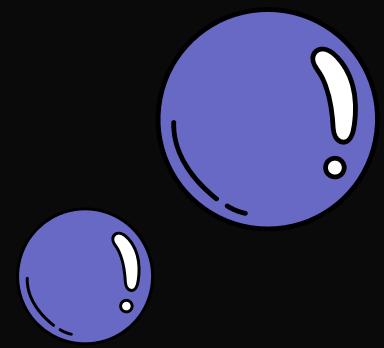
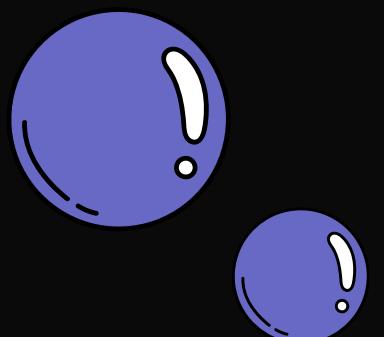


COURSE PROJECT

DATA VISUALIZATION

lex

see



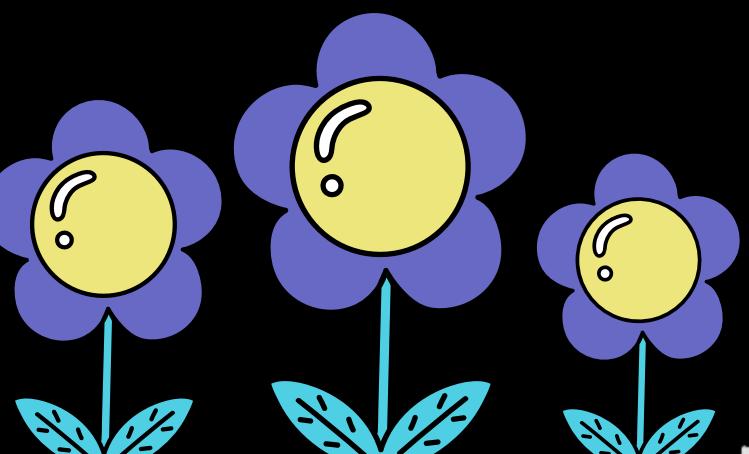
INTRODUCTION

- All of this data comes from EPA's Air Quality System (AQS).
- Data collection agencies report their data to EPA via this system and it calculates several types of aggregate (summary) data for EPA internal use. This includes daily and annual summaries, but not monthly summaries, as these are not routinely needed by EPA.
- There are two concepts about how EPA stores data that are useful in understanding the data files: monitors and pollutant standards.



[View Data: daily_ozone_2020.csv](#)

Tables < daily_ozone_2020.csv 10,000 rows 29 fields



For Hierarchies We
Create 3:

- City
 - address
 - city name
- Country
 - Country Code
 - Country Name
- State
 - state code
 - state name

TASK 1

- Create hierarchies

Tables	
▼	City
Abc	Address
🌐	City Name
▼	Country
Abc	County Code
🌐	County Name
📅	Date Local
📅	Date of Last Change
Abc	Datum
Abc	Event Type
Abc	Local Site Name
Abc	Method Code
Abc	Method Name
#	Parameter Code
Abc	Parameter Name
Abc	Pollutant Standard
Abc	Sample Duration
#	Site Num
▼	State
Abc	State Code
🌐	State Name

- Changed data type

We change the State code and Country Code
from data type Number(whole) to String

Fields			
Type	Field Name	Physical Table	Remote Field Name
#	State Code	daily_ozone_2020.csv	State Code
#	County Code	daily_ozone_2020.csv	County Code

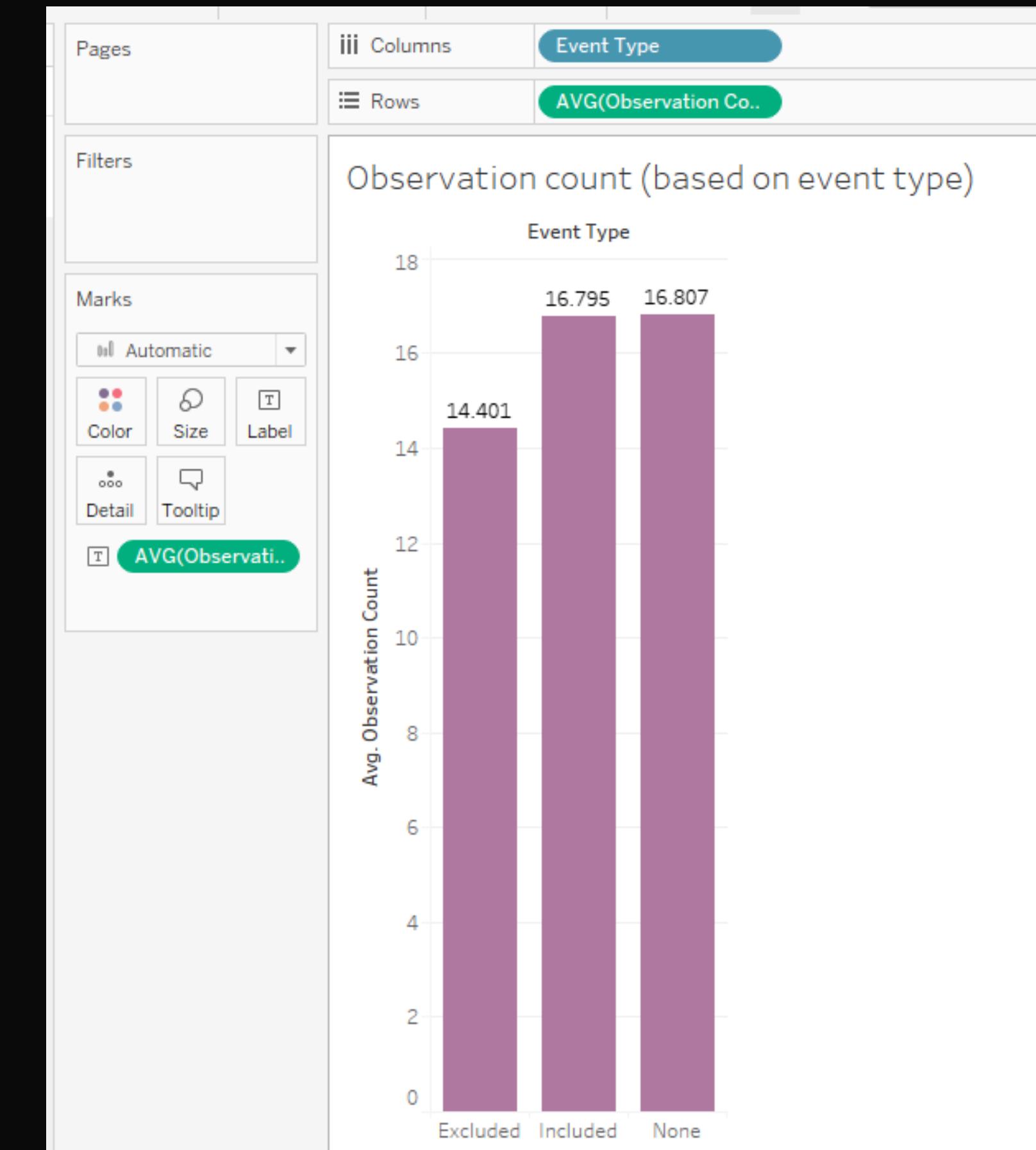
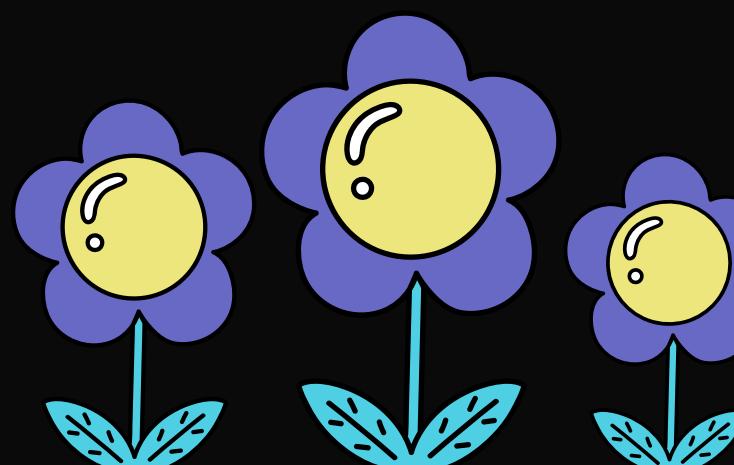
Fields			
Type	Field Name	Physical Table	Remote Field Name
Abc	State Code	daily_ozone_2020.csv	State Code
Abc	County Code	daily_ozone_2020.csv	County Code

TASK 2

j

Visualize single variables (at least one single categorical and one single continuous) :

Q1) what is the count number of observation based on event type?

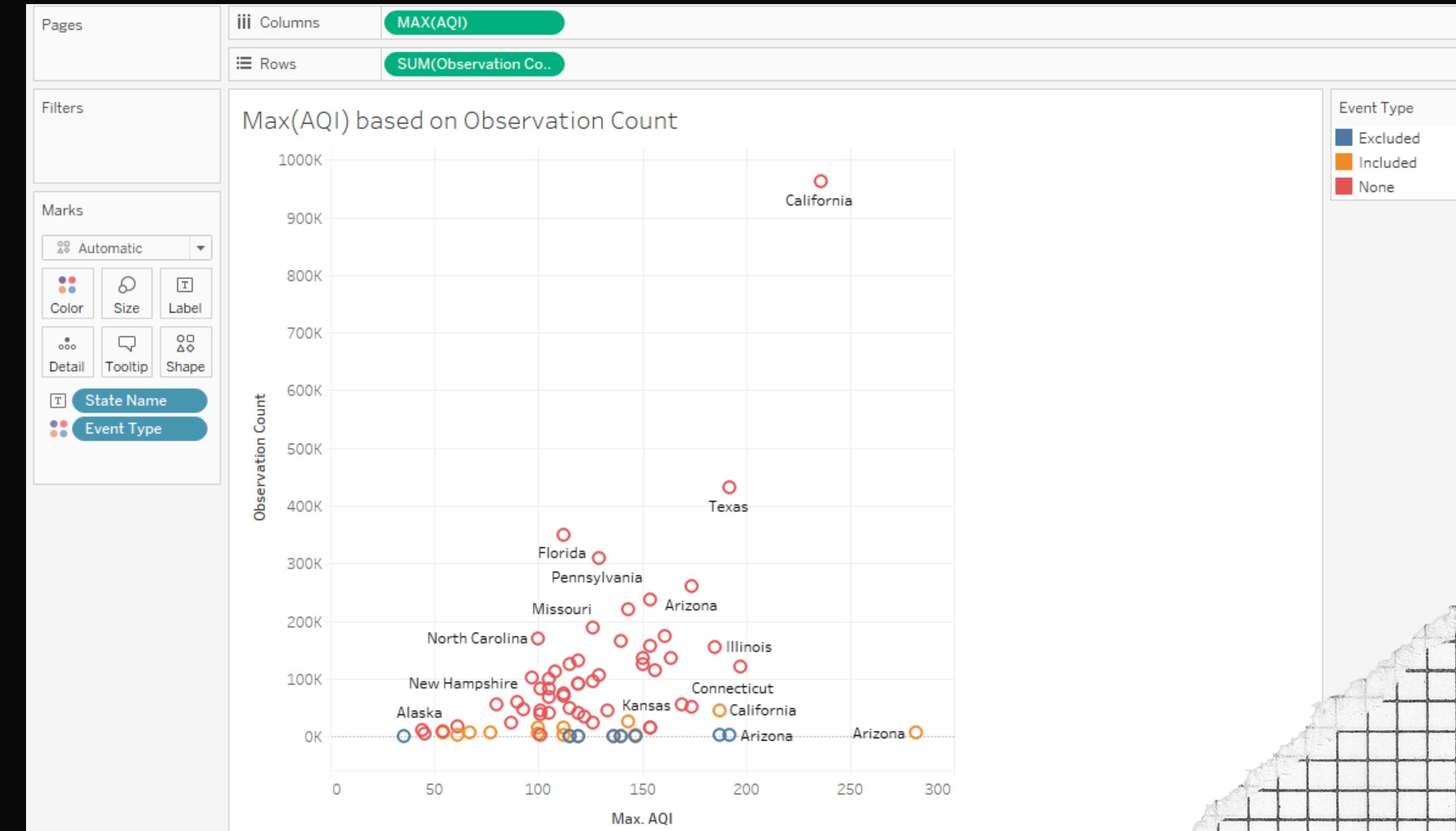


i

TASK 2

Visualize two continuous variables versus each other (at least one visual required):

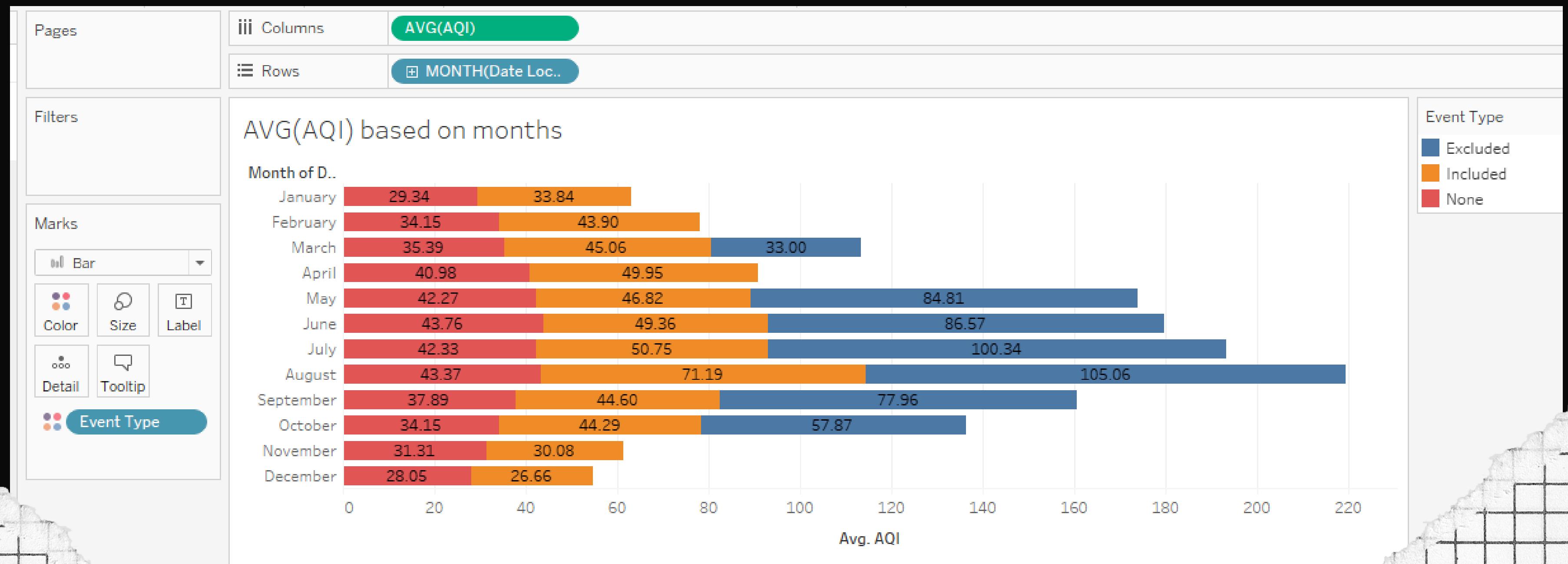
Q2) what is the number of observations compared to the highest value in the AQI within event type?



TASK 2

Visualize two variables of different types versus each other (at least one visual required) :

Q3) what is the compute of Avg AQI by month date?

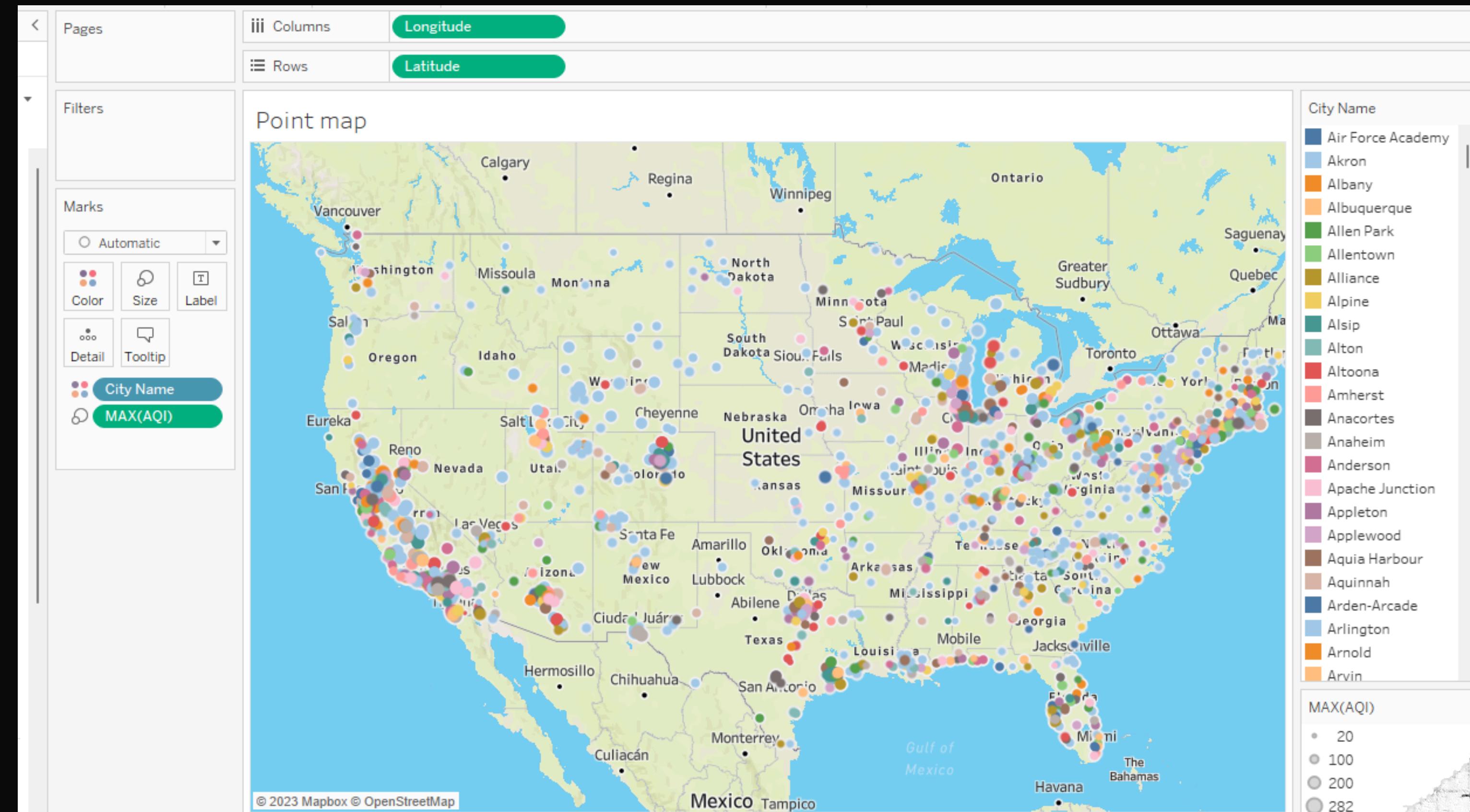


TASK 3

j

Use geospatial
visuals to answer
your questions,
including maps
type (point)

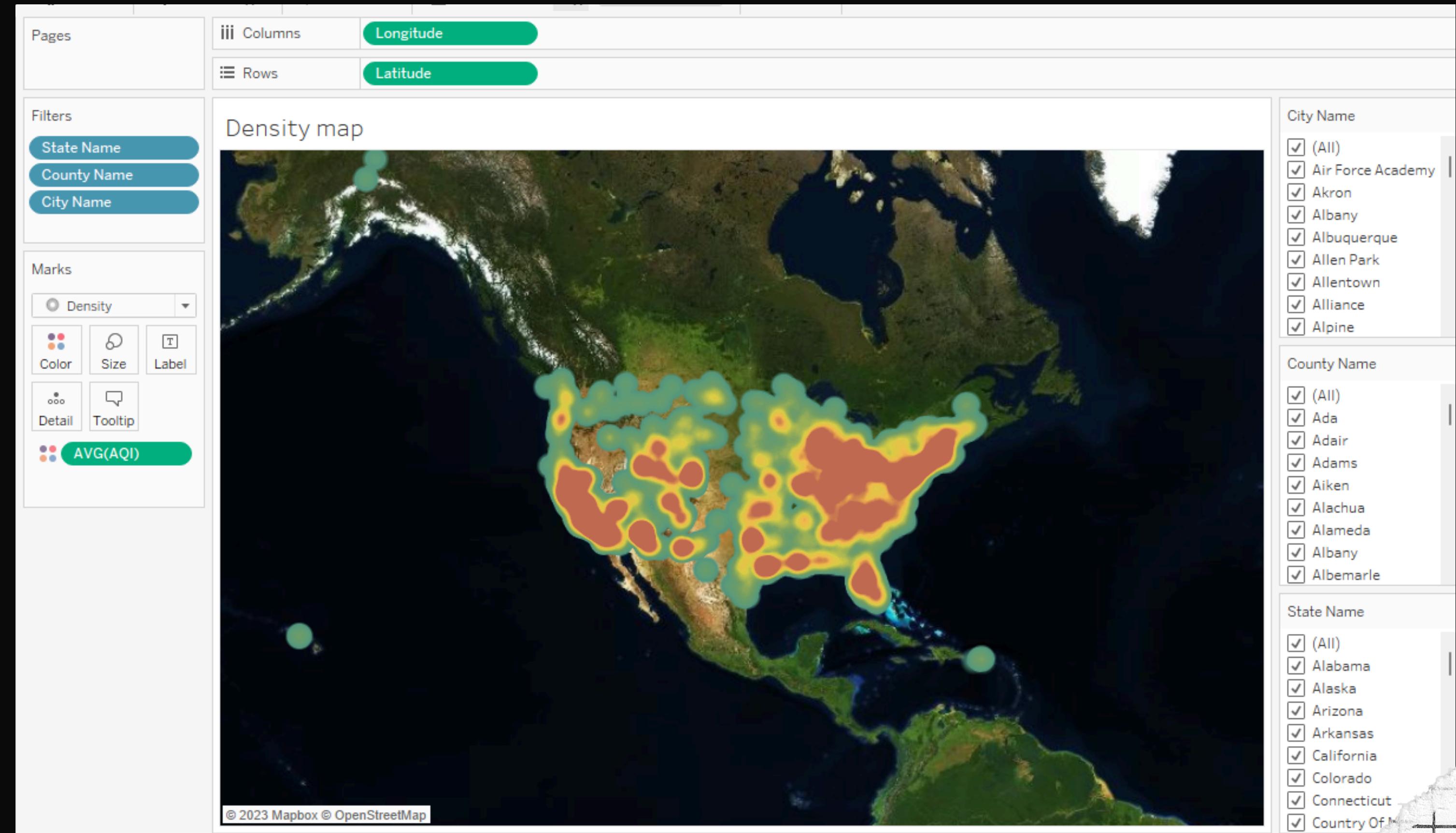
Q1.1) How to
visualize the Max
AQI by city name ?



TASK 3

use geospatial
visuals to answer
your questions,
including maps
type (Density)

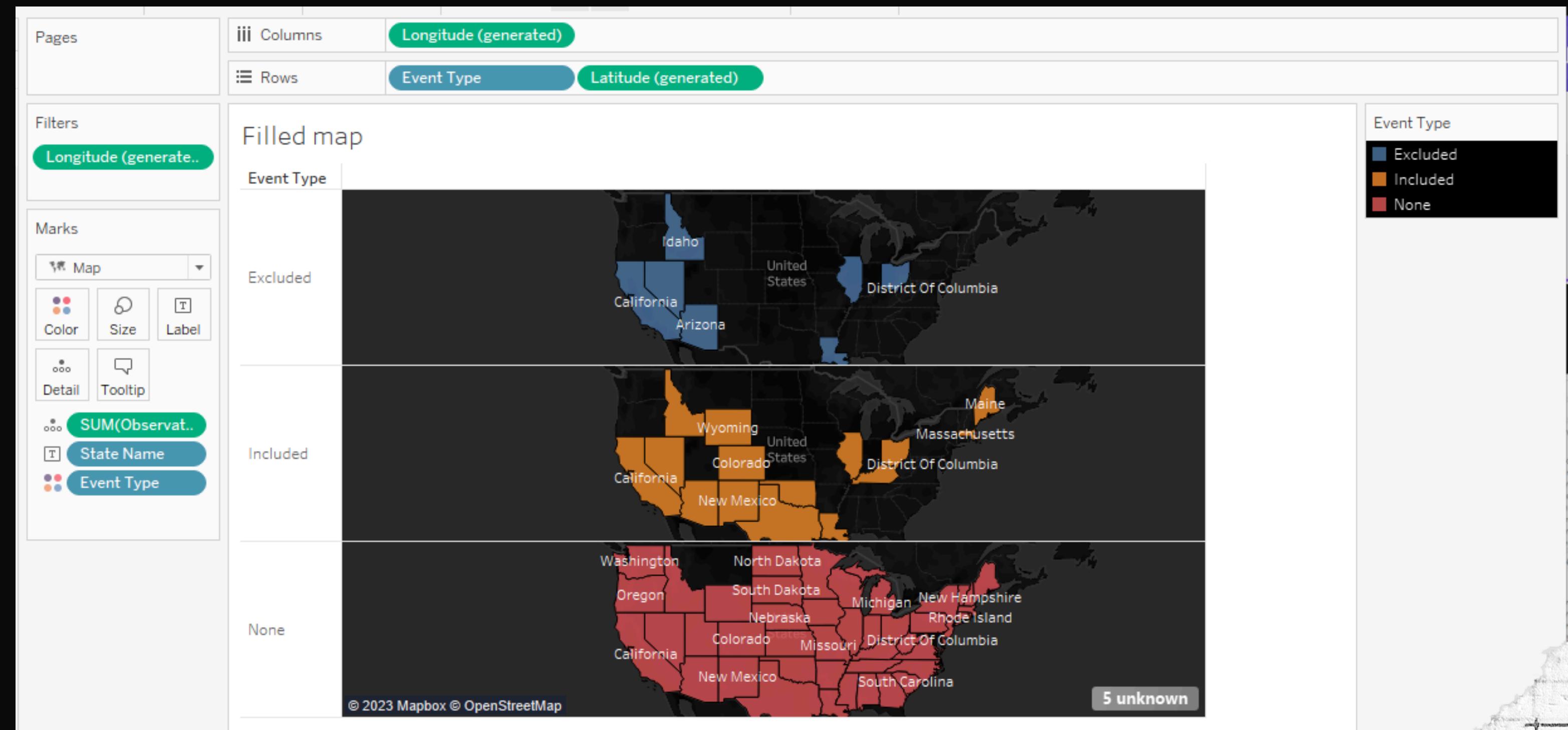
Q1.2) Which site
of the map has
most AVG AQI?



TASK 3

use geospatial
visuals to answer
your questions,
including maps
type (Filled)

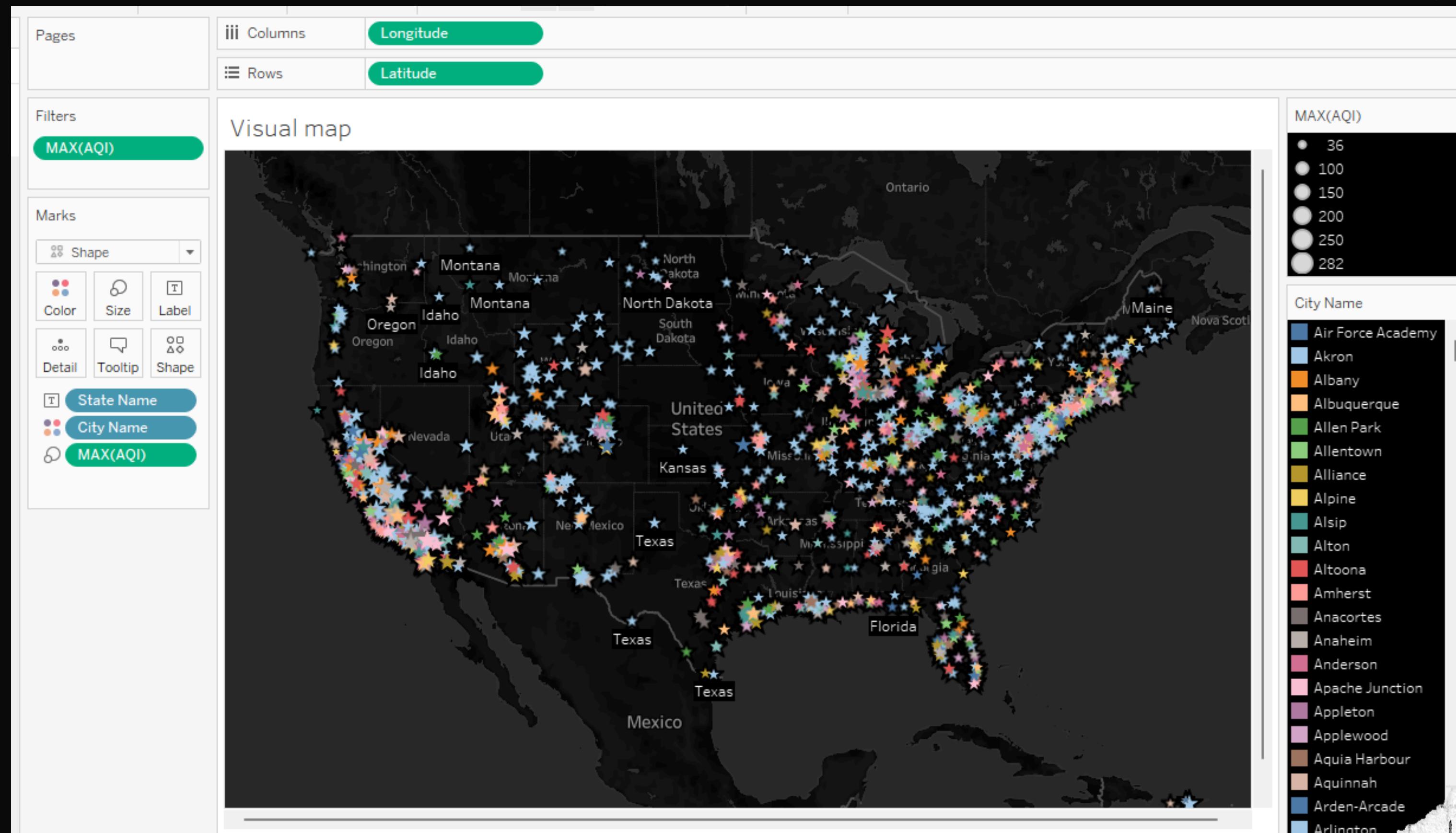
Q1.3) how it's look
like if we define
the event type of
each state in the
map?



TASK 3

Four visual attributes should be used in these visualizations

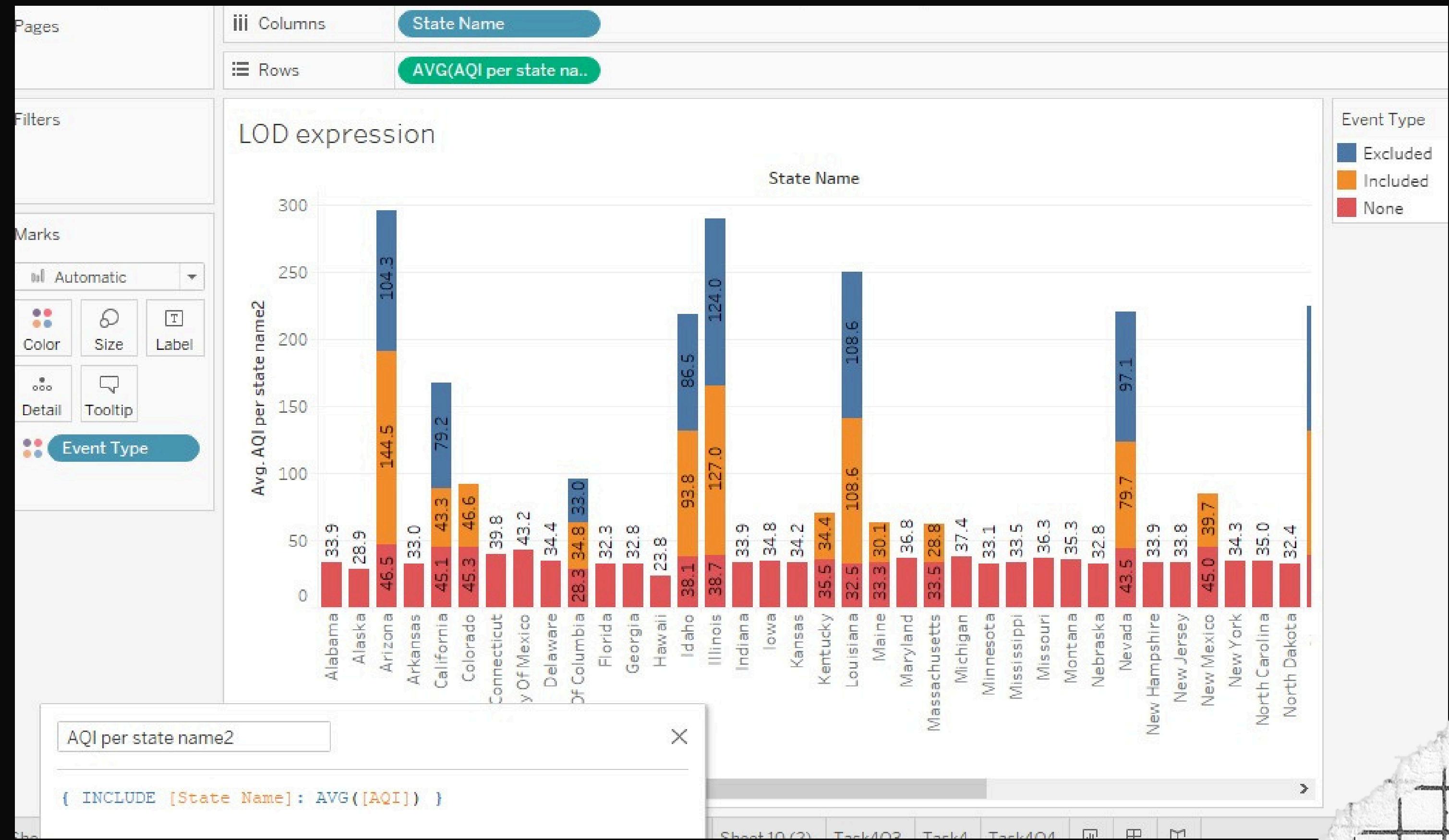
Q2) What cities have a high AQI and what cities have a low AQI?



TASK 4

Part 1 - Use at least one LOD expression

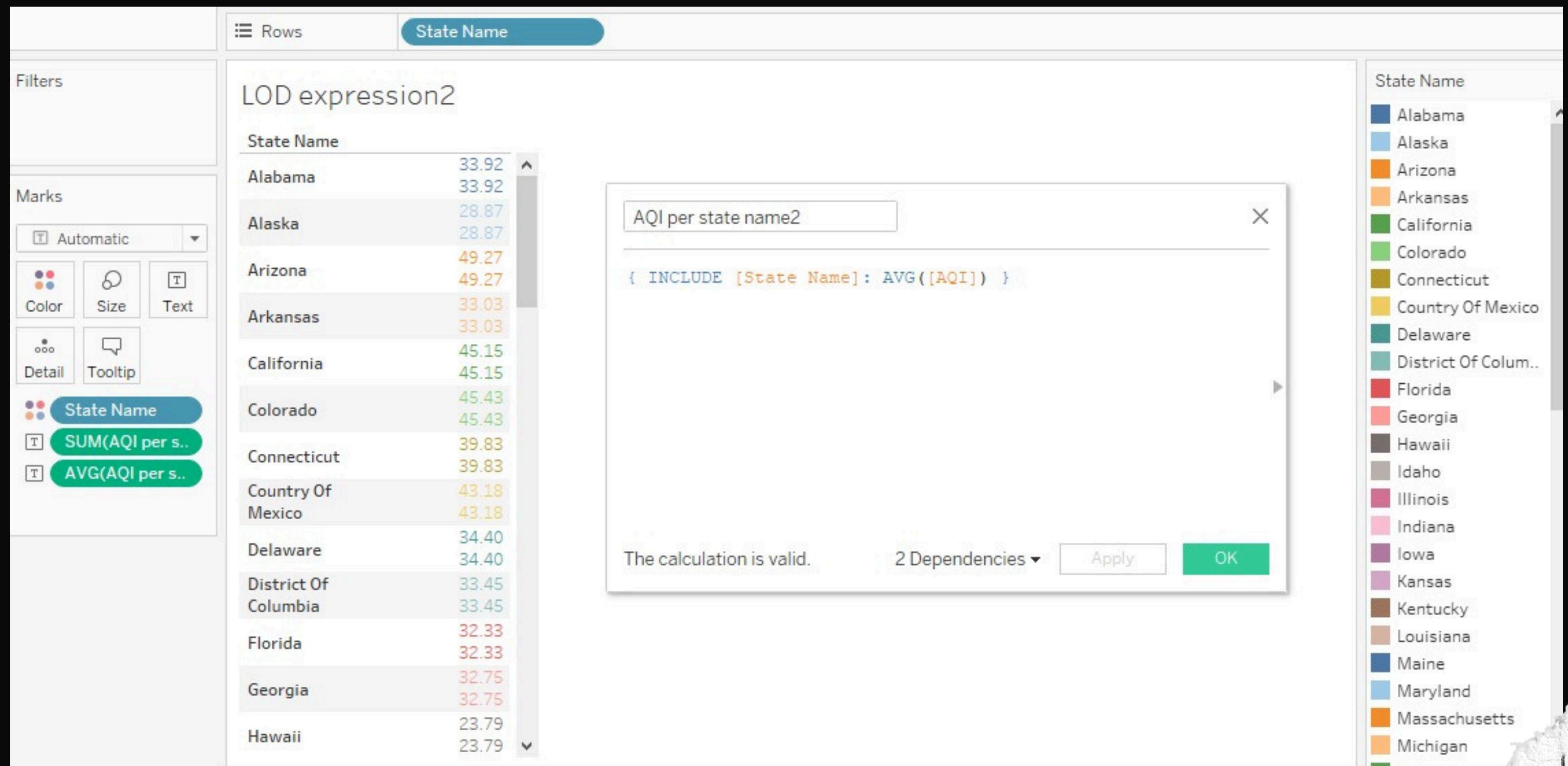
Q1.1) which the state have the highest AVG of AQI shown with event type ?



TASK 4

Part 2 - Use at least one LOD expression

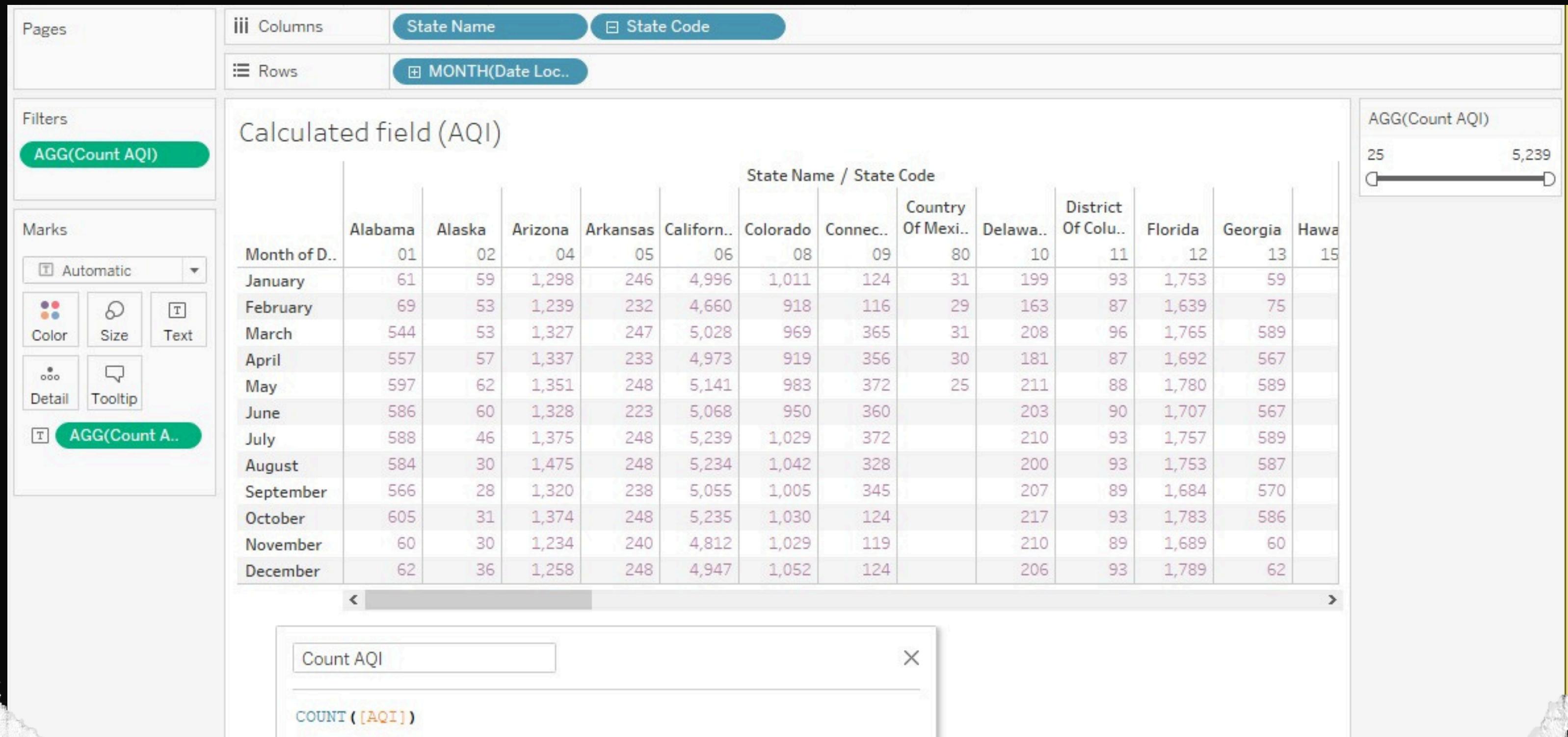
Q1.2) Compute SUM and AVG of AQI for each state using LOD expression?



TASK 4

Use at least one calculated field

Q2) Count the AQI for each state in all months by using calculated field?

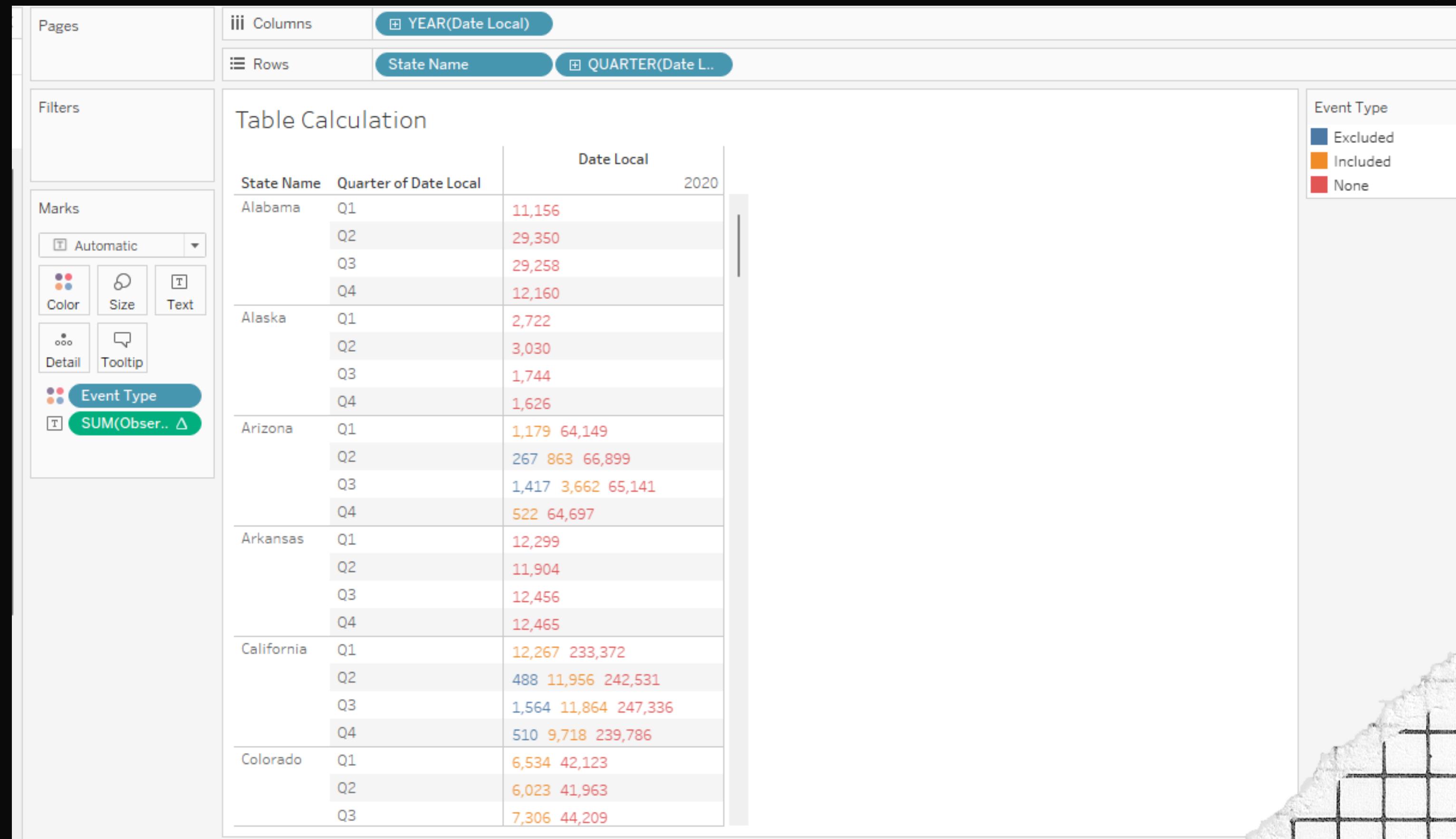


TASK 4

j

Use at least one
table calculation

Q3) show the
number of
observation on
each quarter of
2020 in all states?



TASK 4

Part 1 - Use at least one filter in your visualizations

Q4.1) Exclude the event type(**none**) from the data by using filter?

Connection
Live Extract | Edit Refresh
Extract includes subset of data. 2/11/2023 3:04:34 PM

Filters
1 | Edit

Pages
iii Columns Event Type
Rows

Filters
Before Filtering

Marks
Event Type
Excluded Included None
Abc Abc Abc

Pages
iii Columns Event Type
Rows

Filters
Filter (exclude none)

Marks
Event Type
Excluded Included
Abc Abc

Pages
iii Columns Event Type
Rows

Filters
Event Type
Filter (exclude none)

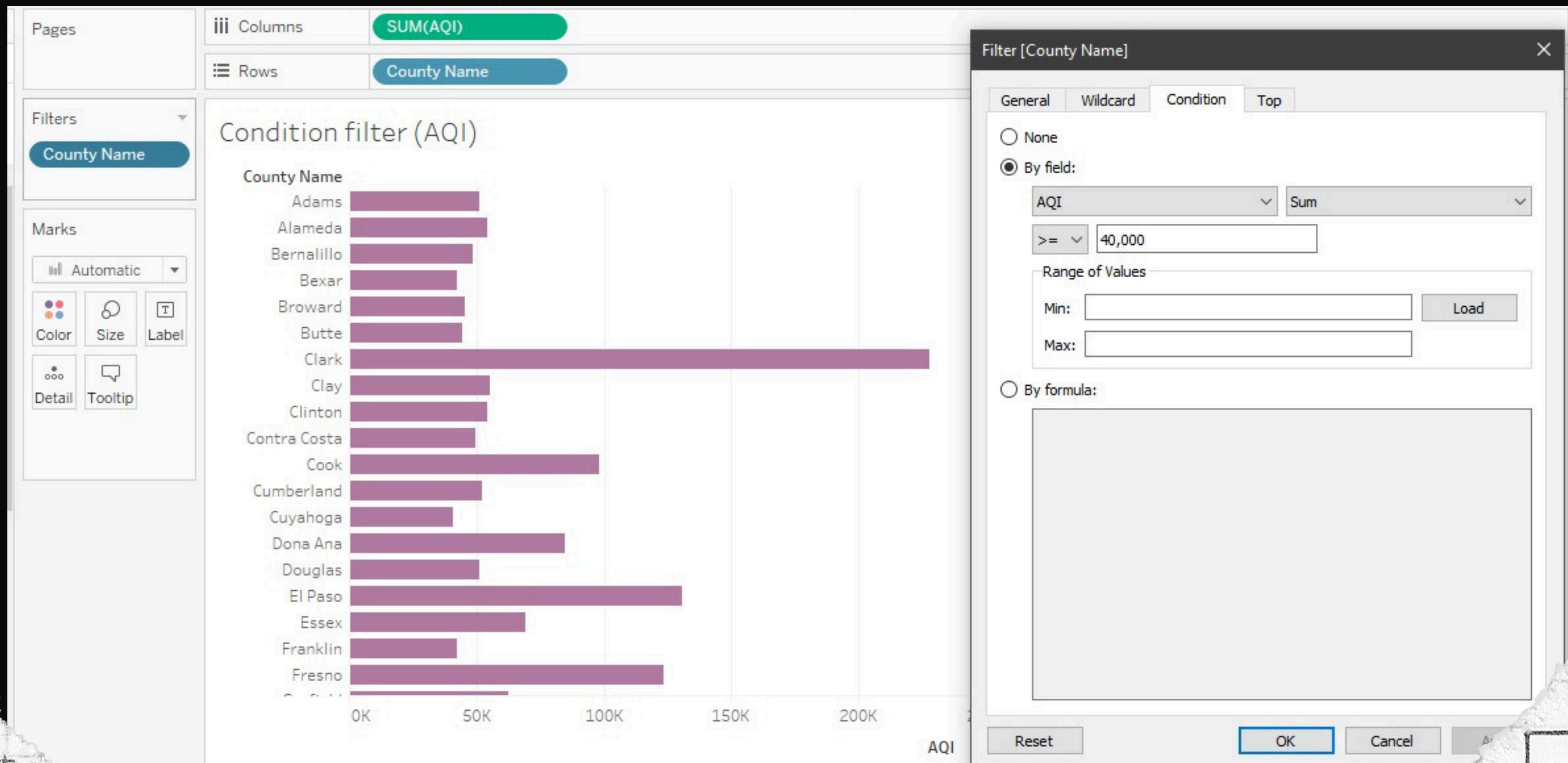
Marks
Event Type
Excluded Included
17.7 292.9

Color Size Text
Detail Tooltip
SUM(Arithmet..)

TASK 4

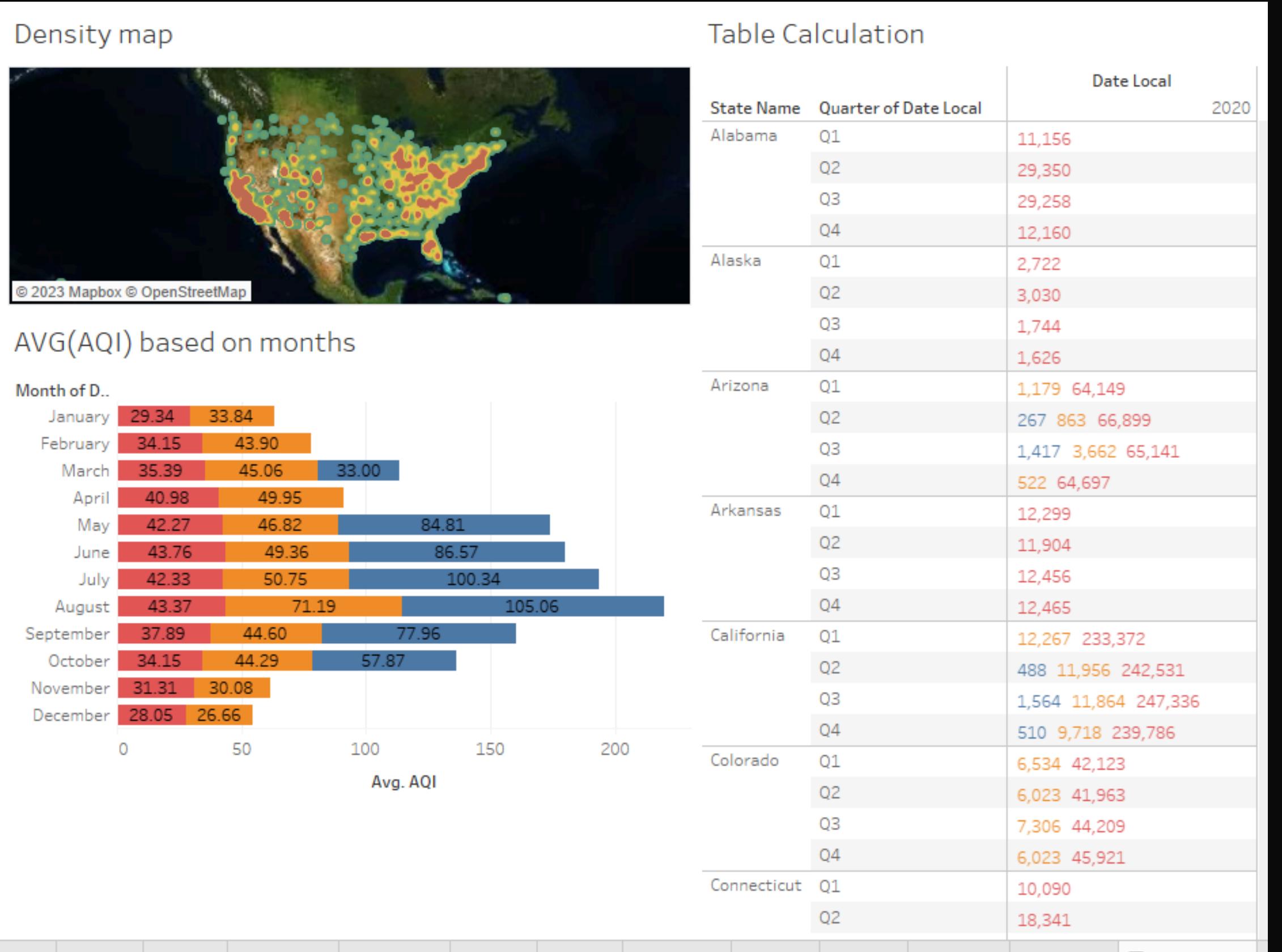
Part 2 - Use at least one filter in your visualizations

Q4.2) how to show all countries that have AQI $\geq 40,000$?



TASK 4

Create a dashboard



THANK YOU

