

Agriculture Data Analytics In Crop Yield Estimation Using IBM Cognos

Introduction: - Crop production in India is one of the important sources of income and India is one of the top countries to produce crops. As per this project we will be analyzing some important visualization, creating a dashboard and by going through these we will get most of the insights of Crop production in India.

Project Objectives

By the end of this project, you will:

- Know fundamental concepts and can work on IBM Cognos Analytics.
- Gain a broad understanding of plotting different graphs.
- Able to create meaningful dashboards

Project Flow

- Users create multiple analysis graphs/charts.
- Using the analyzed chart creation of Dashboard is done.
- Saving and Visualizing the final dashboard in the IBM Cognos Analytics.

Dataset Link :[Dataset](#)

Let's understand the data we're working with and give a brief overview of what each feature represents or should represent

1. State Name - All the Indian State names.
2. District Name -Different District names.
3. Crop Year- contains the crop years.
4. Season – Different seasons for crop production.
5. Area- Total number of areas covered.
6. Production- production of crops.

Context

This dataset provides a huge amount of information on crop production in India ranging from several years. Based on the Information the ultimate goal would be to predict crop production using powerful machine learning techniques.

Content

The content is taken from data.world website
<https://data.world/thatzprem/agriculture-india>

Inspiration

Can you predict the crop production in India, which is vital for so many things?

Data Visualization Charts

Using the Crop production in Indian dataset, we plan to create various graphs and charts to highlight the insights and visualizations.

Project starts

Step1 –after uploading data in IBM cognose the tab1 is renamed as given below:

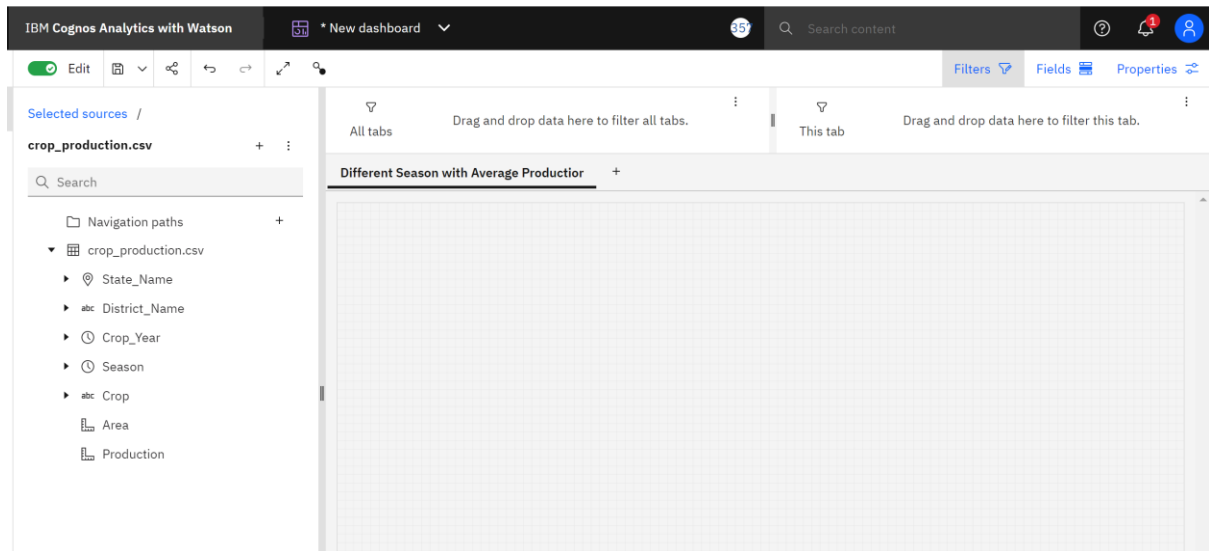


Figure 1: tab1 is renamed as Different Seasons with Average Production

Step2-column chart

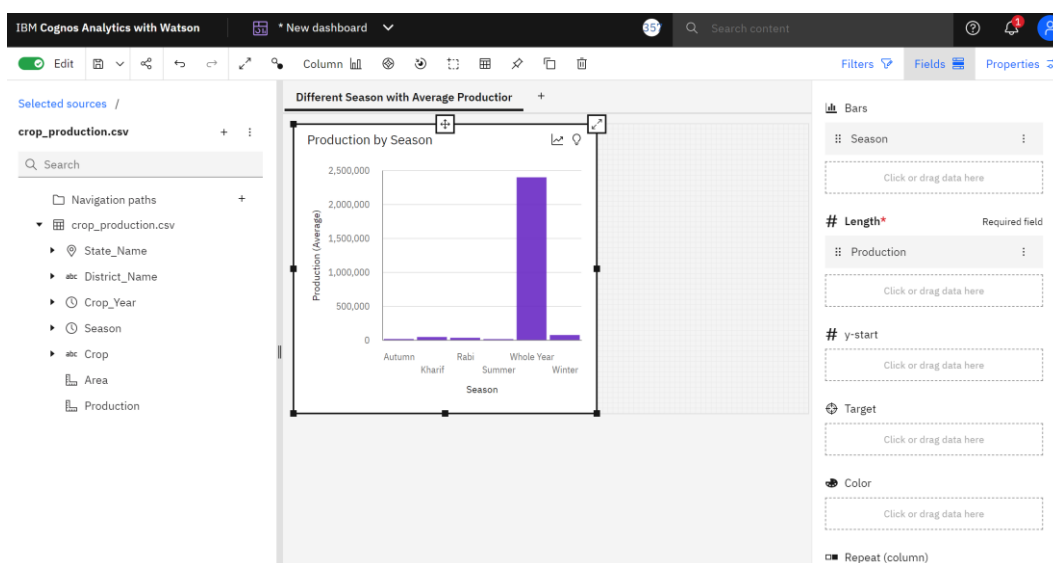


Figure 2: Different Seasons with Average Production

Column chart with different colours

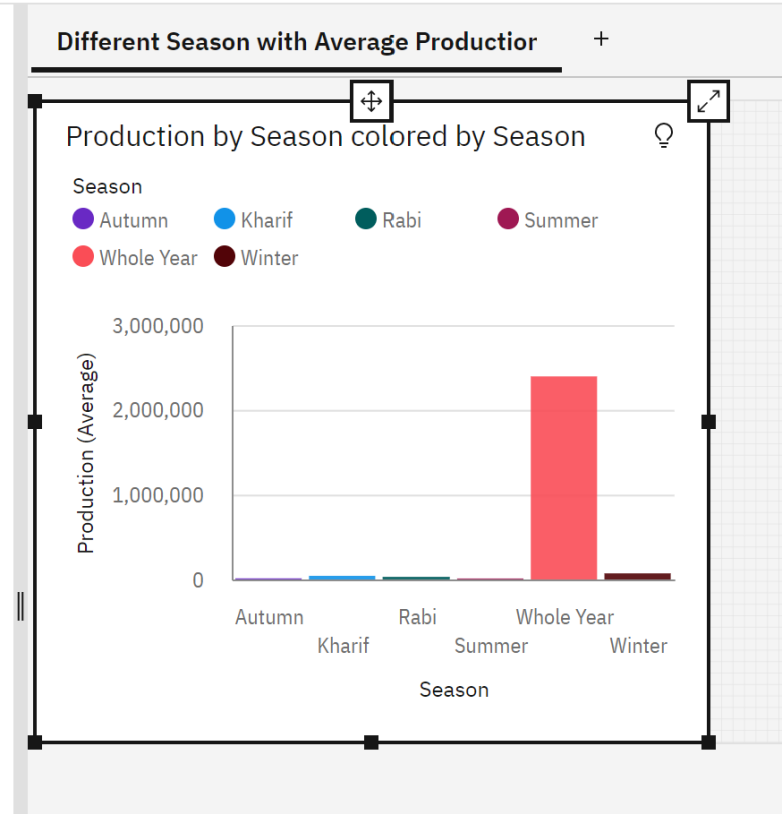


Figure 3:Different Seasons with Average Production

Column chart with values as labels

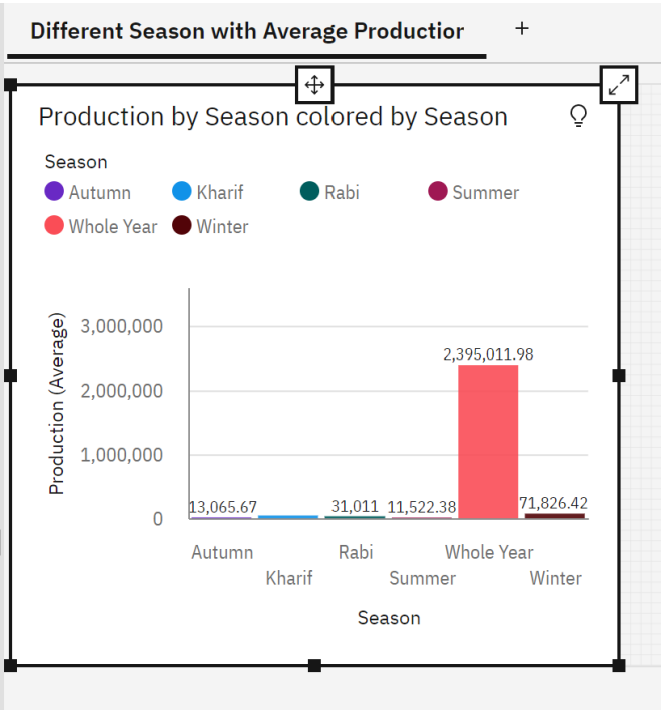


Figure 4:Different Seasons with Average Production

Column chart after changing colour palette

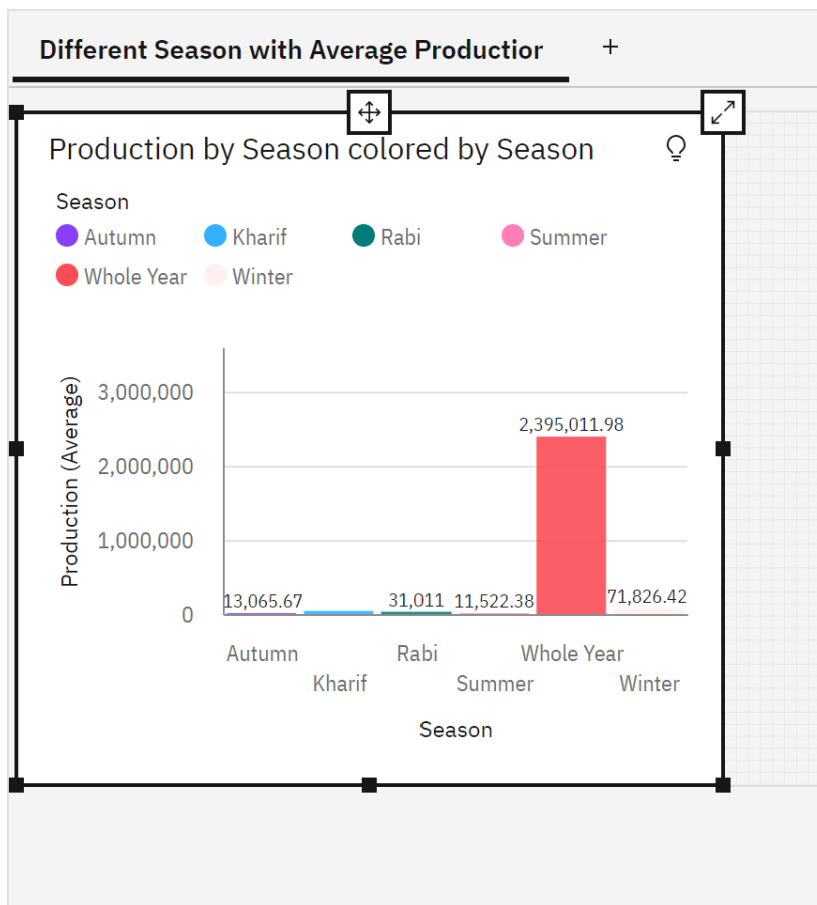


Figure 5: Final Chart for Different Seasons with Average Production of Crop

First Column chart completes.

2 Plotting two graphs With Years Usage of Area and Production.

Area graph 1

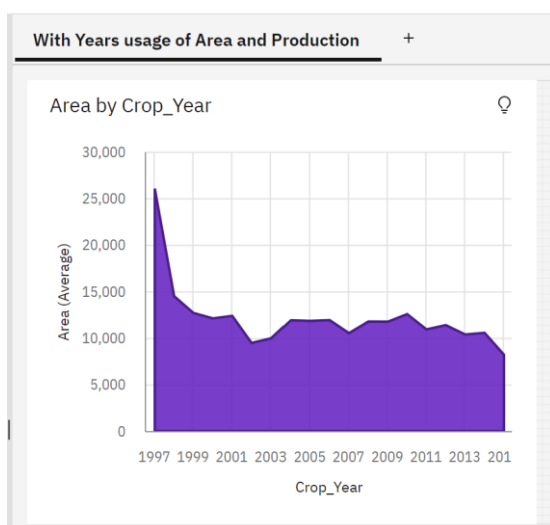


Figure 6: Graph With Years Usage of Area for Crop

Area Graph2

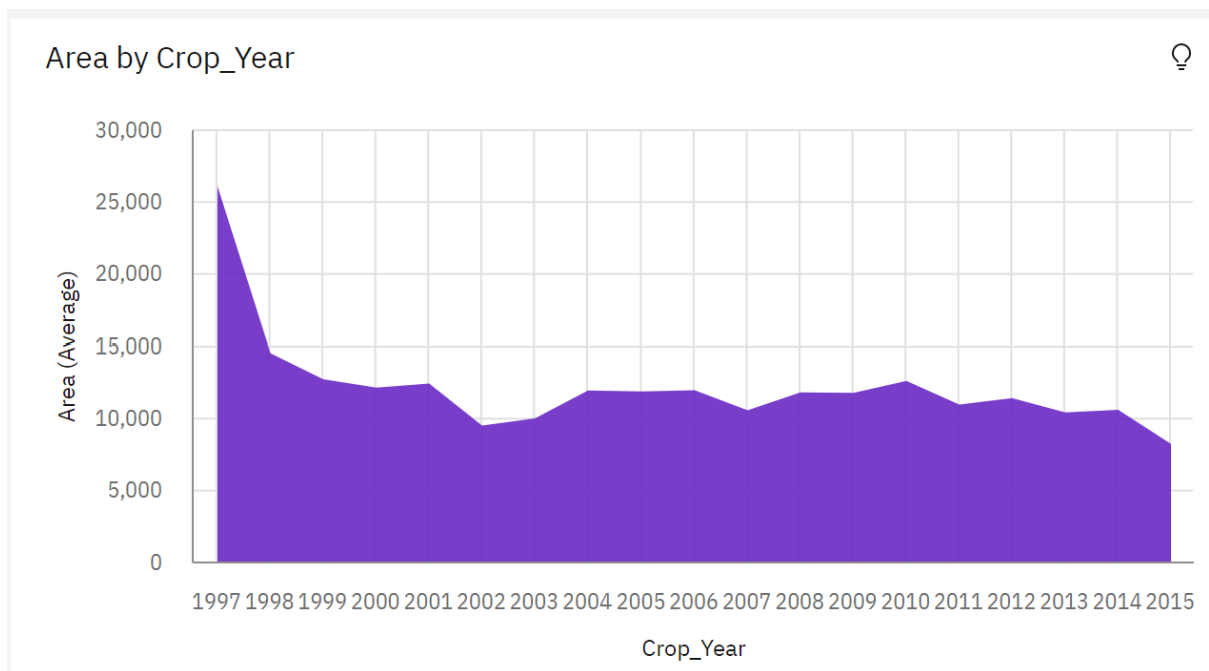


Figure 7: Final Graph With Years and Usage of Area for Crop

Line Graph 1

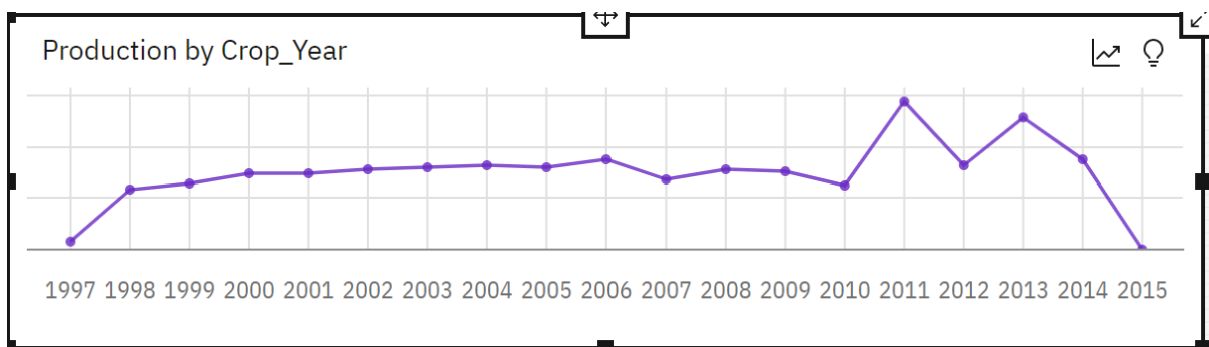


Figure 8: Line Graph for Yearly Average Production of Crop

Line Graph 2

Line graph Yearly average production (with change in colour and labels)

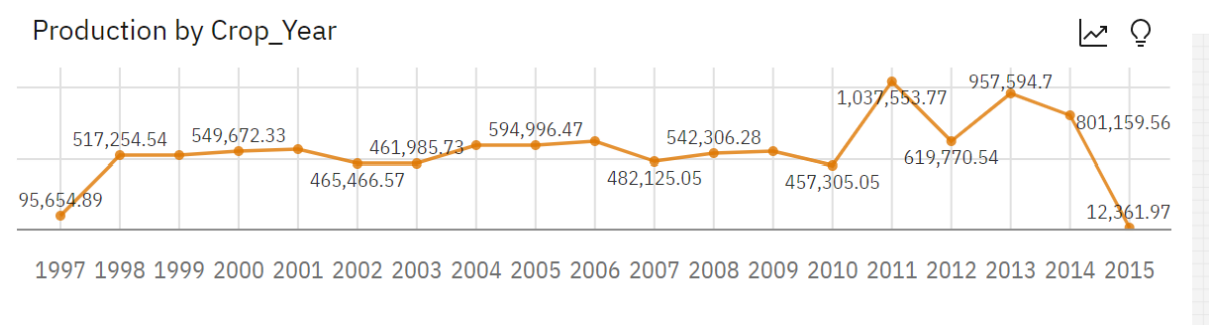


Figure 9: Final Line Graph for Yearly Average Production of Crop

Top 10 States With Most Area

Area by State_Name

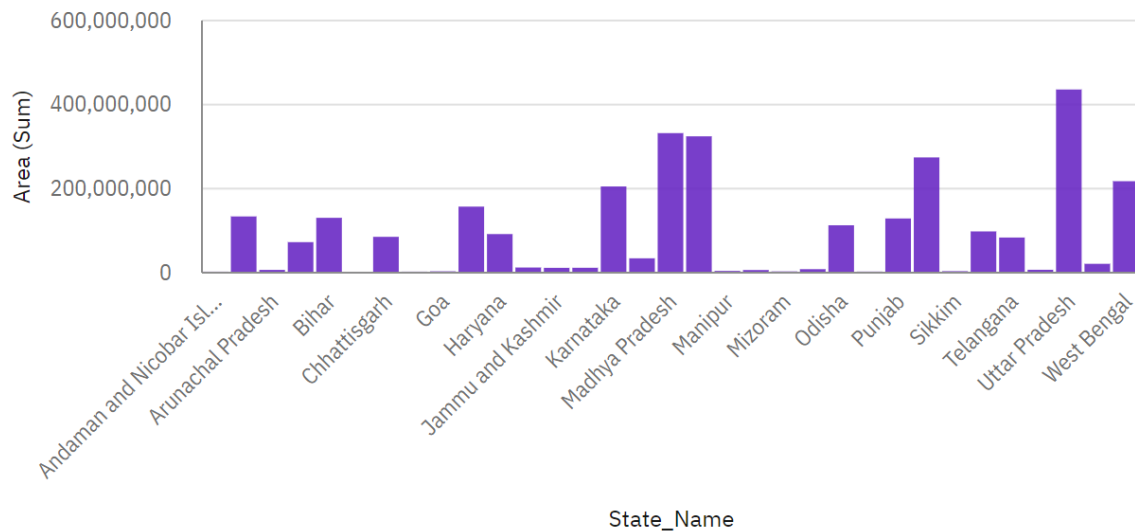


Figure 10: Column Chart for Top 10 States with Most Area

Top 10 States with Most Area-Chart 2 with average Area

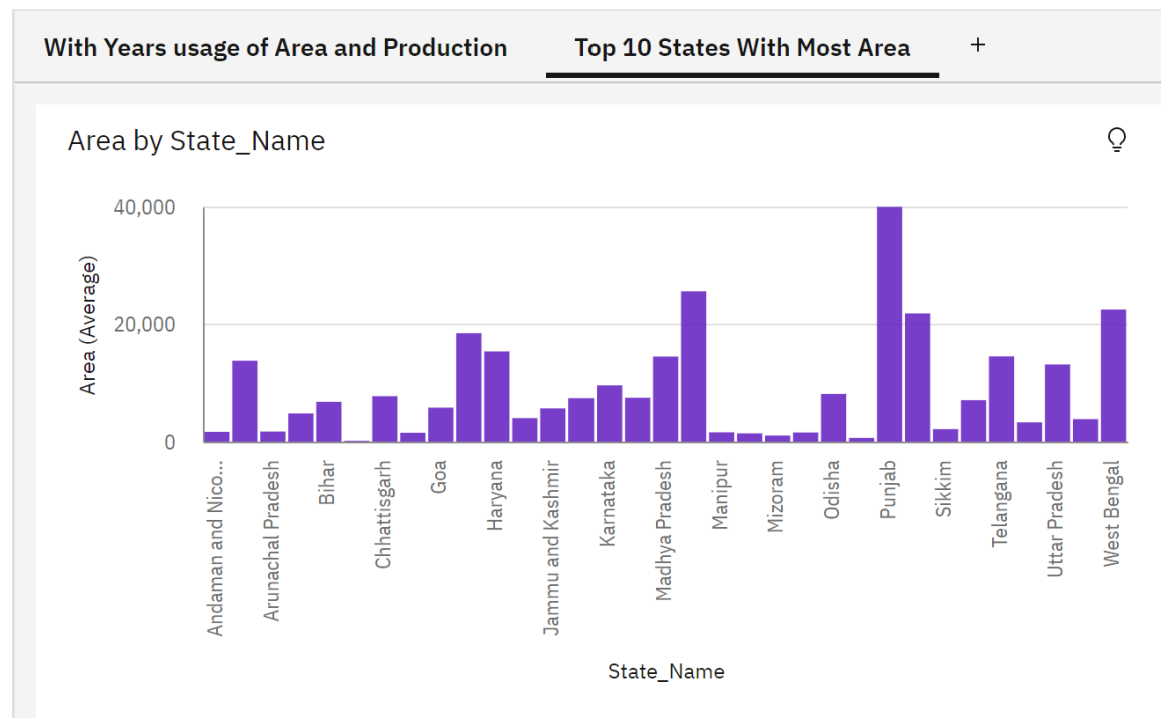


Figure 11: Column Chart for Top 10 States with Most Area

Top 10 States with most area-Chart 3

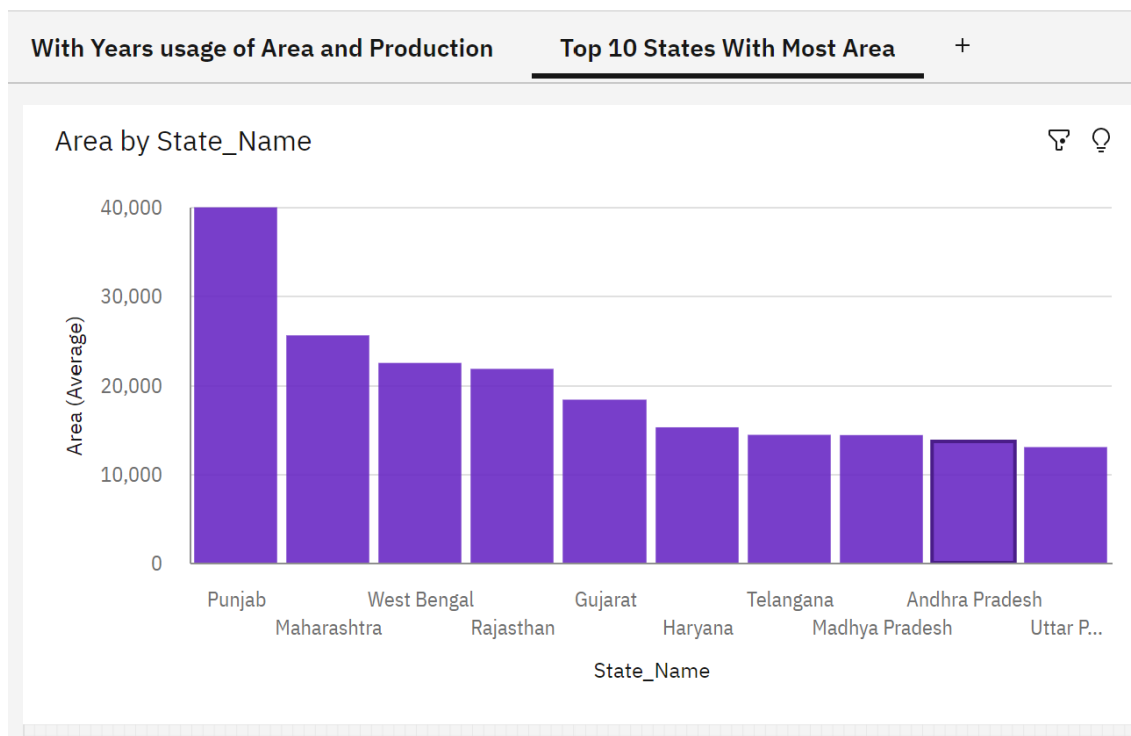


Figure 12: Column Chart for Top 10 States with Most Area

Top 10 states with most Area-Chart 4

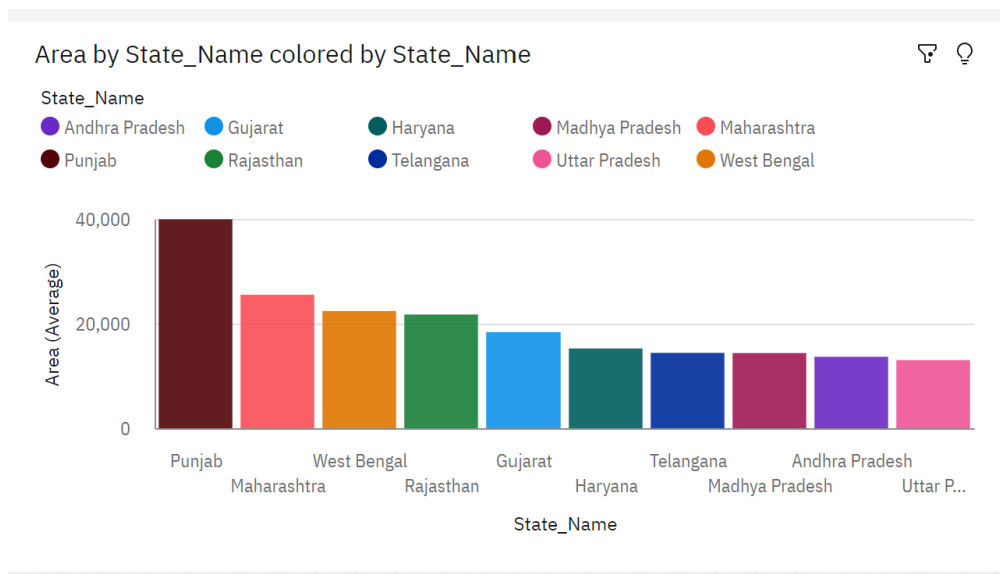


Figure 13: Column Chart for Top 10 States with Most Area

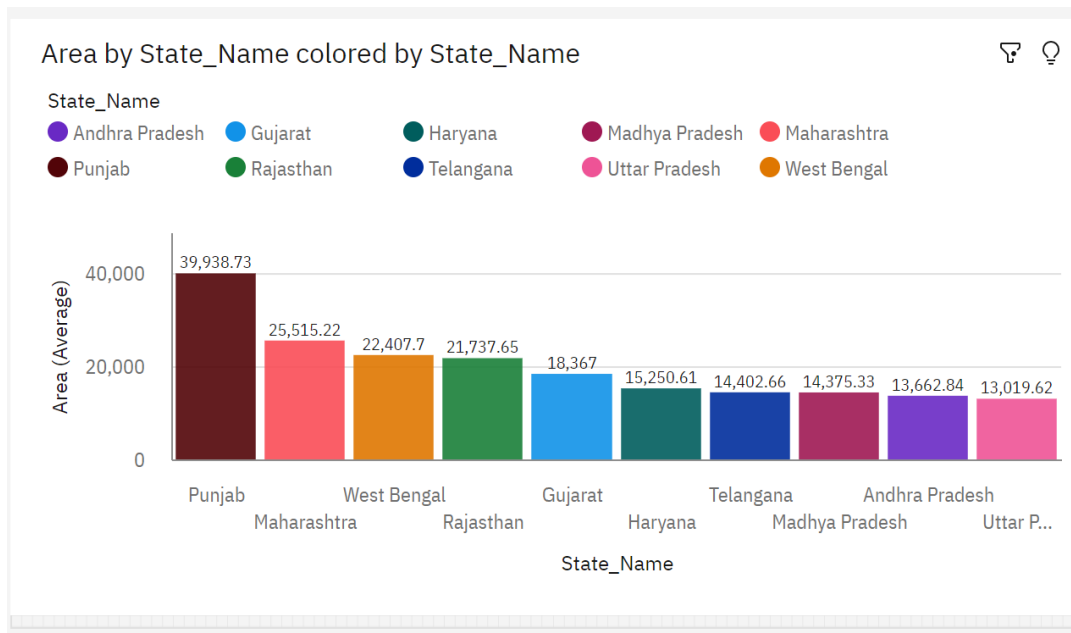


Figure 14: Final Column Chart for Top 10 States with Most Area

State With Crop Production-chart1



Figure 15:State With Crop Production

State With Crop Production-chart 2

State_Name for State_Name regions

State_Name

● Arunachal Pradesh

● Assam

● Gujarat

● Himachal Pradesh

● Maharashtra

● Nagaland

● Telangana

● Tripura

● West Bengal

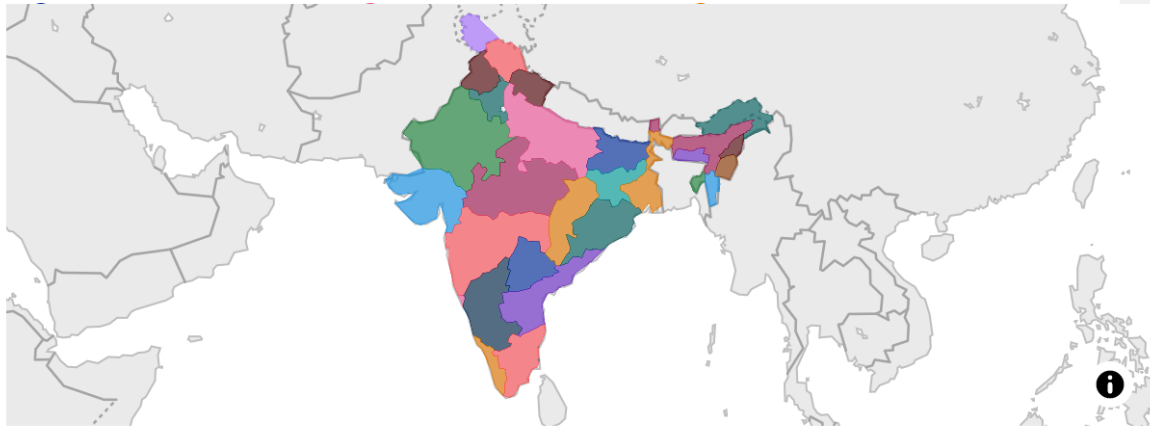


Figure 16: State With Crop Production

States With Crop Production for Banana-chart 3

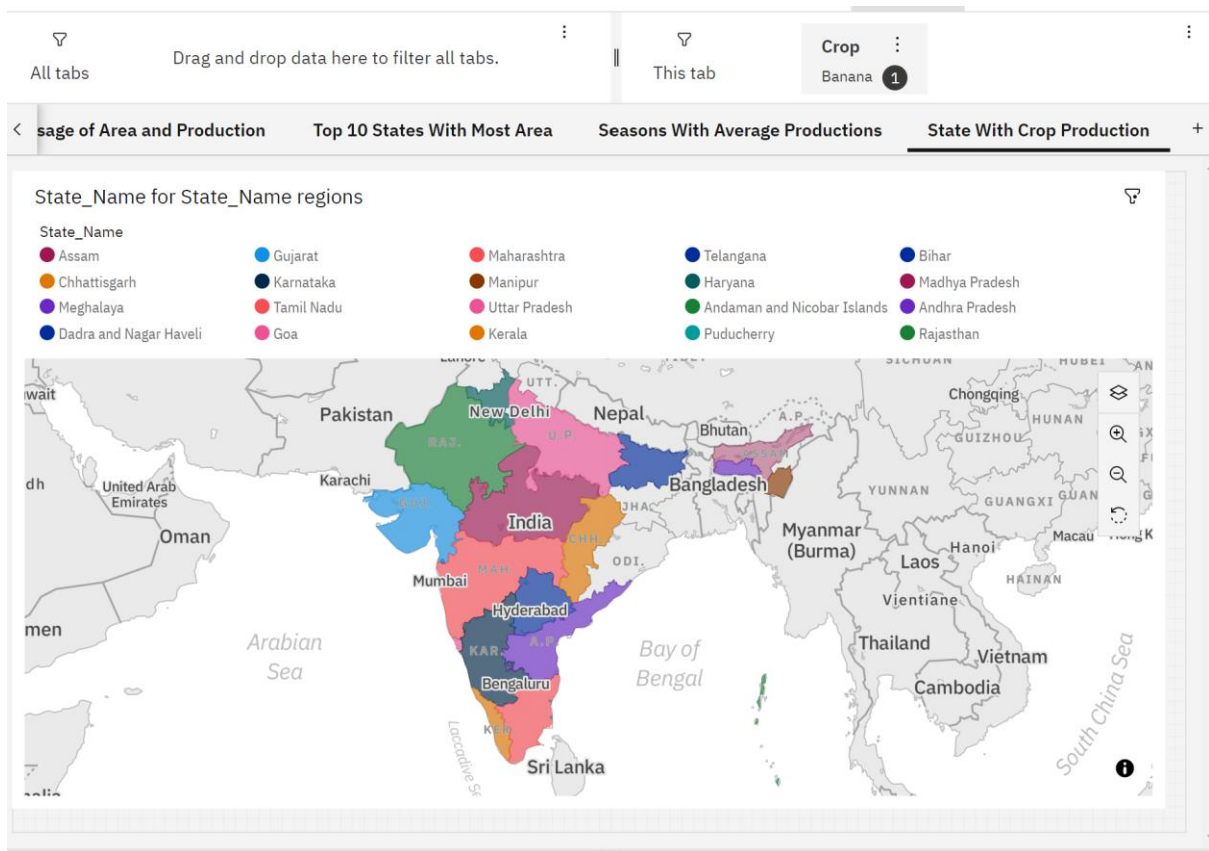


Figure 17: States With Crop Production for Banana

State With Crop Production Canvas added-chart 4,

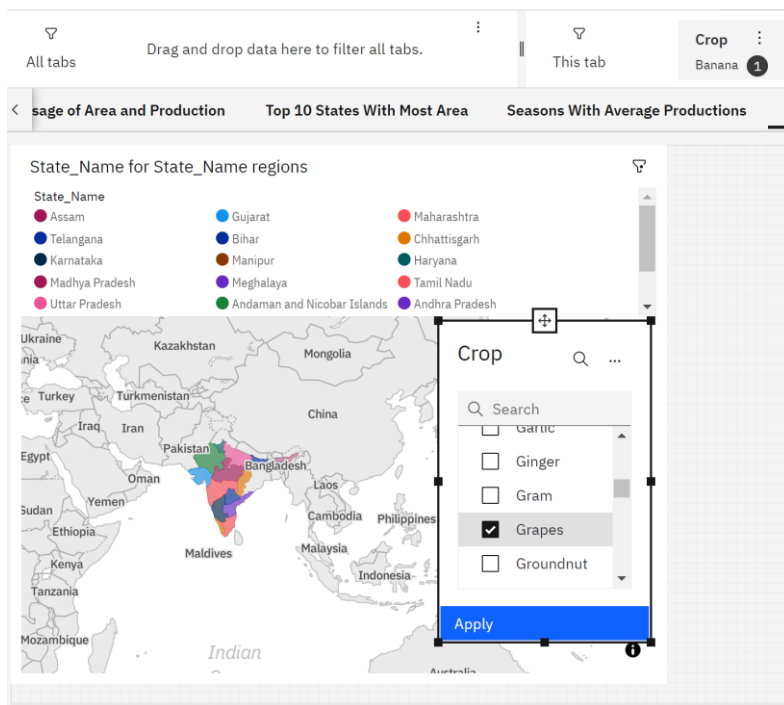


Figure 18: States With Crop Production for Banana with Canvas

State With Crop Production for Grapes Final Chart 5

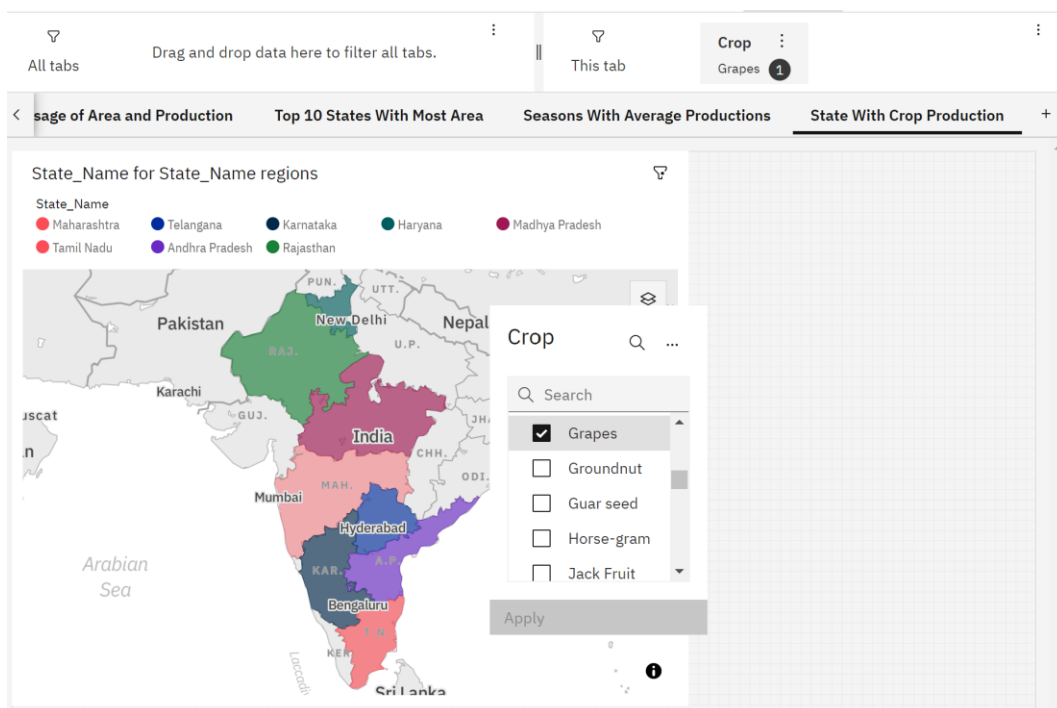


Figure 19: State With Crop Production for Grapes

States With The Crop Production Along With Season (Text Table 1)

The screenshot shows a data visualization interface with a tabbed navigation bar. The active tab is "States With The". Below the tabs, there is a table titled "State_Name and Crop". The table has two columns: "State_Name" and "Crop". The "State_Name" column contains the text "Andaman and Nicobar Islands". The "Crop" column contains a list of crops: Arecanut, Arhar/Tur, Banana, Black pepper, Cashewnut, Coconut, Dry chillies, Dry ginger, Groundnut, Maize, Moong(Green Gram), Other Kharif pulses, and Rice. The table is displayed on a grid background.

State_Name	Crop
Andaman and Nicobar Islands	Arecanut
Andaman and Nicobar Islands	Arhar/Tur
Andaman and Nicobar Islands	Banana
Andaman and Nicobar Islands	Black pepper
Andaman and Nicobar Islands	Cashewnut
Andaman and Nicobar Islands	Coconut
Andaman and Nicobar Islands	Dry chillies
Andaman and Nicobar Islands	Dry ginger
Andaman and Nicobar Islands	Groundnut
Andaman and Nicobar Islands	Maize
Andaman and Nicobar Islands	Moong(Green Gram)
Andaman and Nicobar Islands	Other Kharif pulses
Andaman and Nicobar Islands	Rice

Figure 20: States With The Crop Production

States With The Crop Production Along With Season (Text Table 2)

The screenshot shows a data visualization interface with a tabbed navigation bar. The active tab is "States With The". Below the tabs, there is a table titled "State_Name and Crop". The table has two columns: "State_Name" and "Crop". The "State_Name" column contains the following states: Andhra Pradesh, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, and Telangana. The "Crop" column contains the text "Grapes" for all states. The table is displayed on a grid background.

State_Name	Crop
Andhra Pradesh	Grapes
Haryana	Grapes
Karnataka	Grapes
Madhya Pradesh	Grapes
Maharashtra	Grapes
Rajasthan	Grapes
Tamil Nadu	Grapes
Telangana	Grapes

Figure 21:States With The Crop Production

States With The Crop Production Along With Season (Text Table 3)-better visuliasation

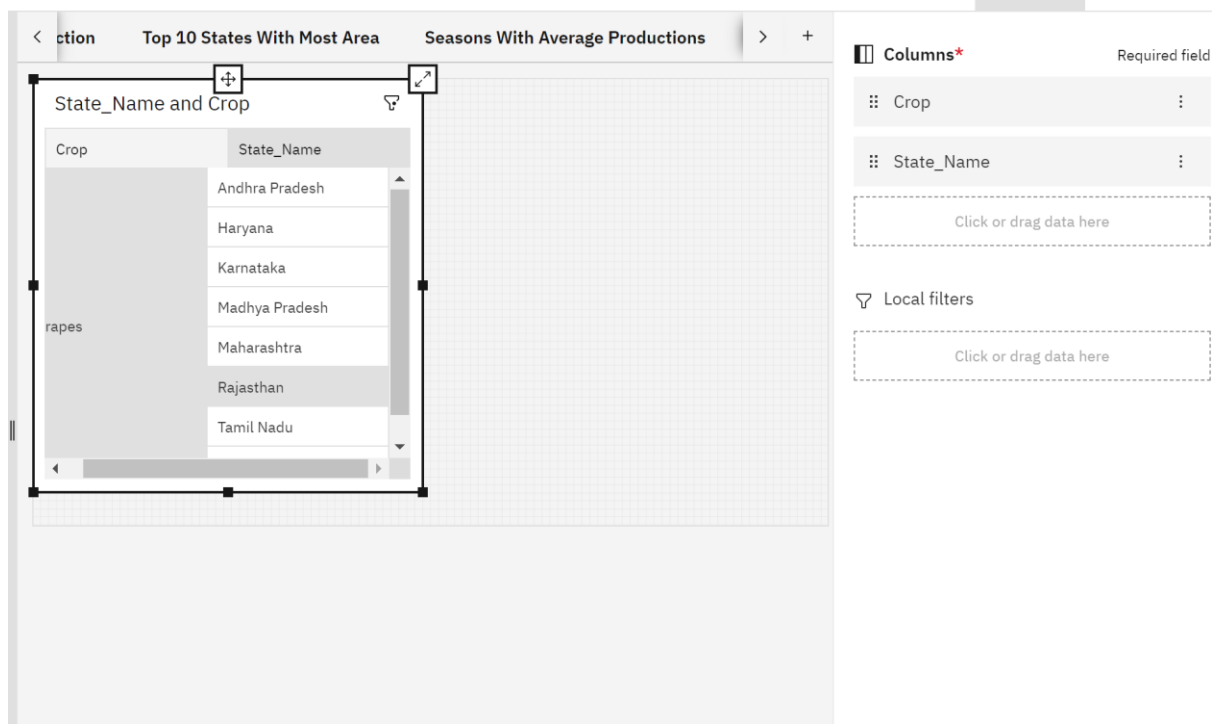


Figure 22:States With The Crop Production

States With The Crop Production Along With Season (Text Table 1)

The contents can be shown in text table as below instead of bar diagram.

State_Name and Crop	
Crop	State_Name
Grapes	Andhra Pradesh
	Haryana
	Karnataka
	Madhya Pradesh
	Maharashtra
	Rajasthan
	Tamil Nadu

Season and Crop	
Crop	Season
Grapes	Whole Year

Figure 23:States With The Crop Production Along With Season

I got only one option in season as whole year but in video Kharif and Whole year both options are shown. I did it again in another tab and got following

Production Along W		States With The Crop Production Along W	Tab 2
Season and Crop			
Crop	Season		
Grapes	Kharif		
	Whole Year		

Figure 24: Final Table for Crop Grape with Season

Dash Board for Guided Project

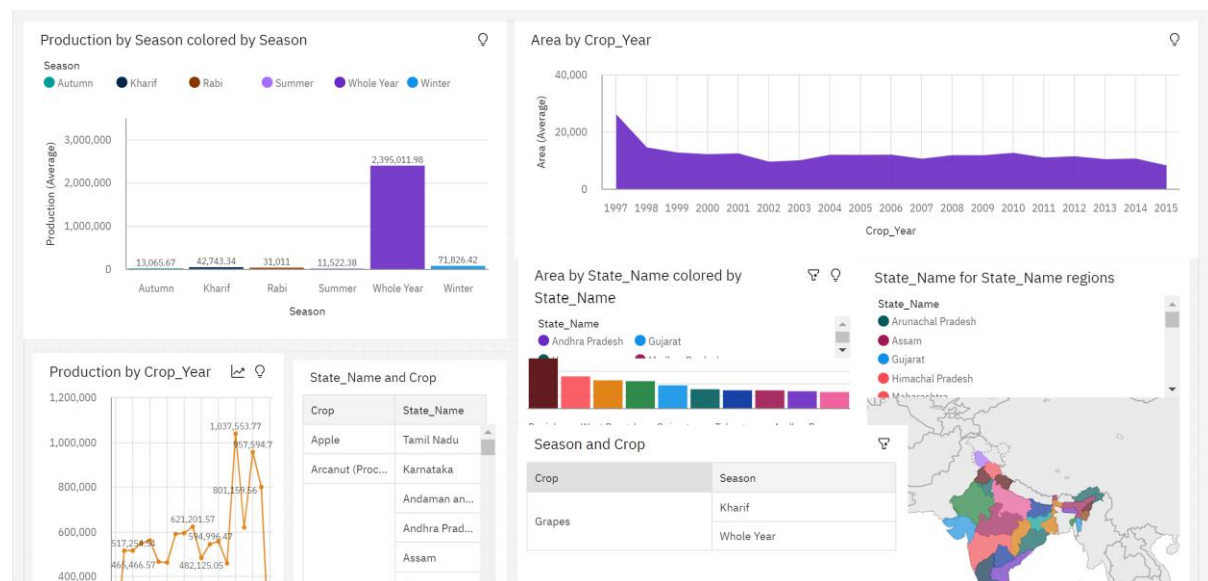


Figure 25: Dash Board for Guided Project