Summary

Approach:

- To begin with, I used the URL to make an API call and load the JSON file into the program.
- After loading the JSON file, using the Pandas library, I created a DataFrame to perform operations as needed.

Steps:

1. Deleted columns "**Slug State**" and "**ID Year**" as they were redundant.
2. Applied **groupby()** on the dataframe using column "State" to combine the data available.
3. Based on the grouped data, created new rows and columns. For the columns part since the columns were years, I had to get the unique years using **unique()** on the grouped data and finally created a new dataframe based on the new data.
4. To calculate the growth per year and factors for each state, iterated through rows of Years and applied formula (growth) and updated the field value.
5. Finally, within this new dataframe, I also added a column for factors that shows prime factors for the latest year in the dataset.
6. We replace the actual dataframe with new dataframe and output it as a CSV file.

Result:

s_name	2013	2014	2015	2016	2017	2018	2019	2019 Factors
Alabama	4833722	4849377 (0.32%)	4858979 (0.2%)	4863300 (0.09%)	4874747 (0.24%)	4887871 (0.27%)	4903185 (0.31%)	3;5;7;7;7;953
Alaska	735132	736732 (0.22%)	738432 (0.23%)	741894 (0.47%)	739795 (-0.28%)	737438 (-0.32%)	731545 (-0.8%)	5;146309
Arizona	6626624	6731484 (1.58%)	6828065 (1.43%)	6931071 (1.51%)	7016270 (1.23%)	7171646 (2.21%)	7278717 (1.49%)	3;1019;2381
Arkansas	2959373	2966369 (0.24%)	2978204 (0.4%)	2988248 (0.34%)	3004279 (0.54%)	3013825 (0.32%)	3017804 (0.13%)	2;2;754451
California	38332521	38802500 (1.23%)	39144818 (0.88%)	39250017 (0.27%)	39536653 (0.73%)	39557045 (0.05%)	39512223 (-0.11%)	3;3;4390247
Colorado	5268367	5355866 (1.66%)	5456574 (1.88%)	5540545 (1.54%)	5607154 (1.2%)	5695564 (1.58%)	5758736 (1.11%)	2;2;2;2;419;859