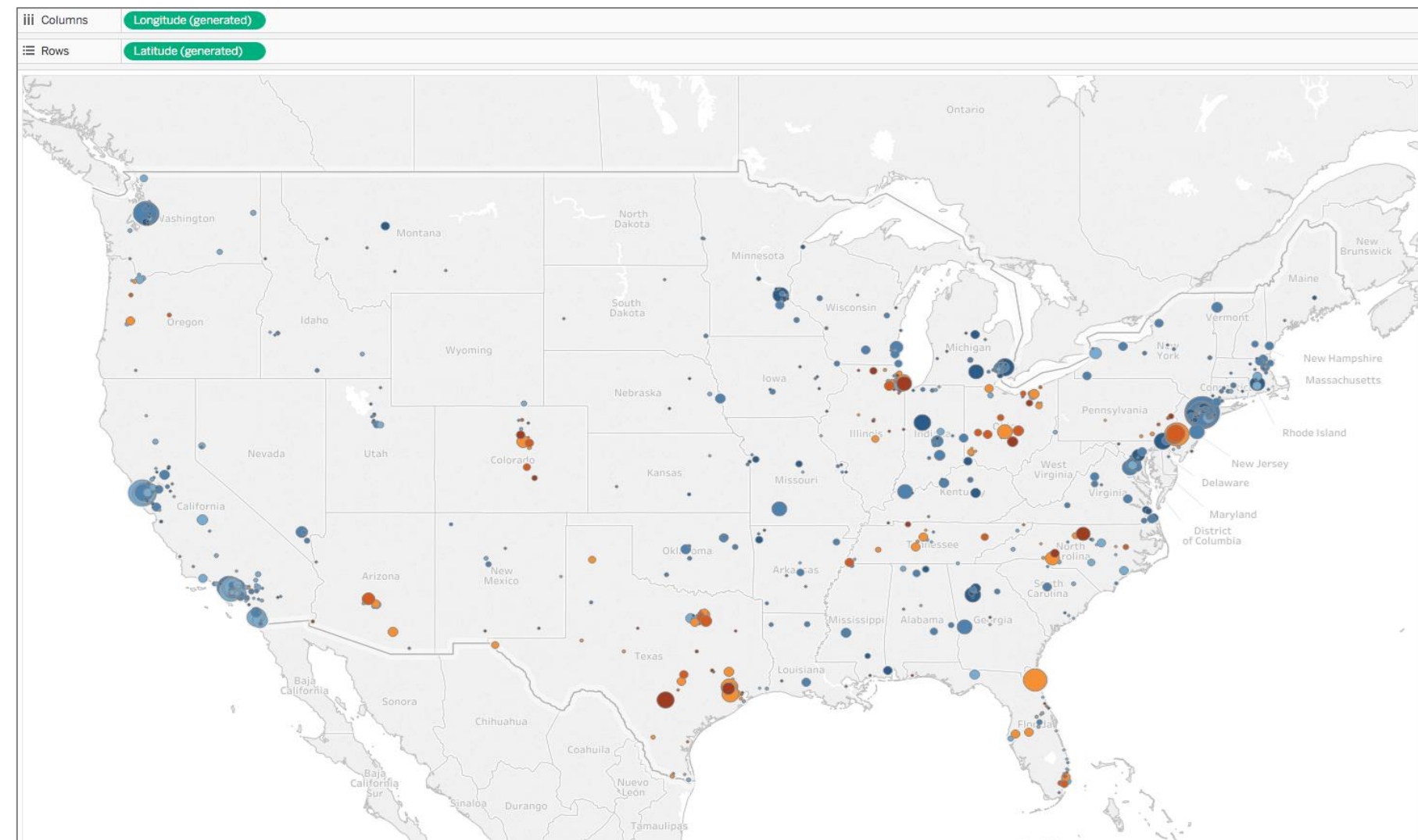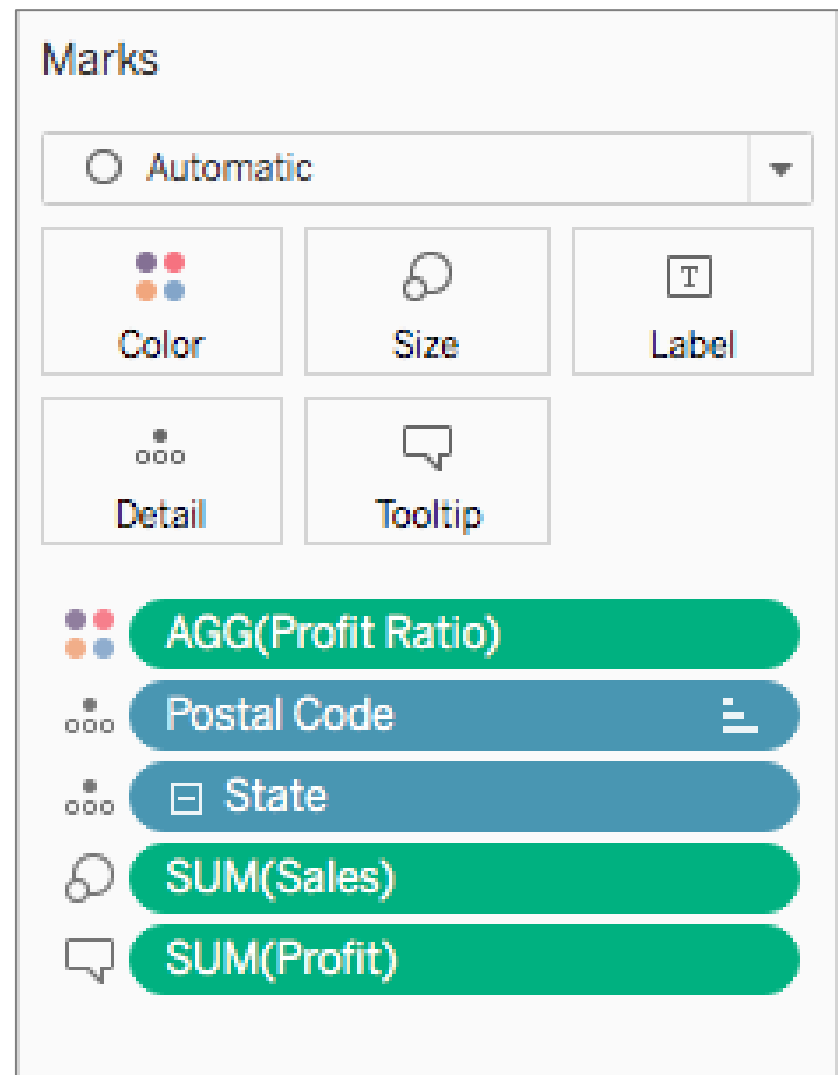
**Using Maps in Tableau**

Topic 2: How to Pan, Zoom, and Select in Tableau

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# How to Pan, Zoom, and Select in Tableau

Tableau allows you to interact with maps in many different ways.

In a map view, a view toolbar and search box appear in the top left corner of the view.
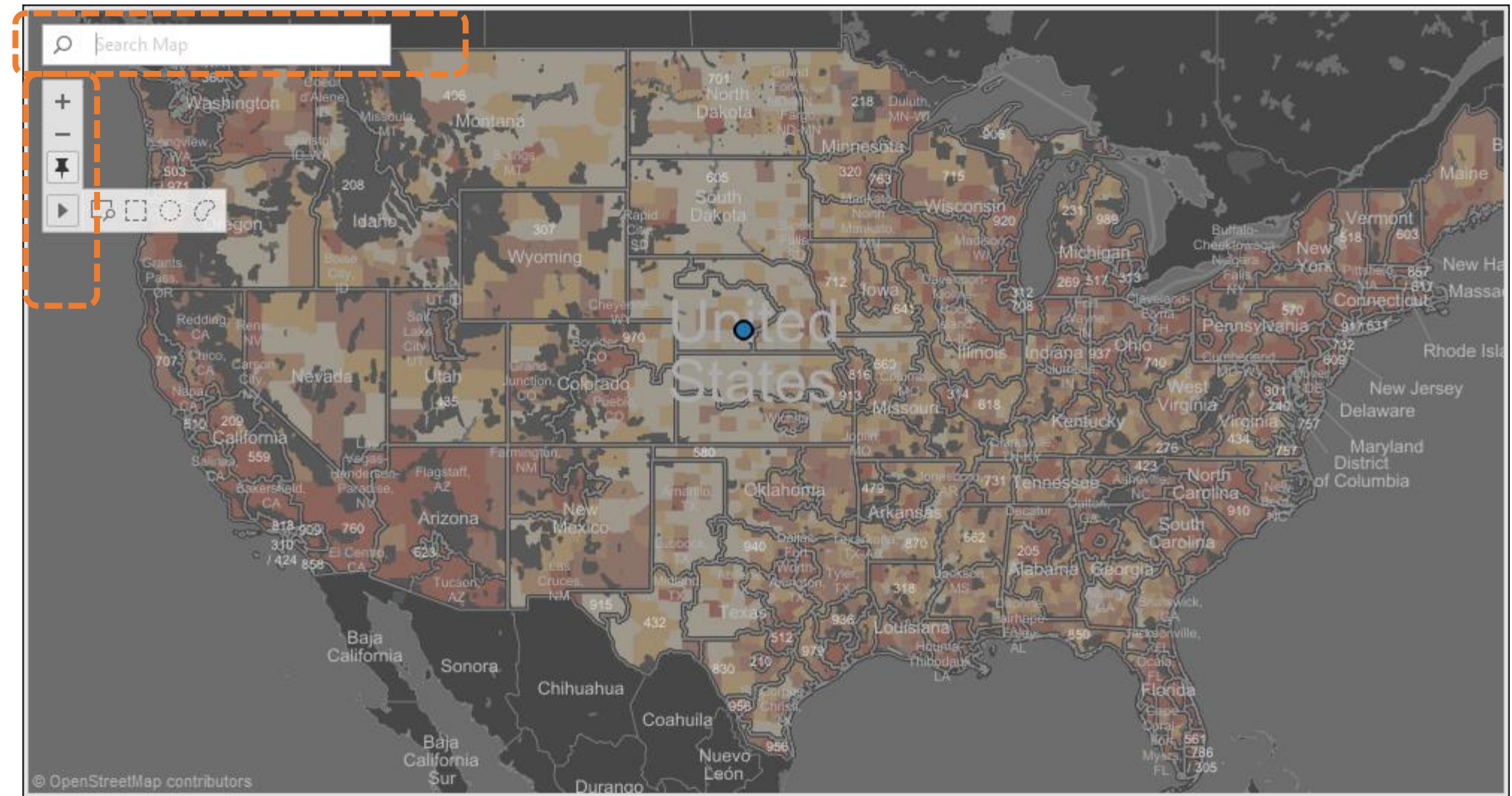
# How to Pan, Zoom, and Select in Tableau

The view toolbar can be used to select marks in a map, pan, and zoom in and out of the map view.

View toolbar

# How to Pan, Zoom, and Select in Tableau
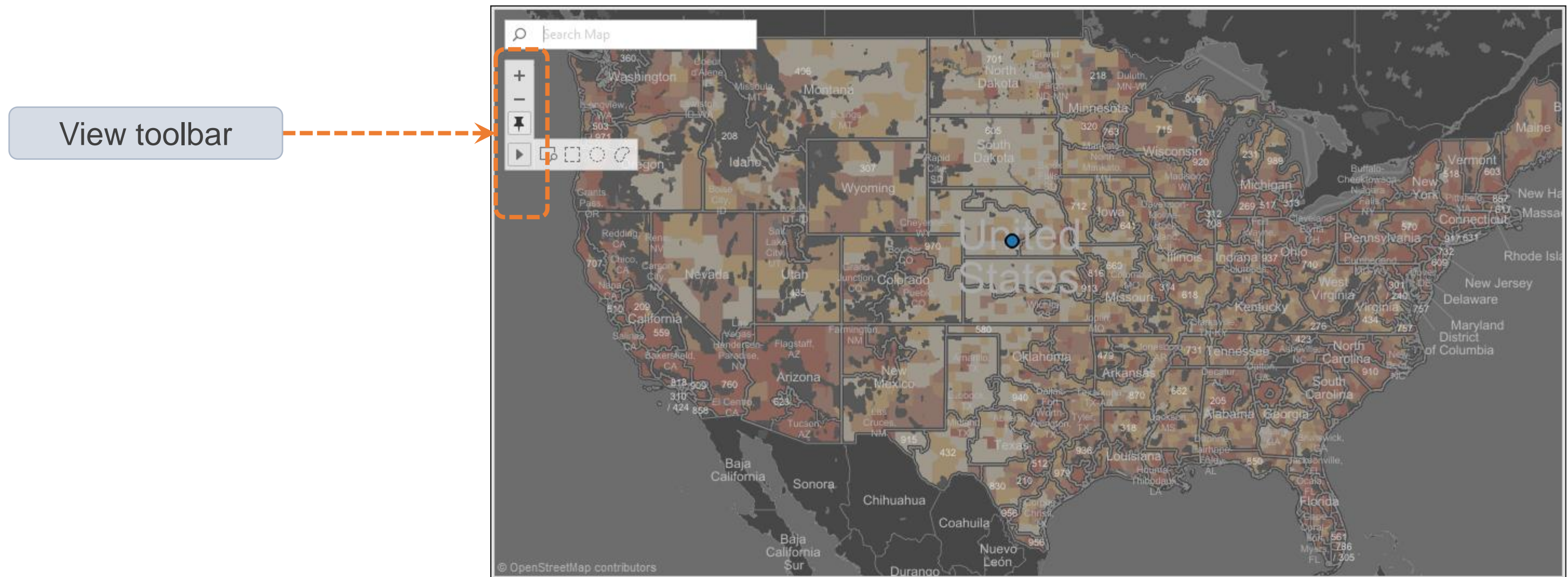
ZOOM AREA

To zoom in to a specific area of the view, select the zoom area option on the view toolbar and then drag to create the zoom area.

Zoom to a specific area
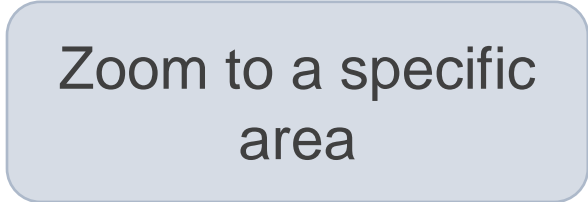
# How to Pan, Zoom, and Select in Tableau

After you zoom in or out, the axes are fixed to the zoomed range. To reset the axes to fit the entire view, use the reset view button.

Reset the view
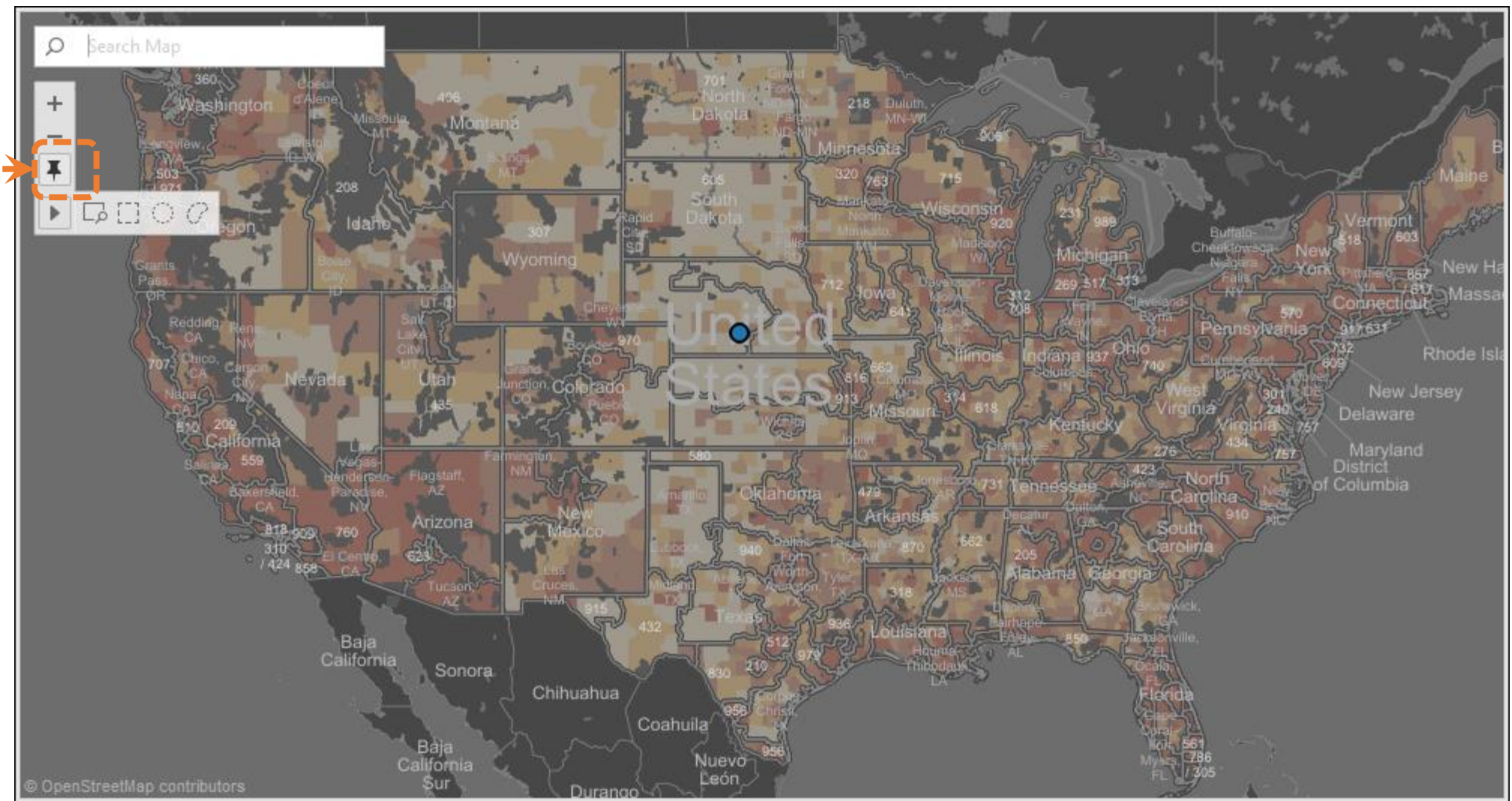
# How to Pan, Zoom, and Select in Tableau

PAN

Hold down Shift and then drag across the view to navigate the map within the view.
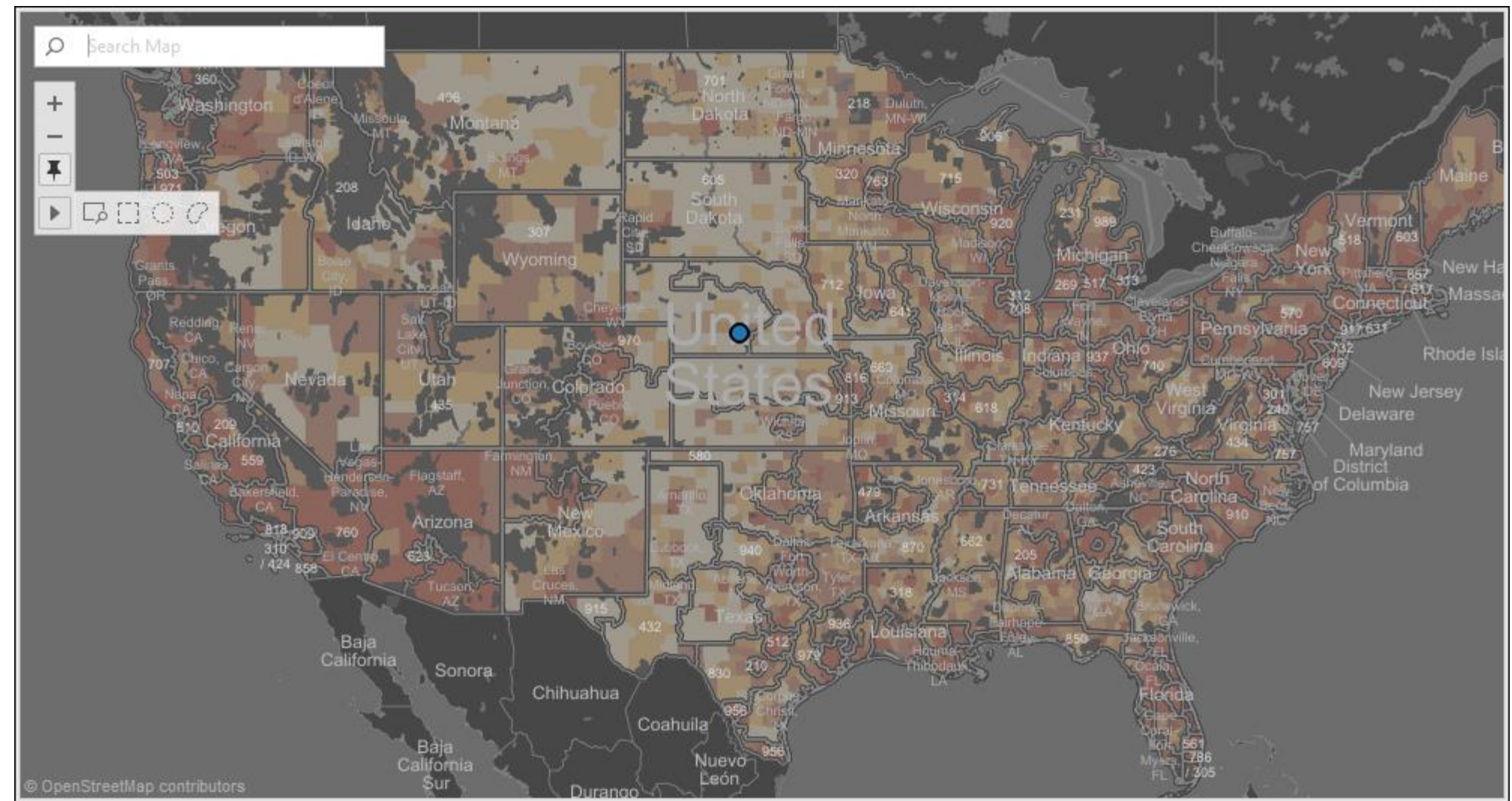
# How to Pan, Zoom, and Select in Tableau

RECTANGULAR SELECTION

The Rectangular tool may not show up in the view toolbar as it is the default tool.

To use this tool, you can drag the Rectangular tool across the view.

Rectangular selection
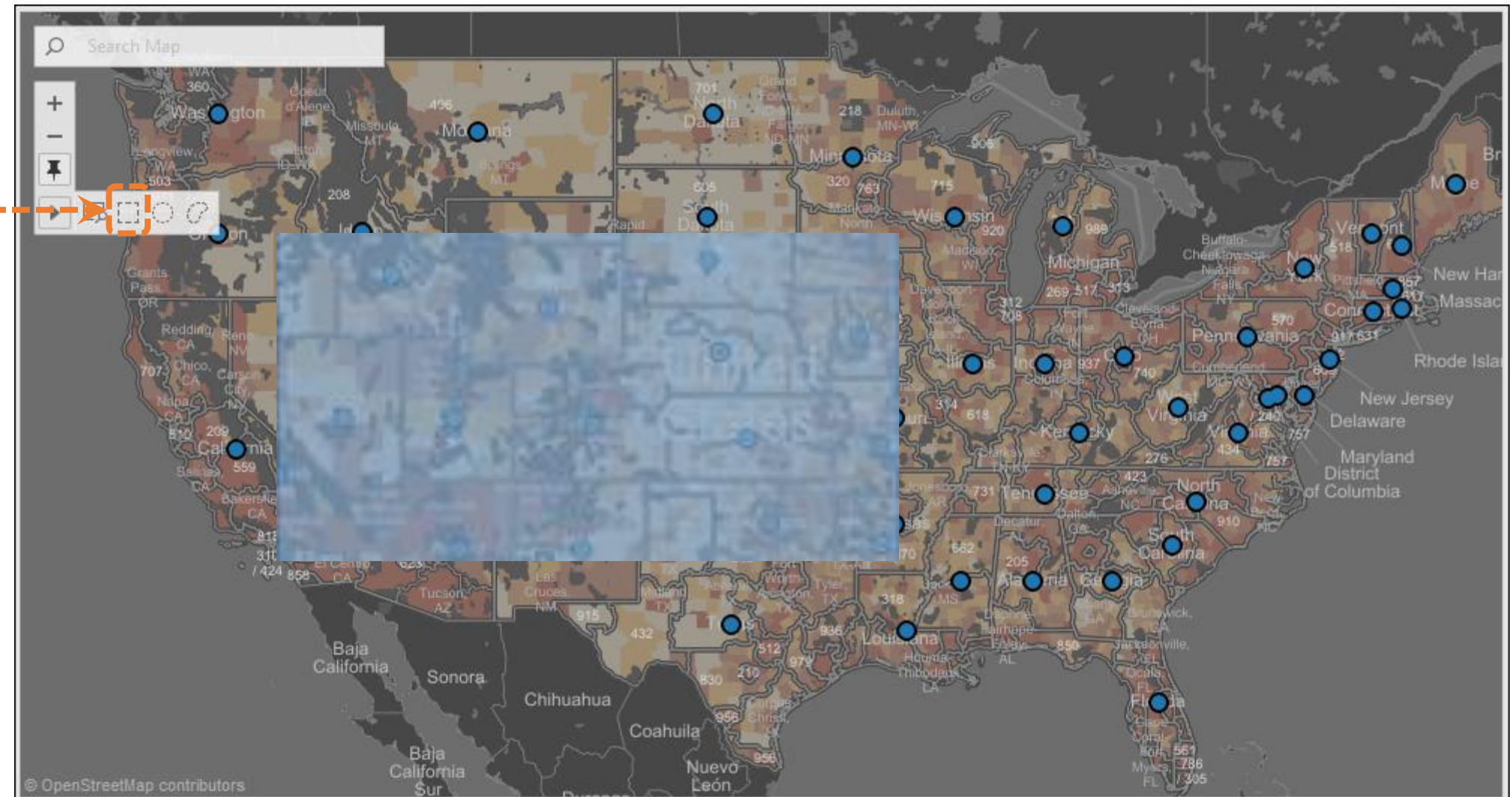
# How to Pan, Zoom, and Select in Tableau

The Radial tool points out the marks in a circular area.



Radial selection
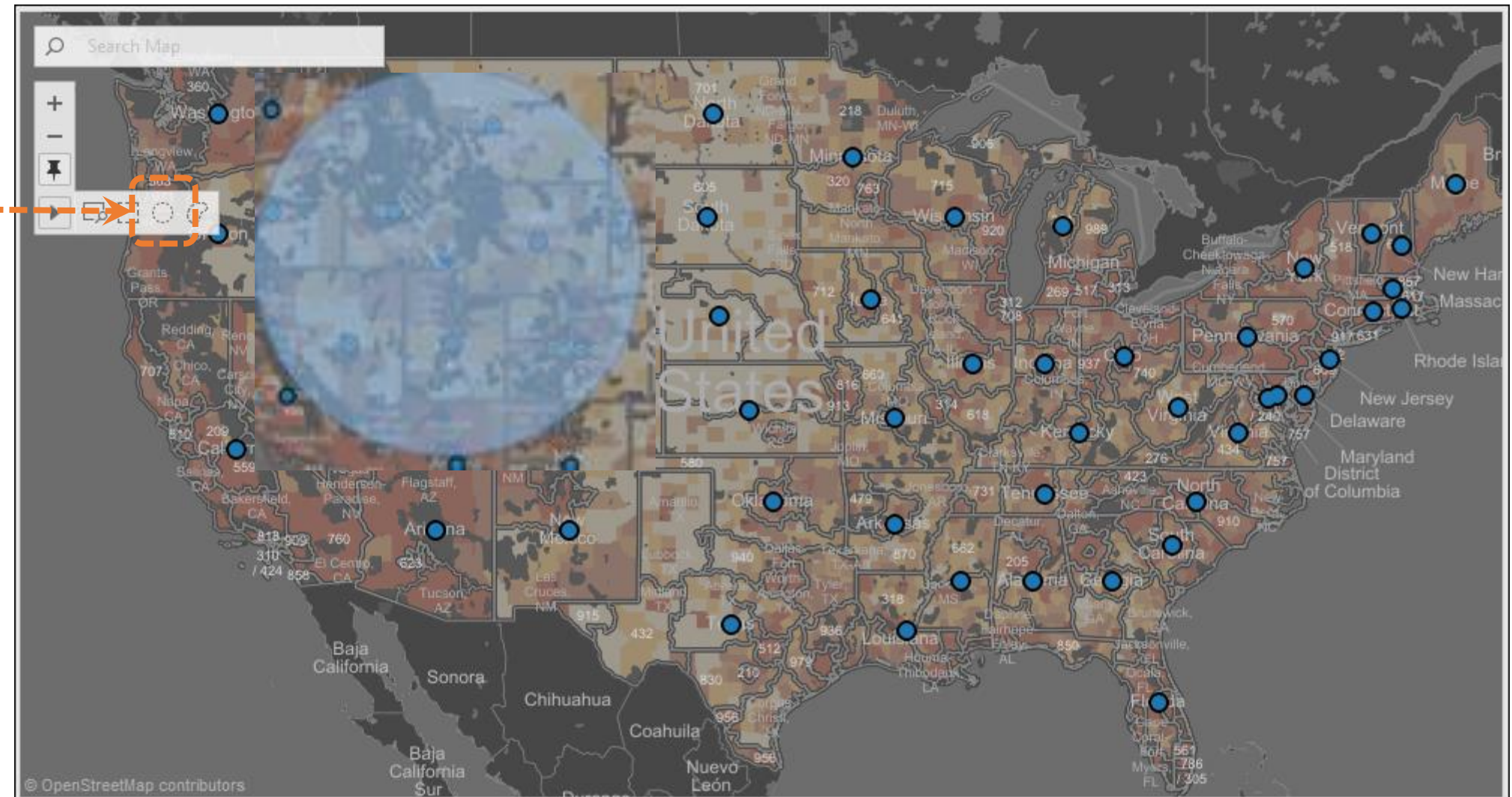
# How to Pan, Zoom, and Select in Tableau

## LASSO SELECTION

Unlike the Rectangular and Radial tool, the Lasso tool enables you to select various marks by drawing a freehand shape over them.

The Lasso tool is effective when you want to add specific marks and remove other marks in the view.

Lasso selection

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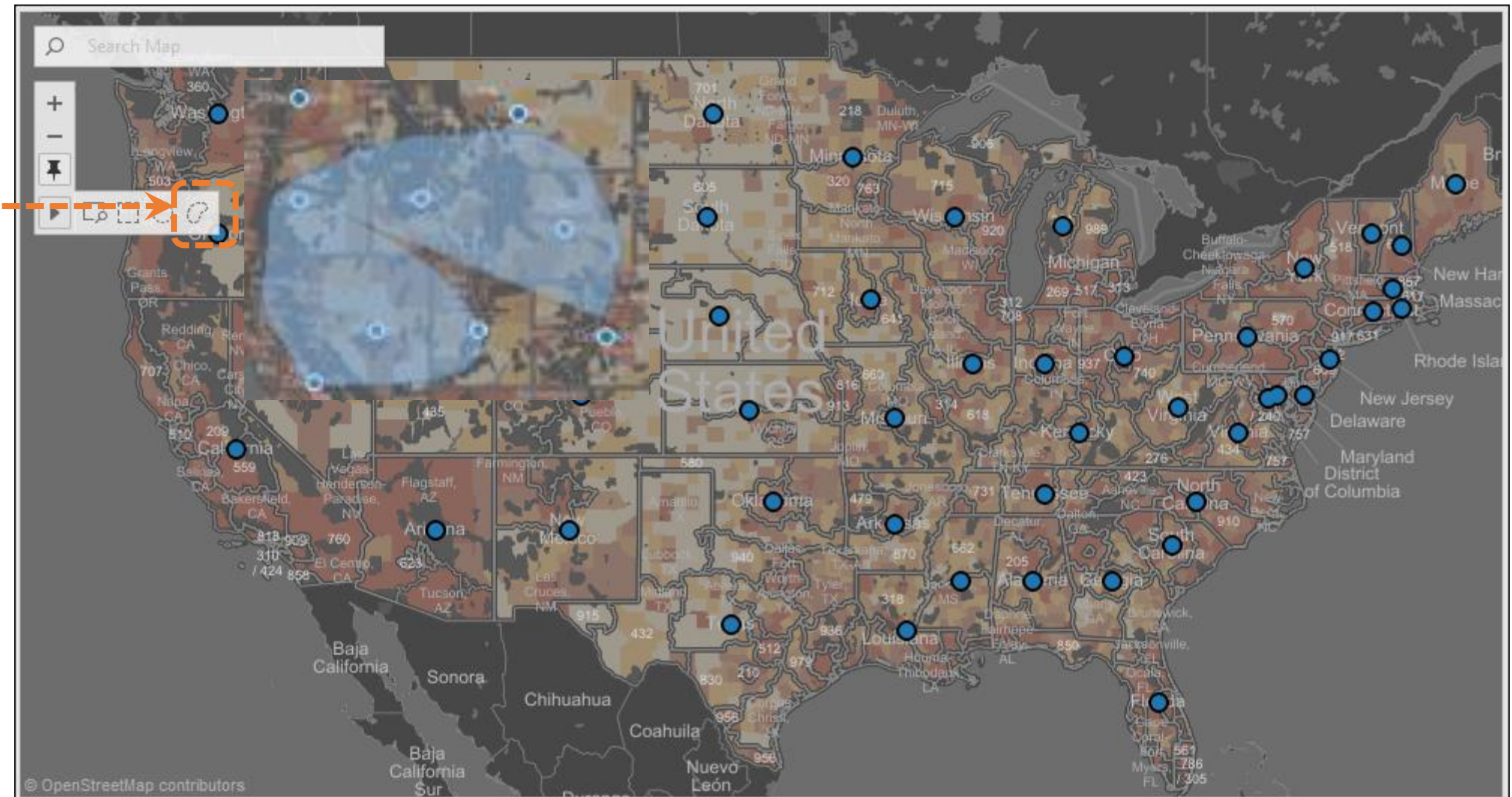
**Using Maps in Tableau**

Topic 3: Map filters, layers, custom territories, and modifying locations

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# Using Maps to Filter Data

Create actions that filter the data in the dashboard to reflect the selected member.
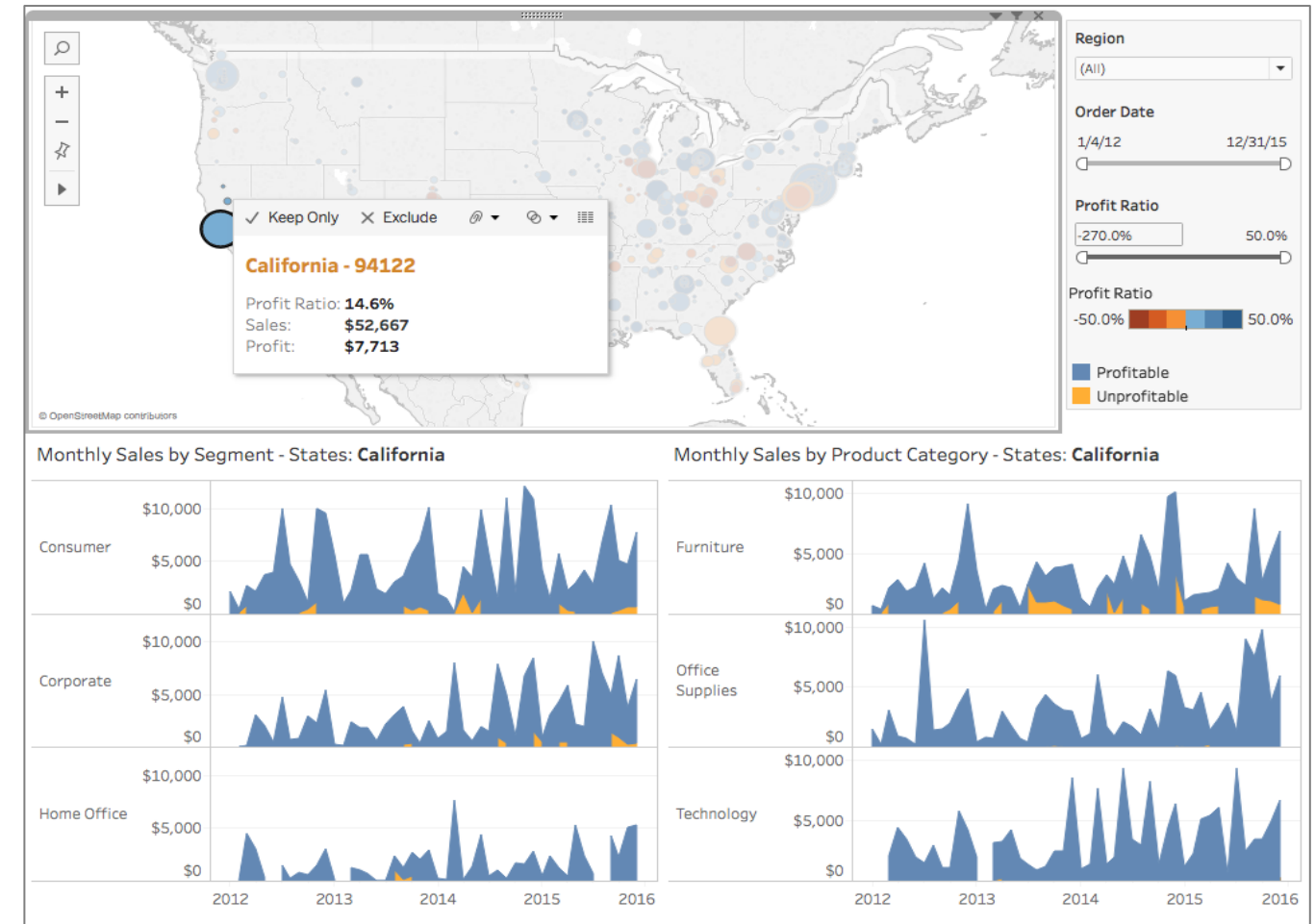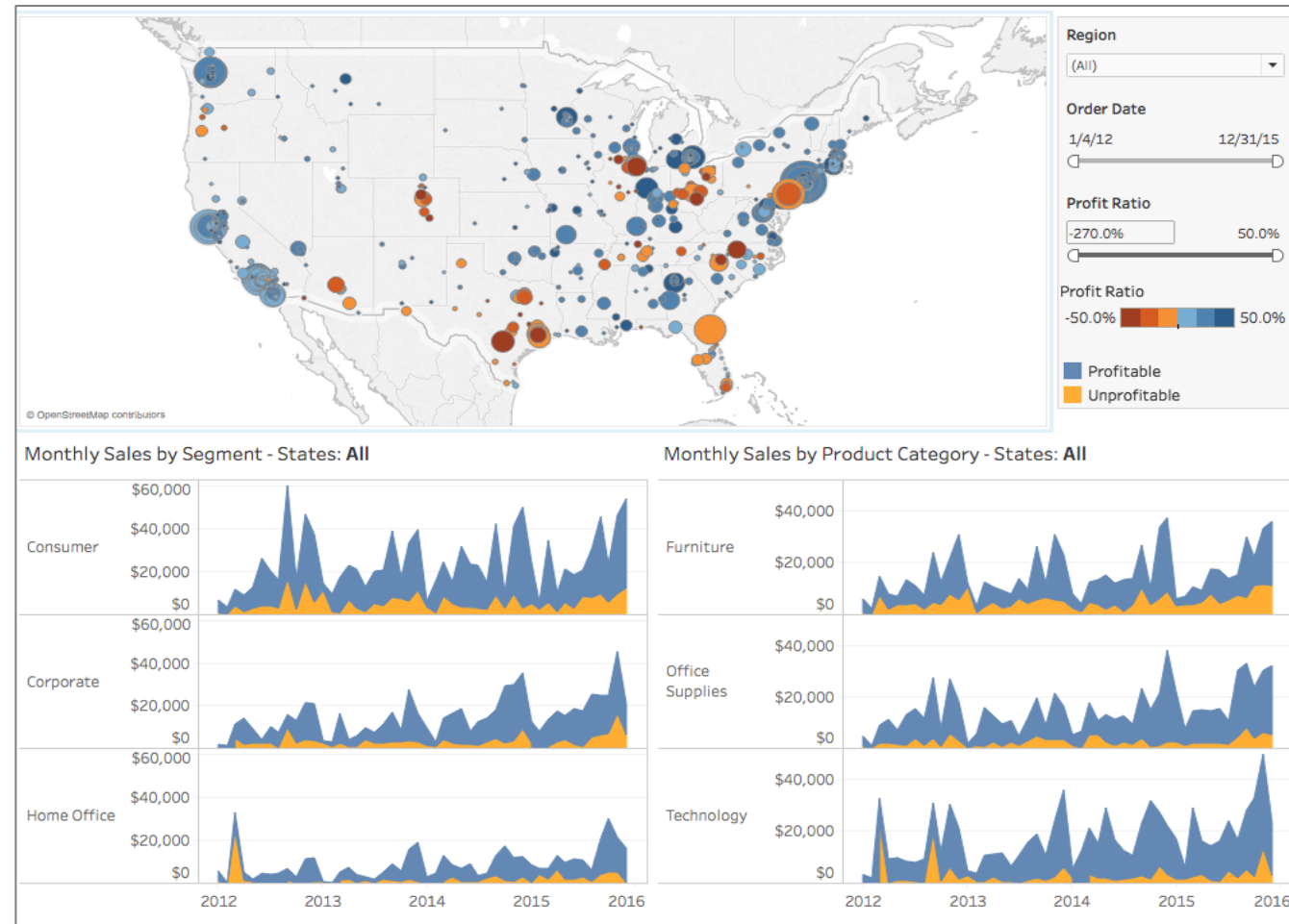
# Map Layering

Use the Map Layers pane to change the appearance of the map:
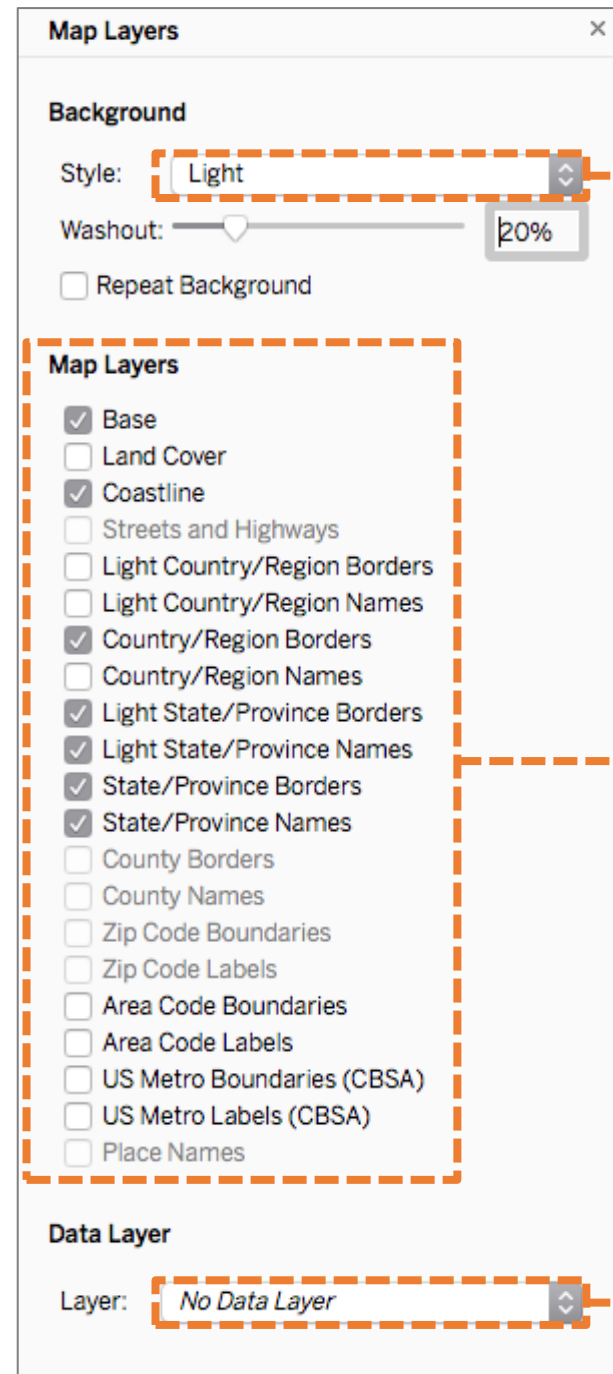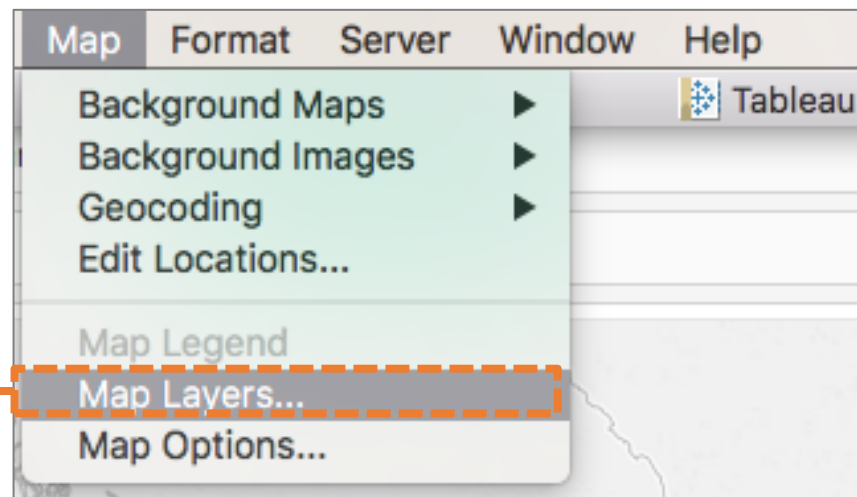
Change the map background style

Hide and show map layers, such as land cover or country borders

Add data layers

## Map Layers

### Background

Style: Light

Washout: 20%

☐ Repeat Background

### Map Layers

☑ Base
☐ Land Cover
☑ Coastline
☐ Streets and Highways
☐ Light Country/Region Borders
☐ Light Country/Region Names
☑ Country/Region Borders
☐ Country/Region Names
☑ Light State/Province Borders
☑ Light State/Province Names
☑ State/Province Borders
☑ State/Province Names
☐ County Borders
☐ County Names
☐ Zip Code Boundaries
☐ Zip Code Labels
☐ Area Code Boundaries
☐ Area Code Labels
☐ US Metro Boundaries (CBSA)
☐ US Metro Labels (CBSA)
☐ Place Names

### Data Layer

Layer: No Data Layer

| Map | Format | Server | Window | Help |
|-----|--------|--------|--------|------|
| | | | | 🔷 Tableau |

Background Maps ▶
Background Images ▶
Geocoding ▶
Edit Locations...
Map Legend
Map Layers...
Map Options...

# Creating Custom Territories

Custom territories can be useful when presenting information for multiple countries, states, cities, etc.

Custom territories are selected manually, or via a calculated field, and a group is created from that selection.
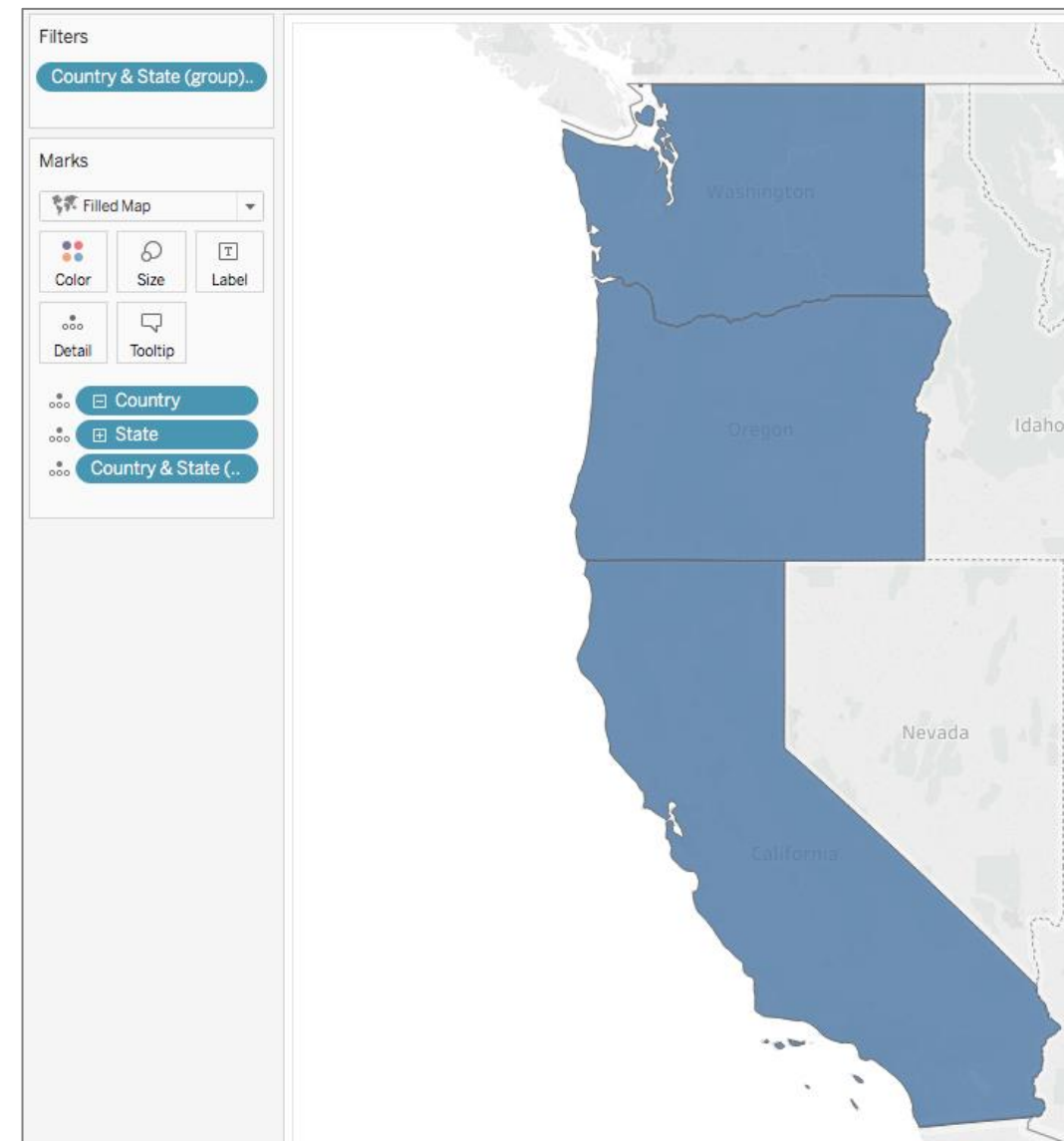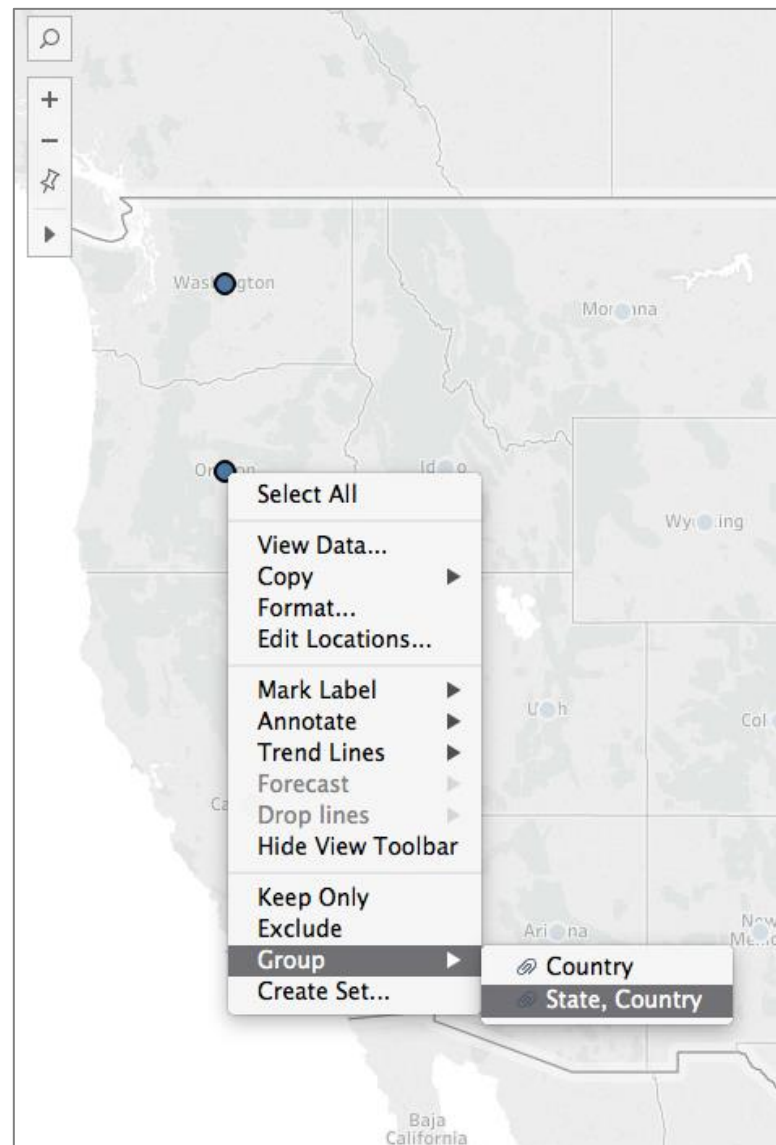
# Modifying Locations within Tableau

You can manually set a default location if Tableau fails to automatically recognize the location names.

The location names in your dataset may exist in multiple countries or states. For example, Clark County exists in both Nevada and Washington. In such scenarios, Tableau fails to geocode these locations.

You can modify such locations to help Tableau identify the country or state your data is referring to.
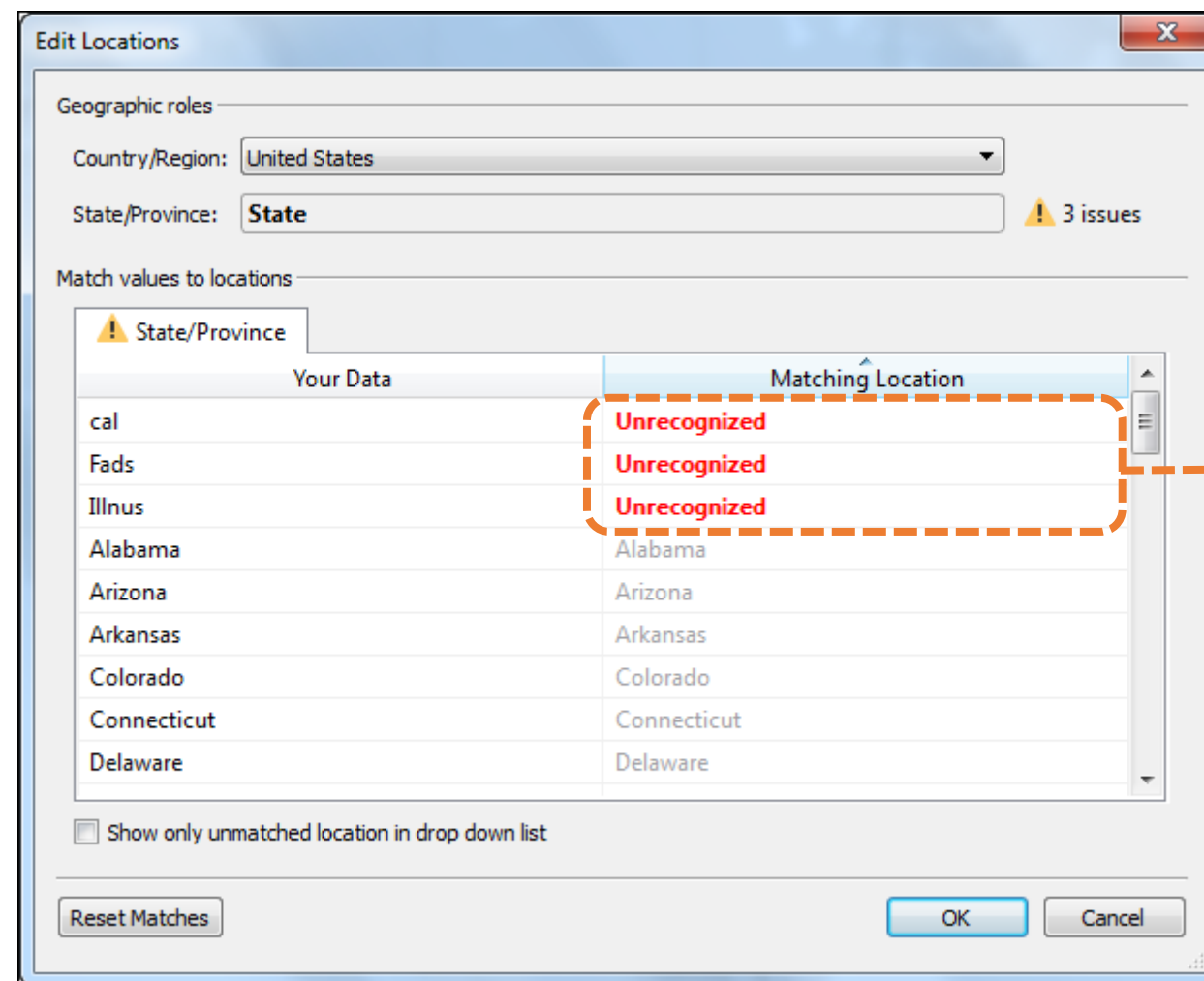


Select the state that your data refers to

**Using Maps in Tableau**

Topic 4: Import and Modify Custom Geocoding

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# Importing and Modifying Custom Geocoding

Tableau automatically recognizes and geocodes your geographic data.

**tableau**

**1** At times, Tableau fails to assign geographic roles to your data.

**3** The geocode files should be .csv files that define the hierarchies and locations of your geographic data.

**2** You can import new geographic roles and assign them to the geographic fields in your data.

CSV

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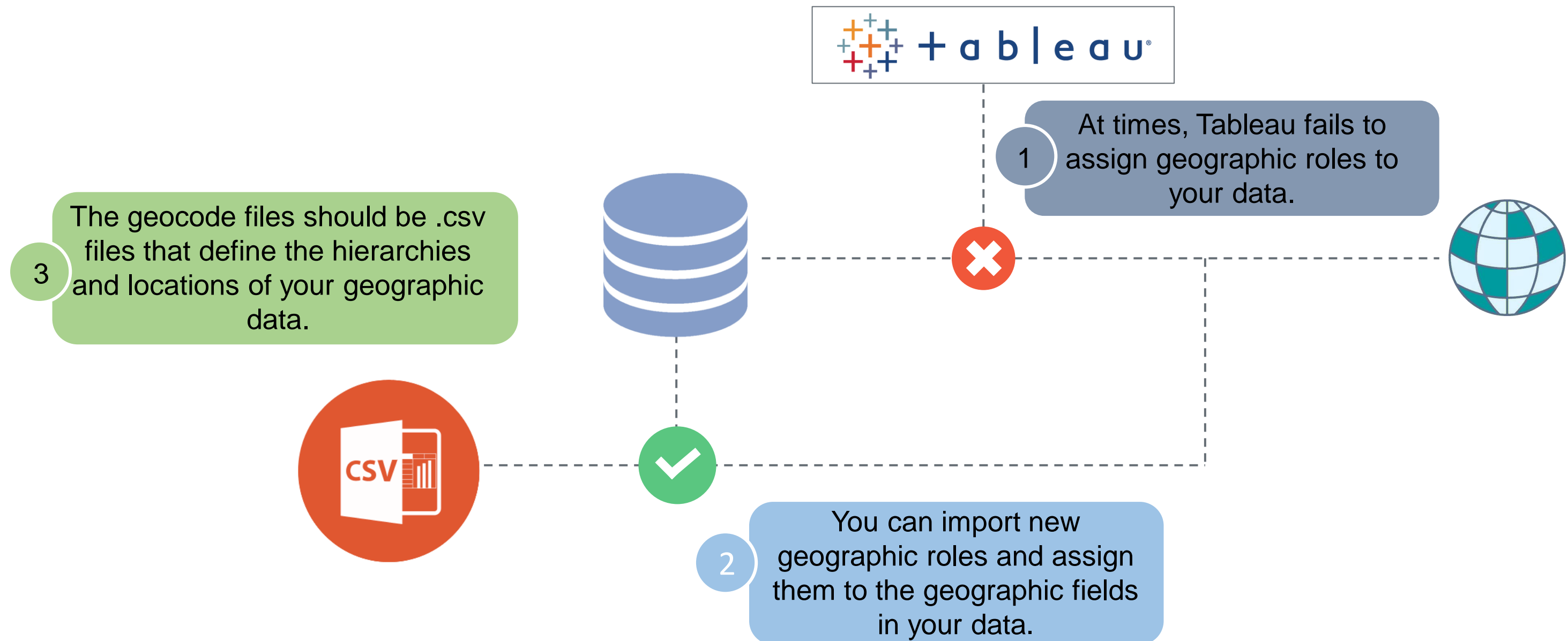
# Importing Custom Geocoding

In this example, the Excel file is imported to display German postal codes in Tableau.

| | A | B | C |
|---|---|---|---|
| 1 | German Post Code | Latitude | Longitude |
| 2 | 99998 | 51.2125 | 10.5625 |
| 3 | 99996 | 51.28335 | 10.575 |
| 4 | 99994 | 51.24165 | 10.675 |
| 5 | 99991 | 51.15 | 10.55557 |
| 6 | 99988 | 51.175 | 10.2917 |
| 7 | 99986 | 51.14443 | 10.4389 |
| 8 | 99976 | 51.2477 | 10.32917 |
| 9 | 99974 | 51.2428 | 10.4501 |
| 10 | 99958 | 51.09585 | 10.7583 |
| 11 | 99955 | 51.17273 | 10.80151 |
| 12 | 99947 | 51.14538 | 10.62537 |
| 13 | 99898 | 50.8333 | 10.5833 |
| 14 | 99897 | 50.8 | 10.6167 |
| 15 | 99894 | 50.86305 | 10.5944 |
| 16 | 99891 | 50.8854 | 10.459 |

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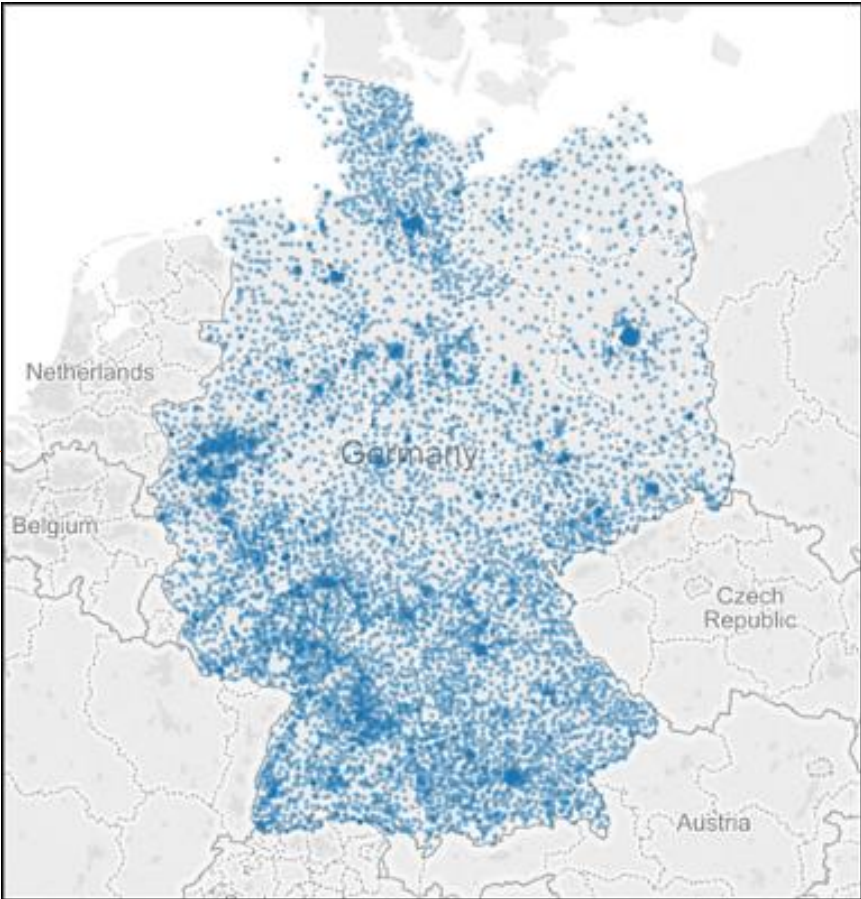
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Topic 5: Using a Background Image

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# Using Background Image

Background Images enable you to use your own custom image to make your Dashboard match your brand or style.

1

Images that you display underneath your data to add more context to your view are called Background images.

2

Background images can be maps or images that correspond to your data.

3

The length and height of your image must be mapped to a set of columns in your dataset.

4

These fields, mapped X and Y, will then be used in the rows and columns shelves to map the image in a view.

# Working with Background Image

In this example, a background image of a cricket field is used and annotated.
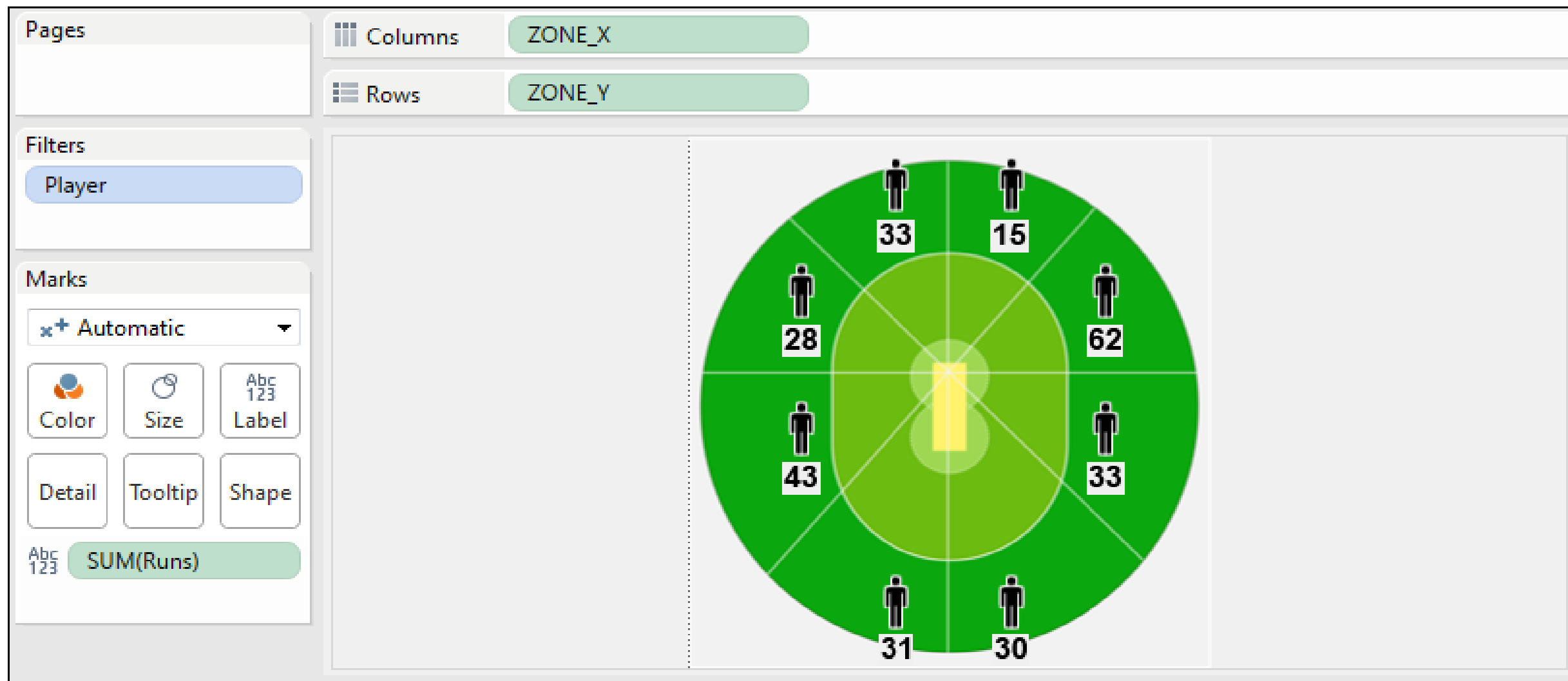
**Using Maps in Tableau**

Topic 6: Explore Geographic Search

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# Exploring Geographic Search

Tableau Map search allows you to search for a specific location in your map view.

The map search suggests possible locations in your view based on location names in your data source.

You can search for the following location types:

Continent

County

Country

City

State or Province

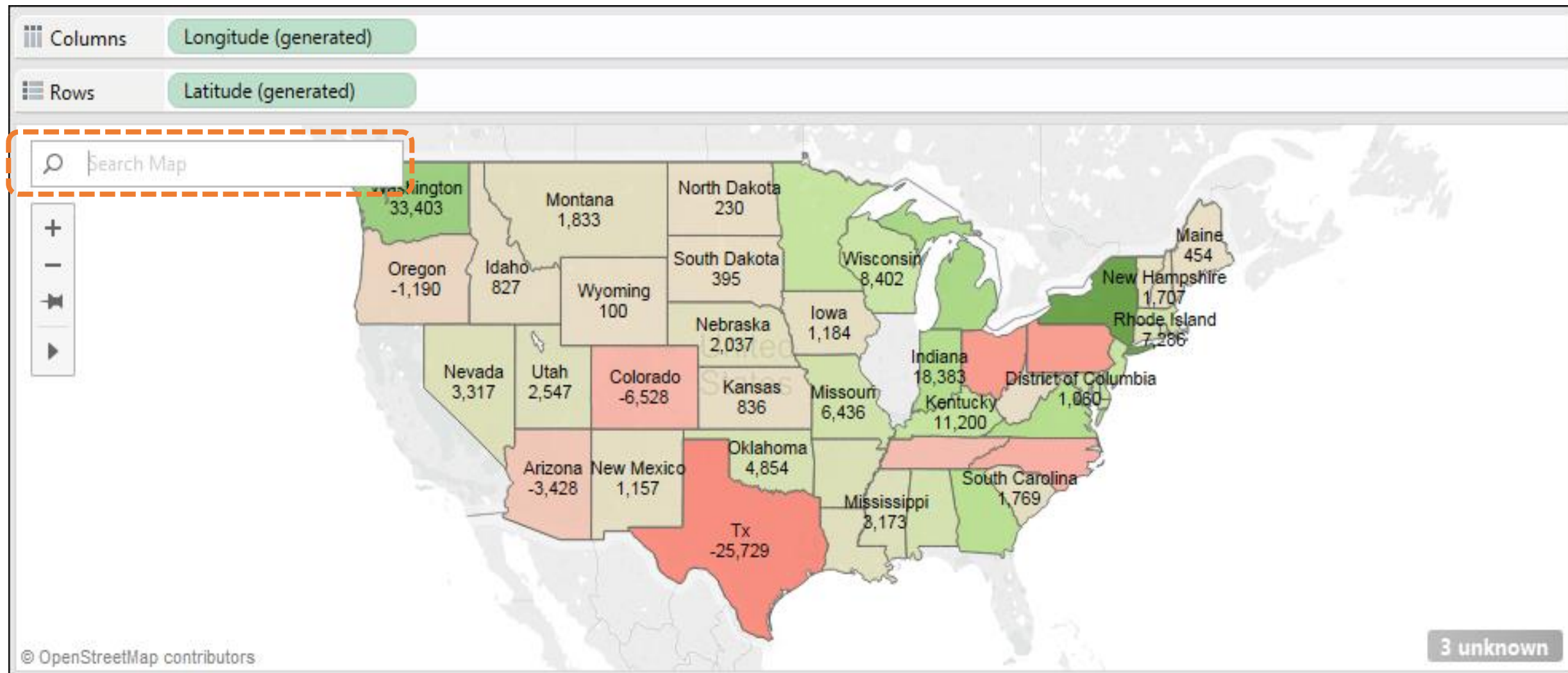Postcode

# Map Search Box

The map search box is located at the top left corner of your view.

# Use Case 1

An American multinational retail corporation needs an analysis of their sales and profit in various states in the U.S.A. Based on this analysis, they want to improve the advertising campaigns in low performing states.

Genelia is handling this project, and she requires a map displaying the states in America with their respective sales, profit, and quantity of sales values.

Let's understand how she does it, through a demonstration!

**Demo—Working with Symbol Map and Filled Map**

Demonstrate how to plot states on symbol map and filled map; color the marks by sales, quantity, and size by profit; and label the marks.

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Quiz

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**QUIZ 1**

If your dataset contains ambiguous location names, they can be corrected using the _____ option.

a. Edit Location

b. Import Geocode

c. Background Images

d. Geographic Search

**QUIZ 1**

If your dataset contains ambiguous location names, they can be corrected using the _____ option.

a. Edit Location

b. Import Geocode

c. Background Images

d. Geographic Search

The correct answer is **a.**

If your dataset contains ambiguous location names, they can be corrected using the Edit Location option. This option helps Tableau identify which country or state your data is referring to.

**QUIZ 2**

Which of the following statements about custom geocoding is false?

a. Custom geocoding is used only while working with cube data sources.

b. Once you import custom geocodes, new geographic roles become available.

c. The geocode file to be imported should be a .csv file.

d. A geocode file defines the hierarchies and locations of your geographic data.

Which of the following statements about custom geocoding is false?

a. Custom geocoding is used only while working with cube data sources.

b. Once you import custom geocodes, new geographic roles become available.

c. The geocode file to be imported should be a .csv file.

d. A geocode file defines the hierarchies and locations of your geographic data.

The correct answer is **a.**

Custom geocoding is used only while working with cube data sources.

**QUIZ 3**

Which of the following statements about using background images is true?

a. A background image should be only a map image.

b. A background image should be mapped to a set of columns in your dataset.

c. A background image cannot be annotated.

d. A background image should have a resolution of 1280 * 720.

Which of the following statements about using background images is true?

a. A background image should be only a map image.

b. A background image should be mapped to a set of columns in your dataset.

c. A background image cannot be annotated.

d. A background image should have a resolution of 1280 * 720.

The correct answer is **b.**

A background image should be mapped to a set of columns in your dataset.
These fields, mapped X and Y, will then be used in the rows and columns shelves to map the image in a view.

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## QUIZ 4

What will you use to set the axis of a zoomed map from fixed to automatic?

a. Lasso selection from the view toolbar

b. Rectangular selection from the view toolbar

c. Zoom area selection from the view toolbar

d. Reset the view button from the view toolbar

**QUIZ 4**

What will you use to set the axis of a zoomed map from fixed to automatic?

a.  Lasso selection from the view toolbar

b.  Rectangular selection from the view toolbar

c.  Zoom area selection from the view toolbar

d.  Reset the view button from the view toolbar

The correct answer is    **d.**

To set the axis of a zoomed map from fixed to automatic, you would use the reset the view button from the view toolbar.
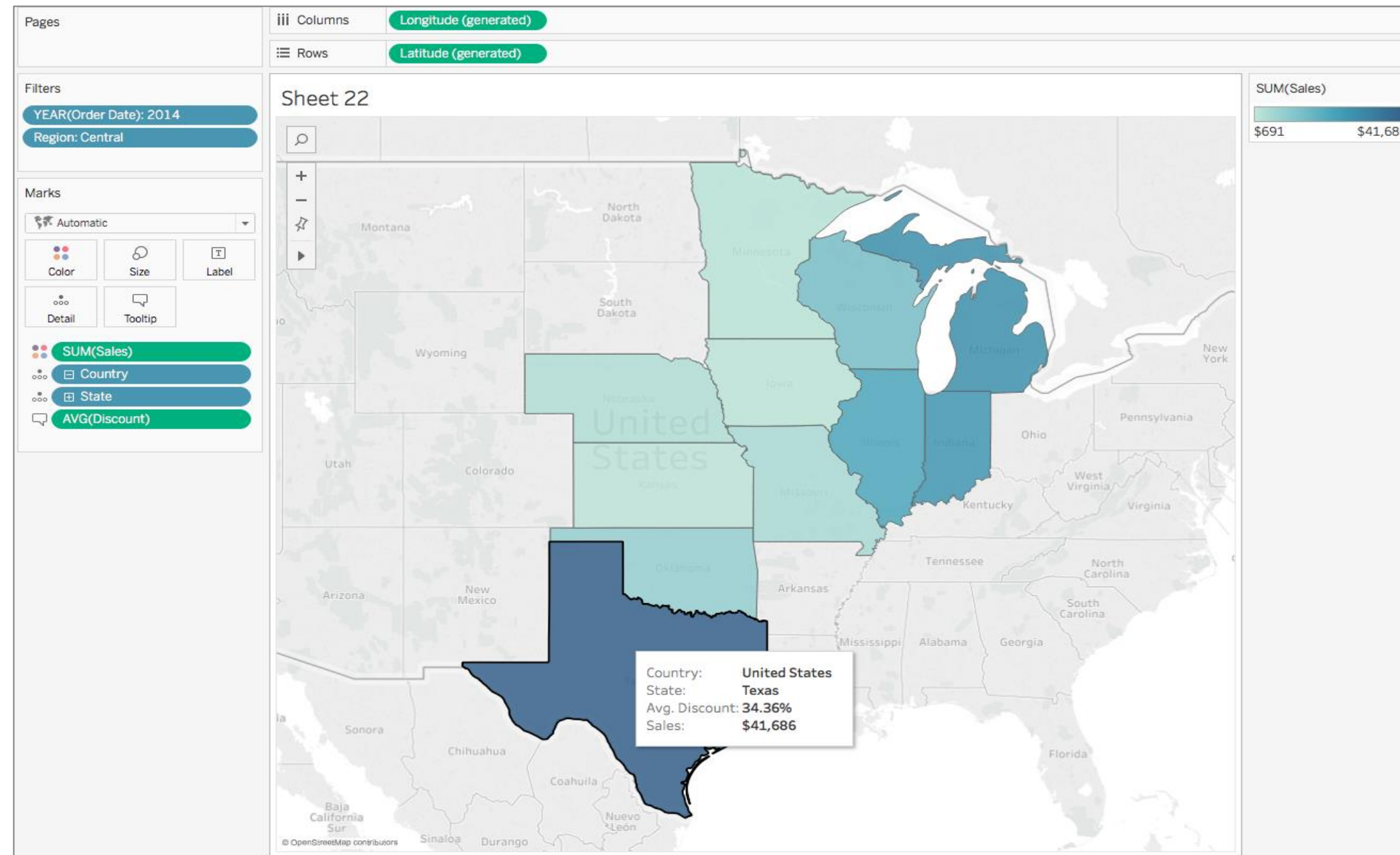
# Guided Exercises

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A new footwear brand in the U.S. is not doing as well as estimated in some states. Rodney Bishops, the sales manager, needs to analyze the discounts and sales offered in those states to help him improve the discount strategies. For this, the company needs to create a map visualization that will exhibit state-wise discount and sales across all regions.

- What is the average discount for the state that has the highest sales in the Central Region for 2014?
  (Hint: Add a filter for Year 2014)

- What is California's profit ratio for the corporate segment?
  (Hint: Add a filter for corporate segment and drag profit ratio to the Tooltips shelf)
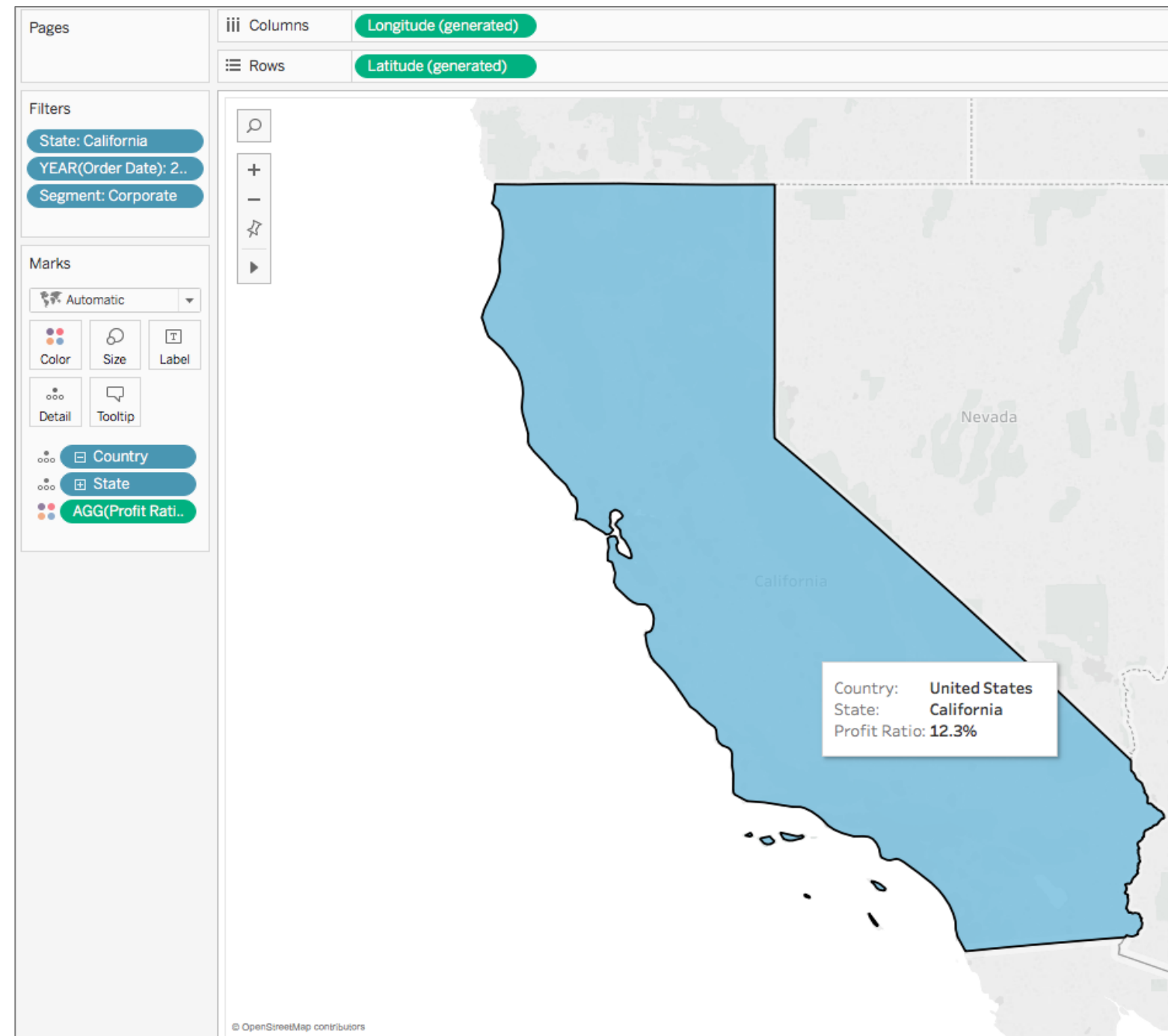
# Guided Exercise 1—Solution

Average discount for the state that has the highest sales in the Central Region for 2014

# Guided Exercise 1—Solution

## California's profit ratio for the corporate segment

# Guided Exercise 2—Problem Statement

Data shows that the U.S. Government faced more transportation glitches in 2017 than in 2016. Analysts conclude that increased population could be one of the major causes. The U.S. Census Bureau requires a map indicating the 2017 population data in all states. Based on this analysis, the government plans to prioritize public transit for densely populated states. Create a visualization to answer the following questions:

- In the year 2017, which state is the most densely populated in the West region? What is its population range?
  (Hint: Drag the region dimension in the color shelf.)

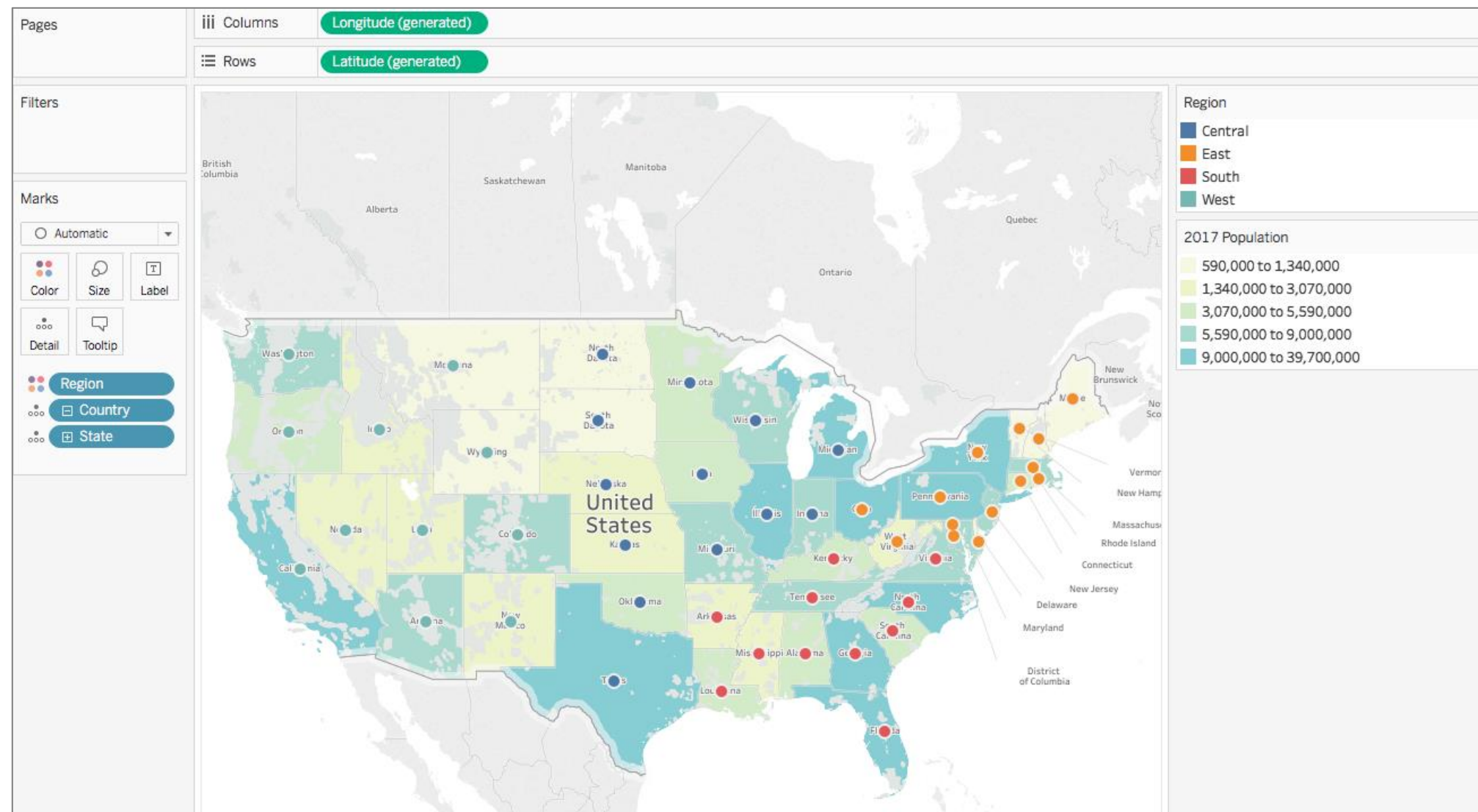- In the East region, name the states whose population is below 1,330,000.

# Guided Exercise 2—Solution

In the year 2017, which state is the most densely populated in the West region? What is its population range?
**California, with a range of 9 million to 39.7 million**

In the East region, name the states whose population is below 1,340,000.
**Maine, New Hampshire, and Vermont**

# Key Takeaways

○ Custom territories can be used to show a selection of states as one geographic area.

○ You can manually modify geographic locations when Tableau does not recognize them properly.

○ Custom geocodes can be imported in Tableau to form new geographic roles.

○ Background images can be added to your view below your data.

○ Map layers can be added to your view to add depth and context.

○ Geographic search allows you to search for a specific location in your map view.

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This concludes "Using Maps in Tableau."

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