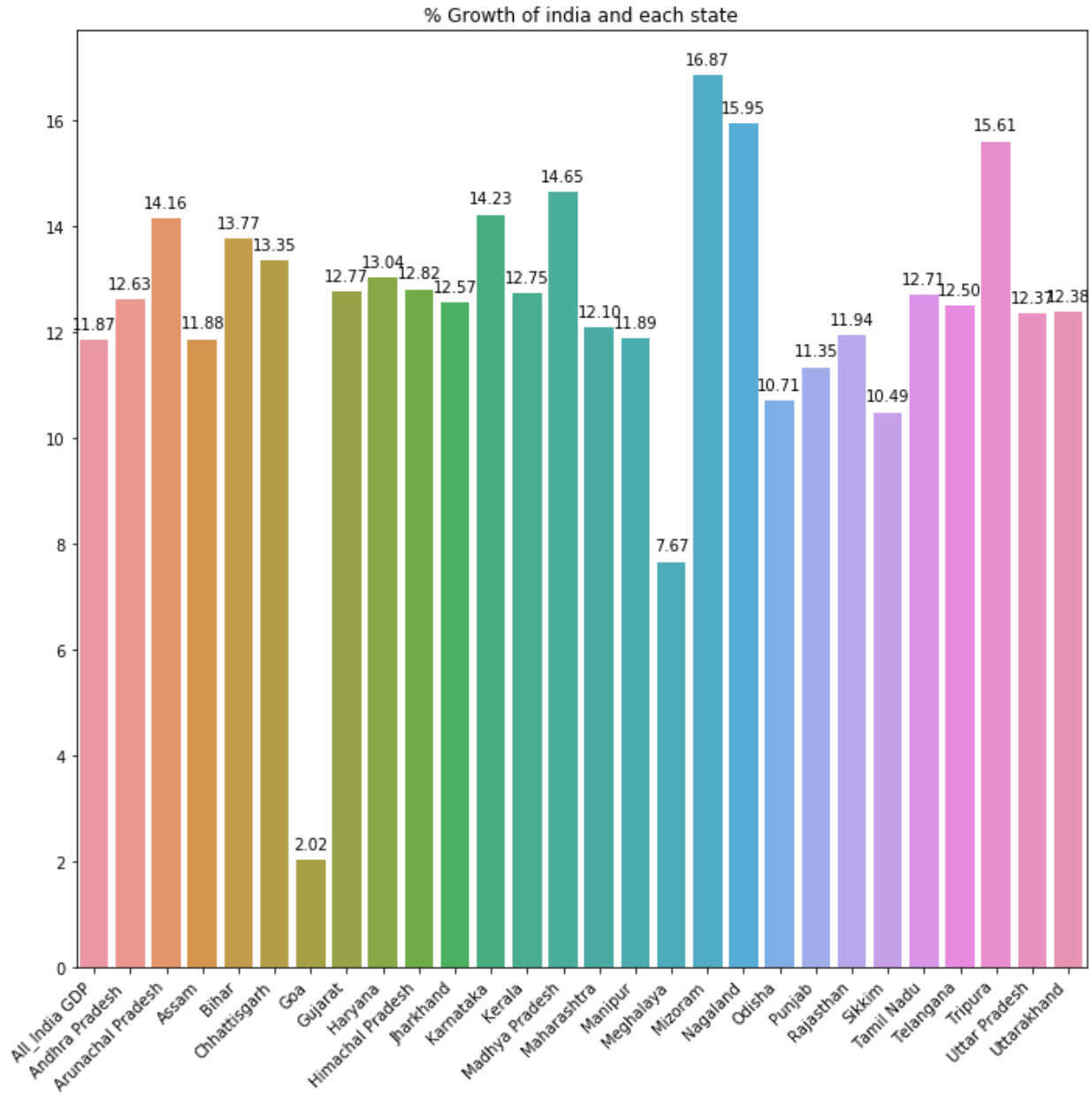
GDP Asignment Results

Part IA

Plot a graph for rows "% Growth over previous year" for all the states (not union territories) whose data is available, use as much data as possible for this exercise. Use the best fit line to represent the growth for each state. Draw a similar line graph for the nation as well.



Q. How will you compare the growth rates of any two states?

A. By calculating ratio.

(Growth rate of state 1)/(Growth rate of state 1):(Growth rate of state 2)/(Growth rate of state 1)

Here, assuming (Growth rate of state 1) is greater than (Growth rate of state 2).

Q. Which states have been growing consistently fast, and which ones have been struggling?

Rank top 3 fastest and 3 slowest-growing states.

A. From the graph below, states having growth rate (Y-axis value) above 14 are high and consistently growing fast.

Top 3: Mozoram, Nagaland, Tripura.

Bottom 3: Goa, Meghalaya, Sikkim.

Q. What is the Nation's average?

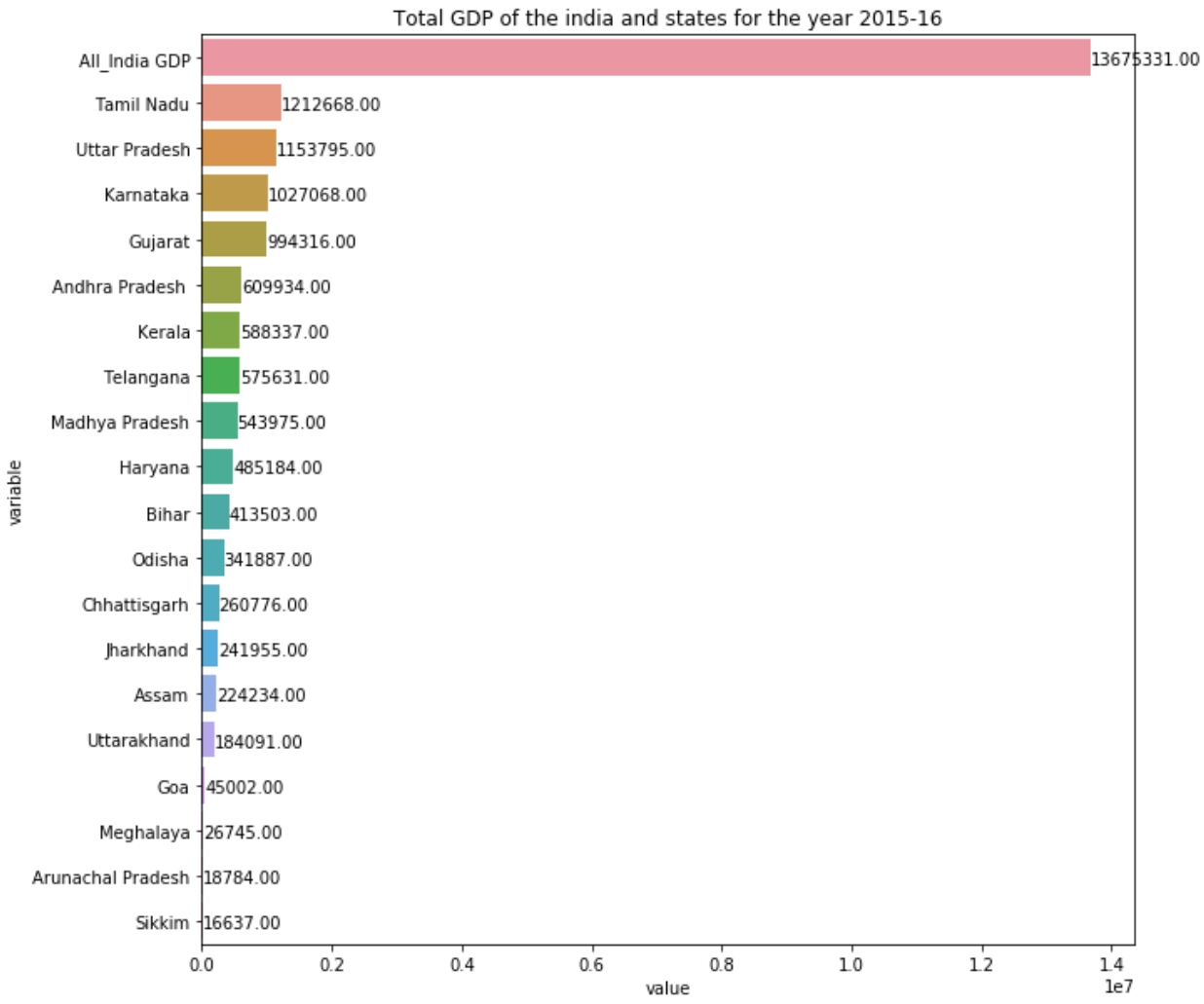
A. 11.87%.

Q. What has been the average growth rate of your home state, and how does it compare to the national average?

A. My home state Andhra Pradesh growth rate is 12.63%.

My home state growth rate is greater than the nation's average 11.87%.

Plot the total GDP of the states for the year 2015-16



Q. Which Plot will you use for this? Why? (Remember to plot the graph in a way such as it is easier to read and compare)

A. Seaborn bar plots are more informative to show the distribution of values at each level of the categorical variables. Input data can be passed in a variety of formats.

Q. Identify the top 5 and the bottom 5 states based on total GDP.

A. Top 5: Tamil Nadu, Uttar Pradesh, Karnataka, Gujarath, Andhra Pradesh.

Bottom 5: Uttarakhand, Goa, Meghalaya, Arunachal Pradesh, Sikkim.

Q. What insights can you draw from this graph? What states are performing poorly?

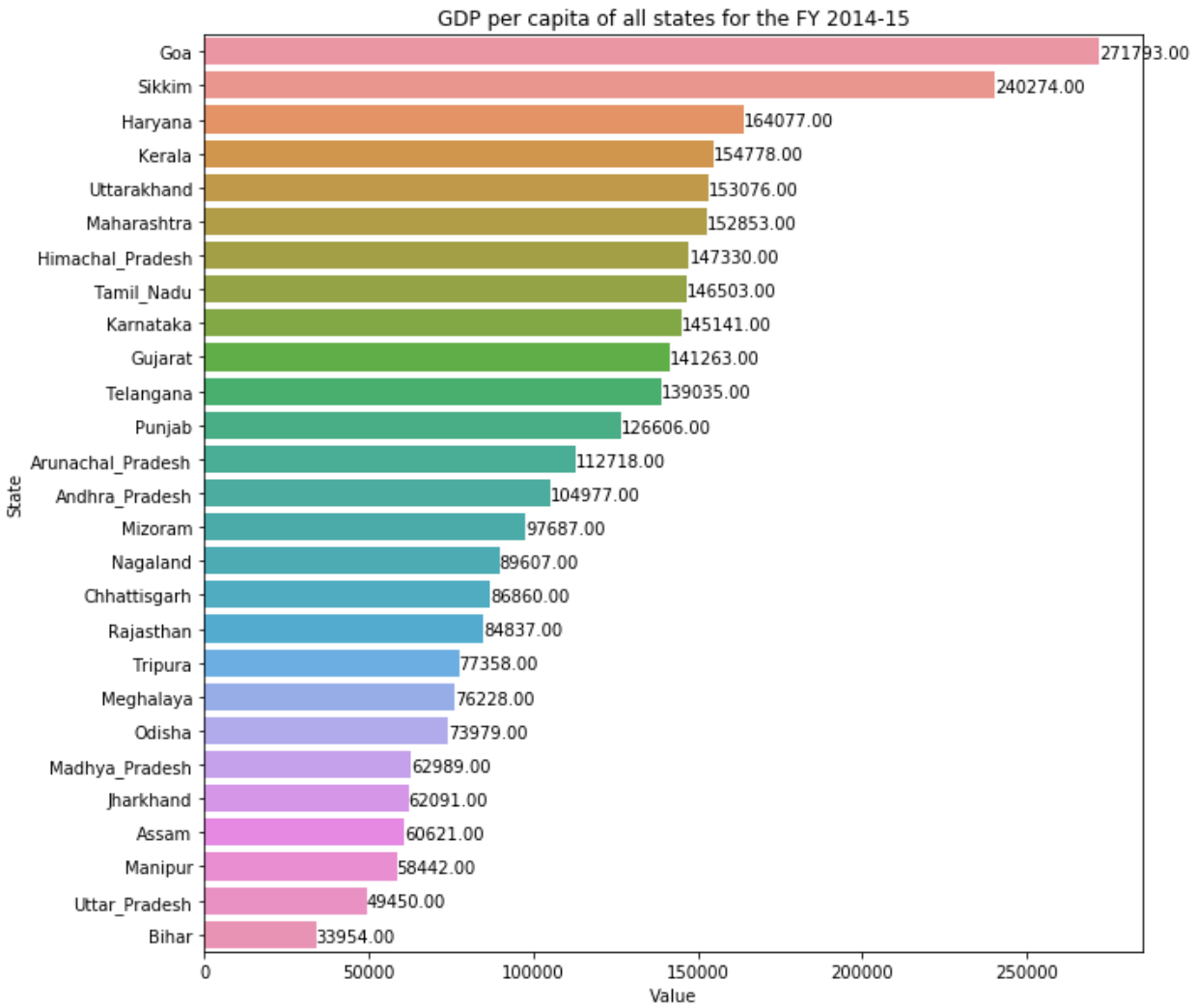
(Remember: this will not be solely based on total GDP)

A. Bottom 5 states need to be distributed more funds from GDP.

Part IB

- For the analysis below, use Data I-B. You can also use Data I-B along with Data I-A if required. Also, perform the analysis only for the duration 2014-15.
- Filter out the union territories (Delhi, Chandigarh, Andaman and Nicobar Islands, etc.) for further analysis, as they are governed directly by the central, not state governments.

Plot the GDP per capita for all the states.



Q. Identify the top 5 and the bottom 5 states based on the GDP per capita.

A. This can be identified from above plot

- Top 5 are: Goa, Sikkim, Haryana, Kerala, Uttarakhand
- Bottom 5 are: Jharkhand, Assam, Maipur, Uttar Pradesh, Bihar

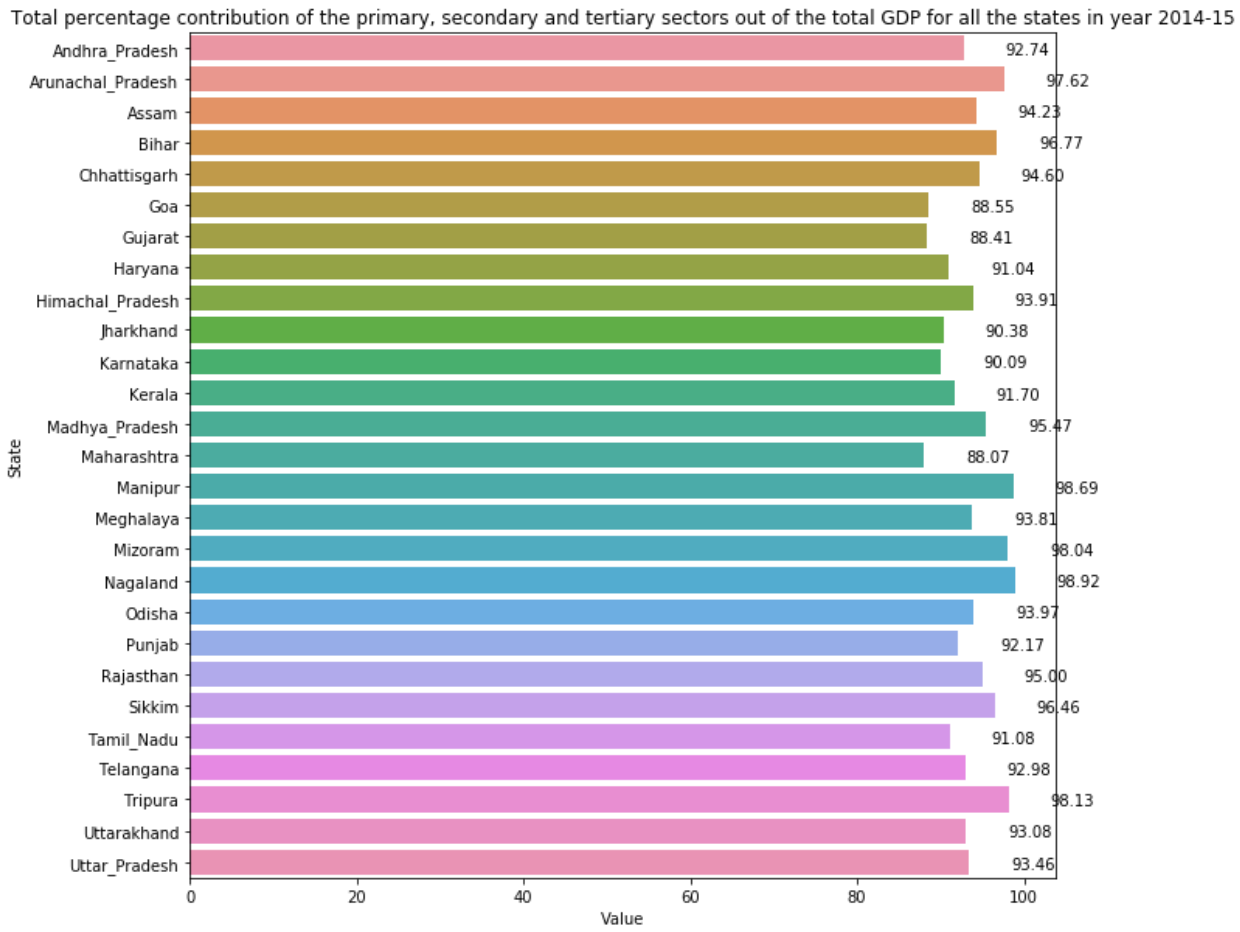
Q. Find the ratio of the highest per capita GDP to the lowest per capita GDP.

A. This can be identified by following formula:

(Highest per capita GDP (Goa)/Highest per capita GDP(Goa)) : (Lowest per capita GDP(Bihar)/Highest per capita GDP (Goa))

Goa : Bihar = (271793/271793):(33954/271793) = 1:(0.12) is the answer.

Plot the percentage contribution of the primary, secondary and tertiary sectors as a percentage of the total GDP for all the states.



Q. Which plot will you use here? Why?

A. Seaborn bar plots are more informative to show the distribution of values at each level of the categorical variables. Input data can be passed in a variety of formats.

Q. Why is (Primary + Secondary + Tertiary) not equal to total GDP?

A. Total GDP involves taxes, susidies of products as well.

Categorise the states into four groups based on the GDP per capita (C1, C2, C3, C4, where C1 would have the highest per capita GDP and C4, the lowest). The quantile values are (0.20,0.5, 0.85, 1), i.e., the states lying between the 85th and the 100th percentile are in C1; those between the 50th and the 85th percentiles are in C2, and so on.

For each category (C1, C2, C3, C4):

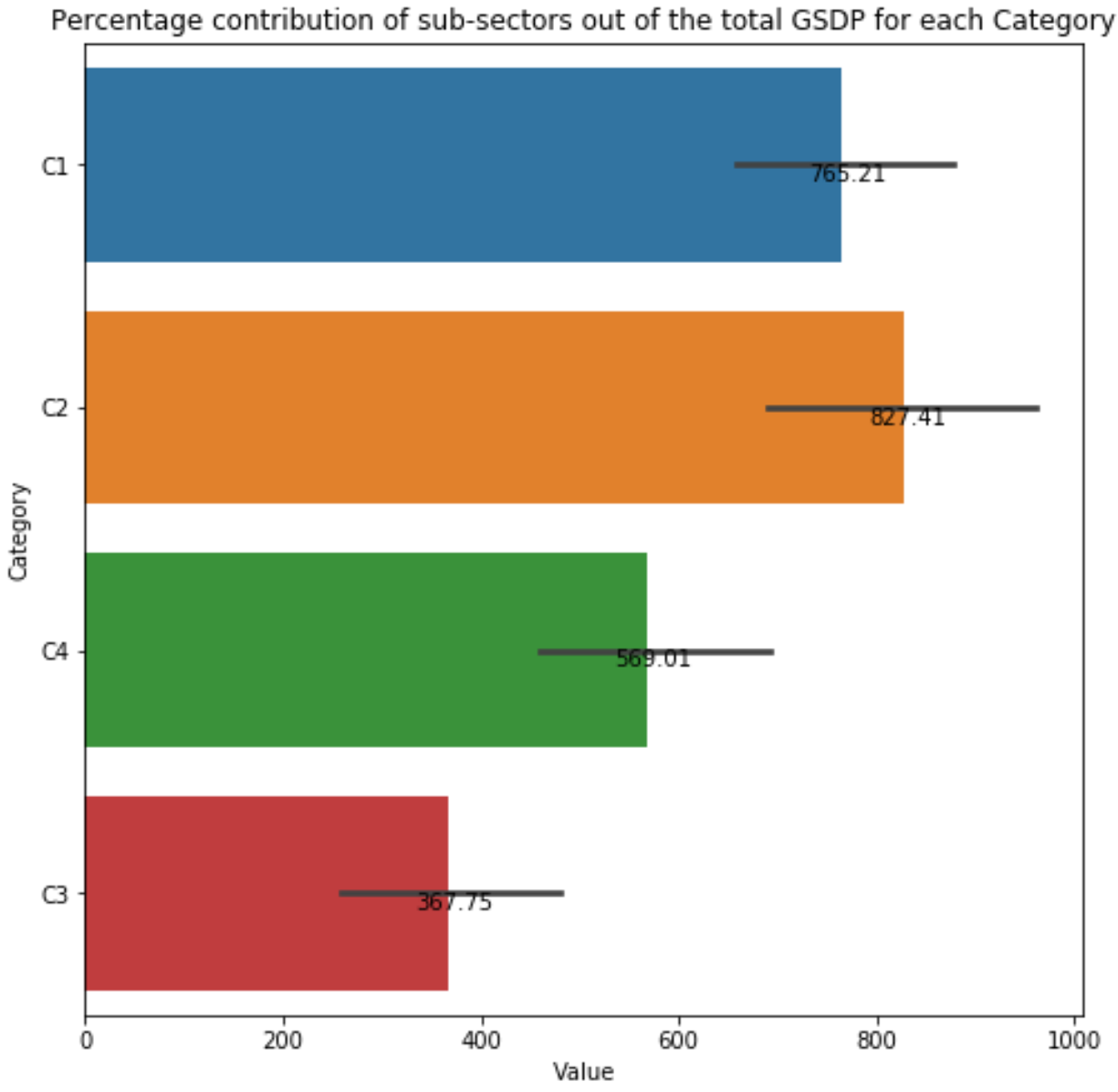
Q. Find the top 3/4/5 sub-sectors

(such as agriculture, forestry and fishing, crops, manufacturing etc., not primary, secondary and tertiary) that contribute to approximately 80% of the GSDP of each category.

A. Result shows Top 5 sub-categories where you can find top 3/4/5 sub-sectors.

Category	Item	
C1	Agriculture, forestry and fishing	42226888.0
	Crops	23676317.0
	Manufacturing	22038331.0
	Trade, repair, hotels and restaurants	17245309.0
	Real estate, ownership of dwelling & professional services	16224118.0
C2	Manufacturing	109196530.0
	Real estate, ownership of dwelling & professional services	92121446.0
	Agriculture, forestry and fishing	75209022.0
	Trade, repair, hotels and restaurants	61238862.0
	Trade & repair services	55252334.0
C3	Real estate, ownership of dwelling & professional services	14740245.0
	Agriculture, forestry and fishing	14391809.0
	Trade, repair, hotels and restaurants	13995159.0
	Manufacturing	13758793.0
	Construction	11264451.0
C4	Agriculture, forestry and fishing	56735044.0
	Crops	39331055.0
	Trade, repair, hotels and restaurants	27484595.0
	Trade & repair services	25581239.0
	Manufacturing	24987032.0

Plot the contribution of the sub-sectors as a percentage of the GSDP of each category.



Q. How does the GDP distribution of the top states (C1) differ from the others?

A. GDP distribution of C1 and C2 are nearer and far from C3 and C4.

Q. Which sub-sectors seem to be correlated with high GDP?

A. -Agriculture, forestry and fishing

-Manufacturing

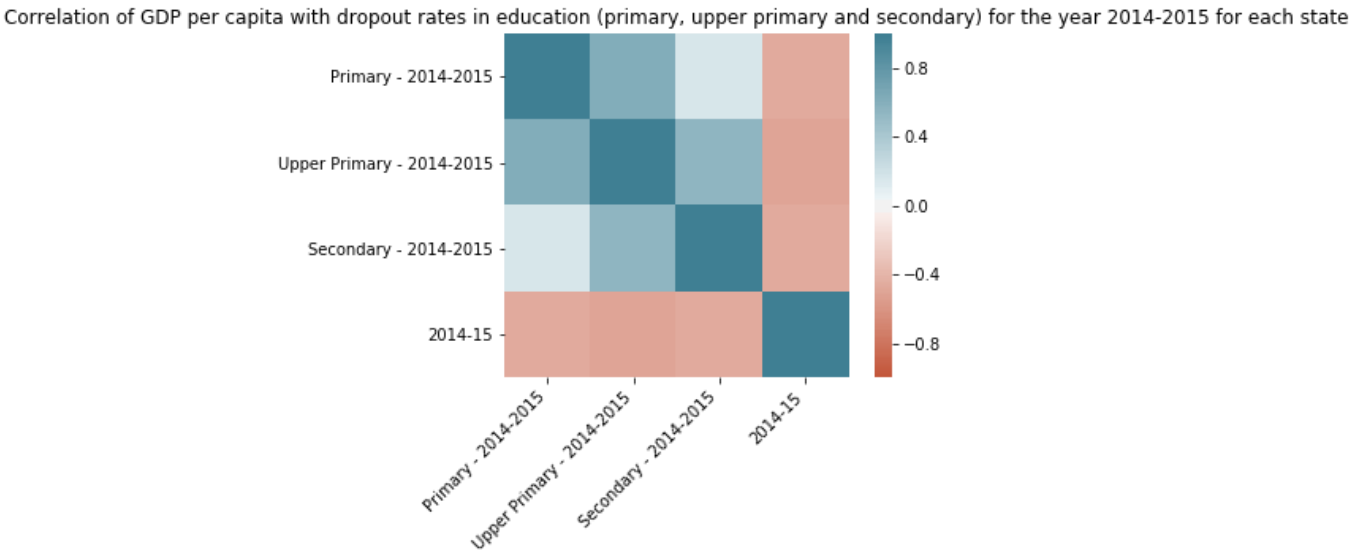
-Real estate, ownership of dwelling & professional services

Q. Which sub-sectors do the various categories need to focus on?

A.

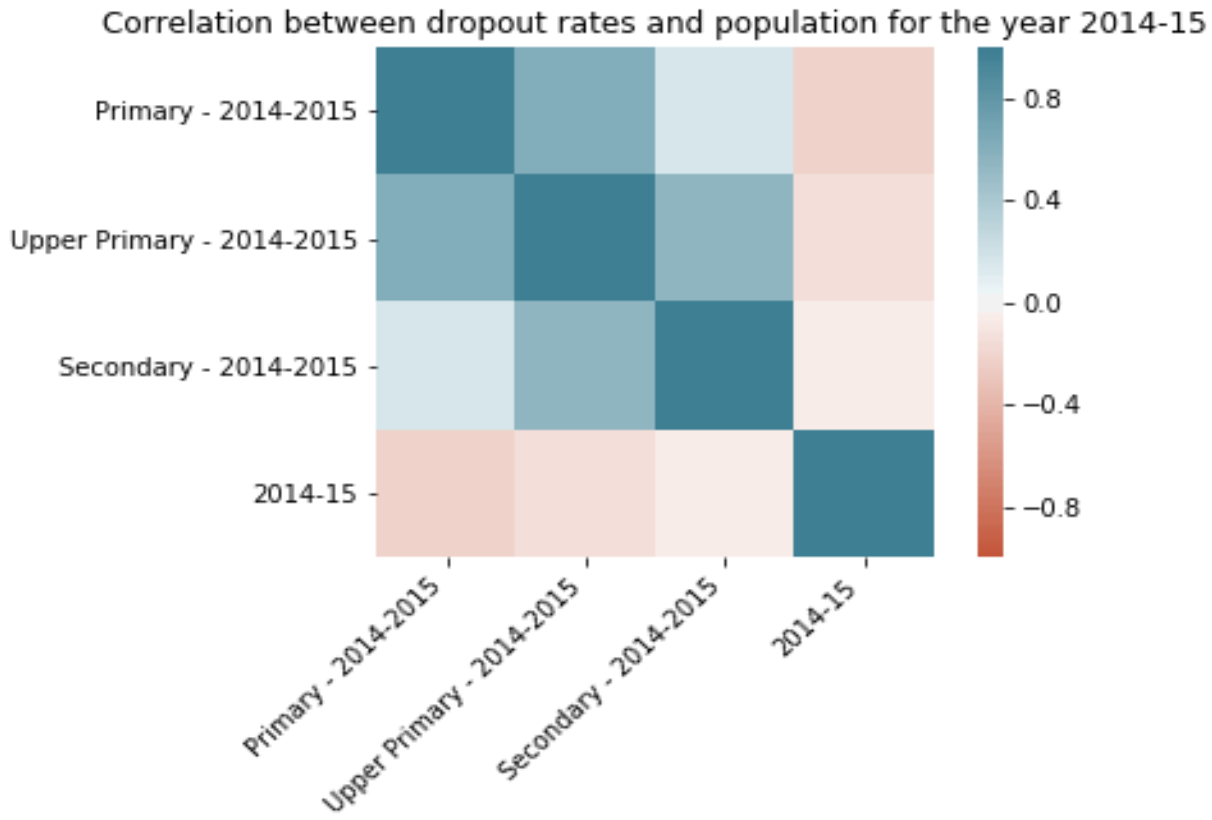
C1	Manufacturing
	Trade, repair, hotels and restaurants
	Real estate, ownership of dwelling & professional services
C2	Agriculture, forestry and fishing
	Trade, repair, hotels and restaurants
	Trade & repair services
C3	Trade, repair, hotels and restaurants
	Manufacturing
	Construction
C4	Trade, repair, hotels and restaurants
	Trade & repair services
	Manufacturing

Part II



Q. Analyse if there is any correlation of GDP per capita with dropout rates in education (primary, upper primary and secondary) for the year 2014-2015 for each state. Choose an appropriate plot to conduct this analysis.

A. GDP per capita is highly correlated with Upper primary school dropouts for the year 2014-15.



Q. Is there any correlation between dropout rate and %contribution of each sector (Primary, Secondary and Tertiary) to the total GDP?

A. No.

Q. You have the total population of each state from the data in part I. Is there any correlation between dropout rates and population? What is the expected trend and what is the observation?

A. Primary school dropout rate is high in all states for the year 2014-15.