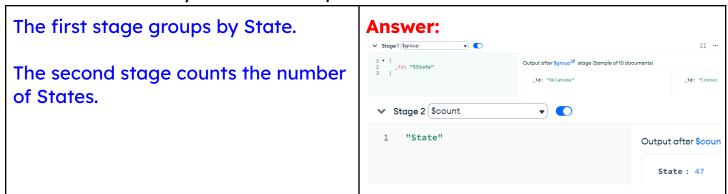
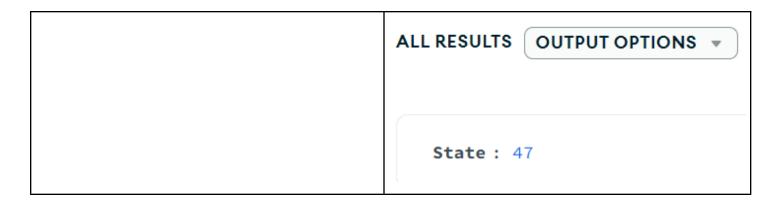
Title: Database Assignment 5
Your Name: Jack Saunders

Date: 11/22/2024

## 1. Over how many years was the unemployment data collected?

2. How many states were reported on in this dataset?





3. What does this query compute? db.unemployment.find({Rate : {\$lt: 1.0}}).count()

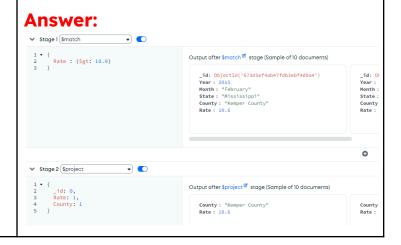
The shell returns 657 when that line of code is entered



4. Find all counties with unemployment rate higher than 10%

The first stage restricts the seach to have only unemployment rates above 10%.

The second stage only shows the unemployment rate and county.





5. Calculate the average unemployment rate across all states.

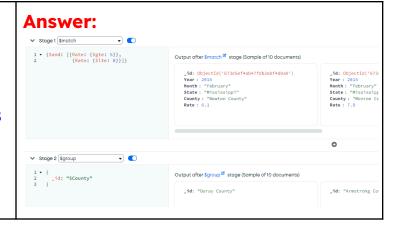
The first stage returns the average unemployment rate from all states. Assume: all the states combine to one average



Find all counties with an unemployment rate between 5% and 8%.

The first stage limits the query to documents with an unemployment rate of 5 - 8% inclusive.

The second stage groups documents by county.



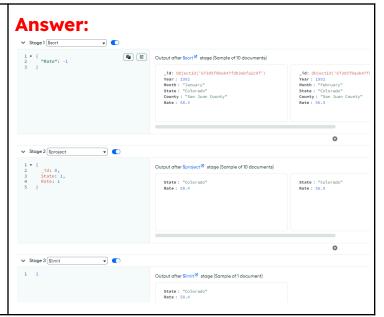


7. Find the state with the highest unemployment rate. Hint. Use { \$limit: 1 }

Stage 1 sorts all the rates in descending order

Stage 2 shows only the State and unemployment Rate

Stage 3 limits what is shown to only 1 result

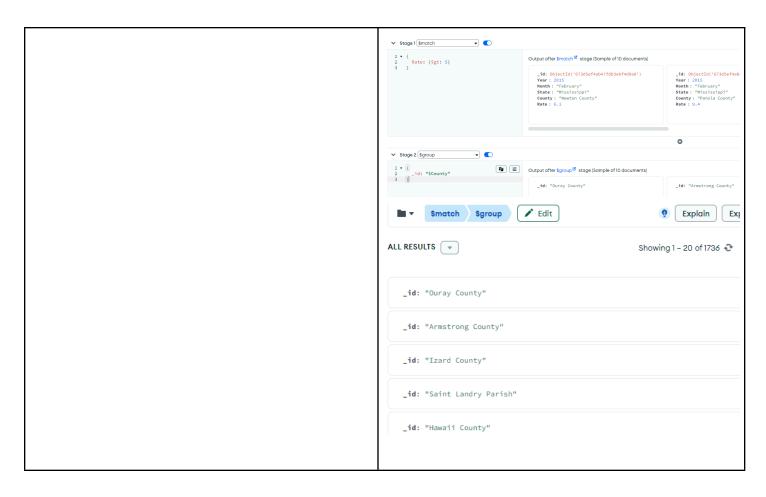


8. Count how many counties have an unemployment rate above 5%.

The first stage limits the query to documents with an unemployment rate greater than 5%.

The second stage groups documents by county.

**Answer:** 



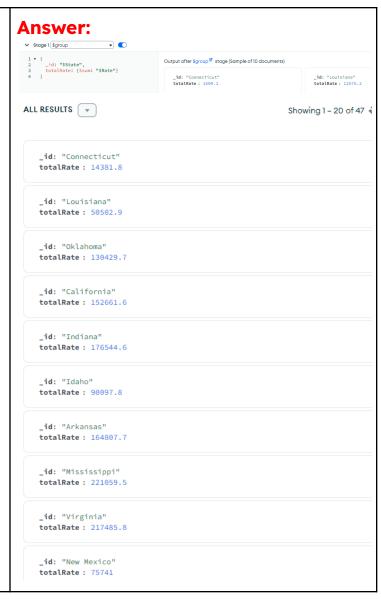
## 9. Calculate the average unemployment rate per state by year.

Line 2 and 3 of the first stage specifies to group the query by Year and State. This results in an object holding both values. Line 4 takes the average of the results that have been grouped.



10. (Extra Credit) For each state, calculate the total unemployment rate across all counties (sum of all county rates).

The first stage groups the results by State. Also, it finds the sum of the unemployment. It is assumed that this sum is calculated based on all the counties within a state according to the data.



11.(Extra Credit) The same as Query 10 but for states with data from 2015 onward.

Same as query 10, but Stage 2 restricts the documents to only be from 2015 onward.

**Answer:** 

