Agriculture Data Analytics In Crop Yield Estimation Using IBM Cognos

1) Introduction

1.1 Overview

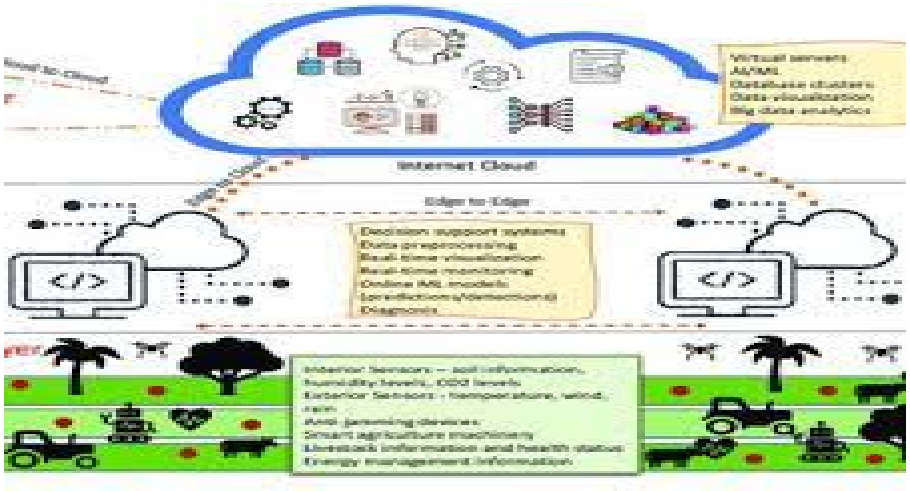
Crop production in India is one of the important sources of income and India is one of the top countries to produce crops. As per this project we will be analyzing some important visualization, creating a dashboard and by going through these we will get most of the insights of Crop production in India.

1.2 Purpose

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.

2) Theoretical Analysis

2.1 Survey : The agriculture sector employs nearly half of the workforce in the country. However, it contributes to 17.5% of the GDP.Although India ranks third in the production of rice, its yield is lower than Brazil, China and the United States. The same trend is observed for pulses, where it is the second highest producer



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3.2 Hardware / Software designing

Hardware : Data Set

Software: IBM Cognos Analytics Tool

4) Experimental Investigations

Improved crop protection by leveraging AI to better understand and proactively alert growers to critical daily crop stress levels, identify signs of pests and diseases, and more effectively assess current risk levels of crops.

• Increased yield optimization with bench marking and validation against yield models for comparable soil and weather conditions as well as support for better decisions around irrigation, product application, and planting and harvest timing.

• Smarter in-season trading with productivity assessments and decision guidance as well as probabilistic weather conditions that feature detailed analysis of sub-seasonal and seasonal forecasts.

Faster, smarter decisions for agriculture

Watson Decision Platform for Agriculture helps overcome these obstacles by combining the power of Artificial Intelligence (AI), analytics, and predictive insights with unique agricultural Internet of Things (IoT) data, the expertise of veteran industry leaders, and decades of IBM research. The result is a suite of customized low-cost solutions that help stakeholders across roles make faster, more informed agricultural decisions to support:

• Increased profitability by yielding more bushels or tons per hectare across common crops.

• Improved sustainability with deeper insights into factors such as crop input optimization, energy consumption, land and water use, soil conservation, soil carbon content, greenhouse gas emissions.

• Higher quality such as increased protein content in barley or sugar content in beets

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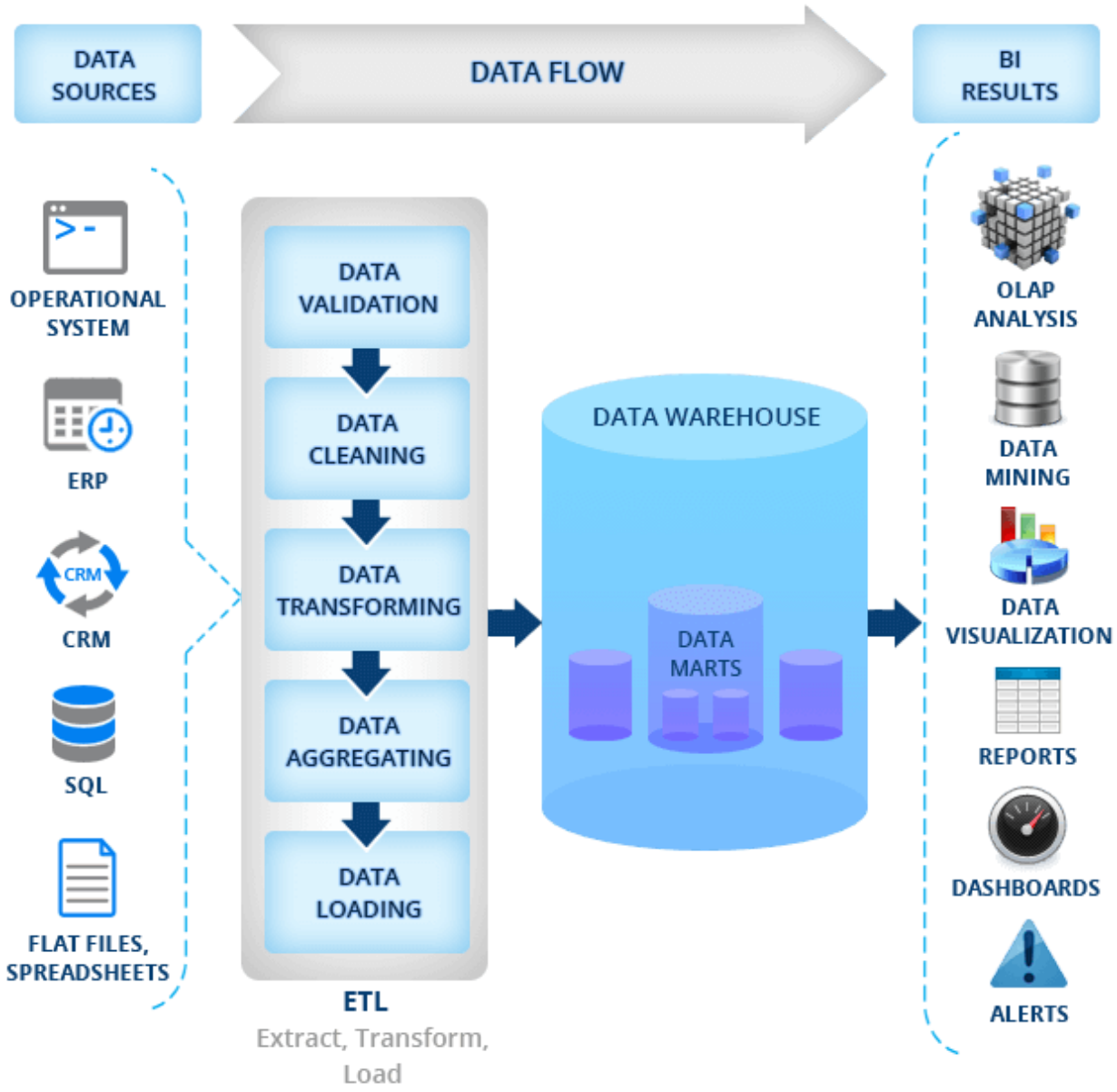
5) Flowchart



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6) Result

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.

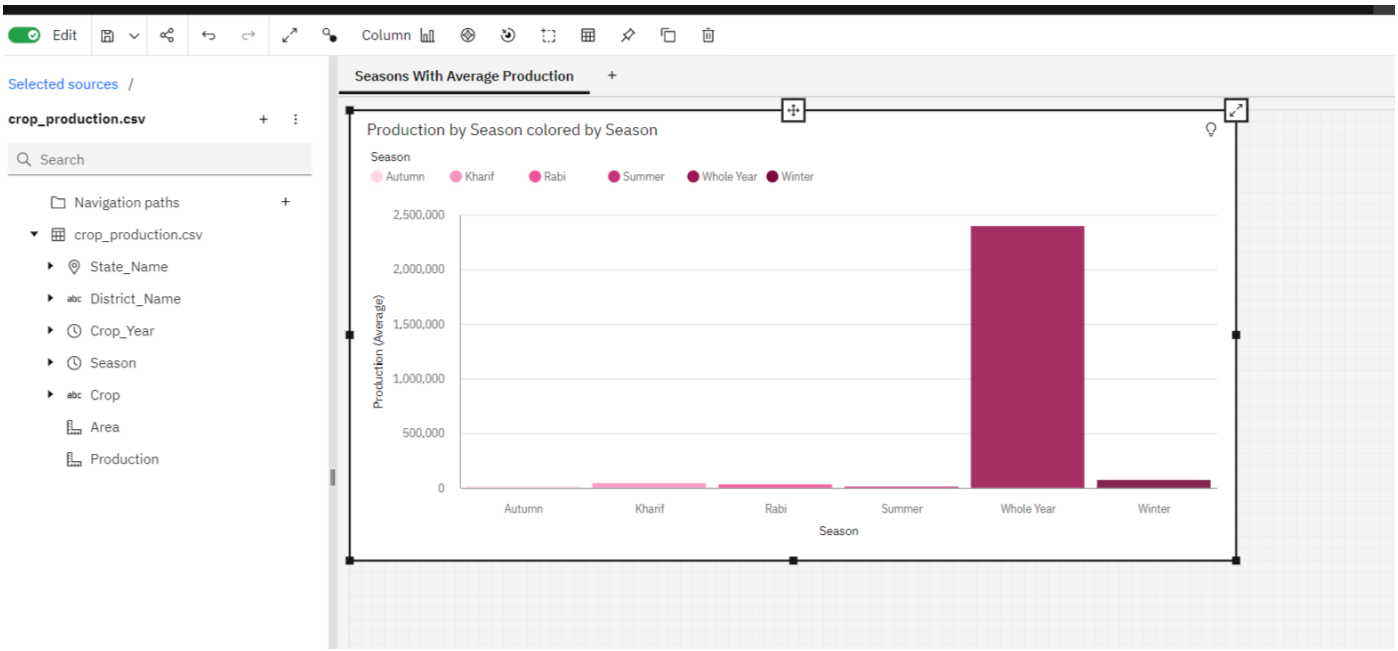
4. Season – Different seasons for crop production.

5. Area- Total number of areas covered.

6. Production- production of crops.

6.1) Seasons With Average Production

Seasons With Average Production



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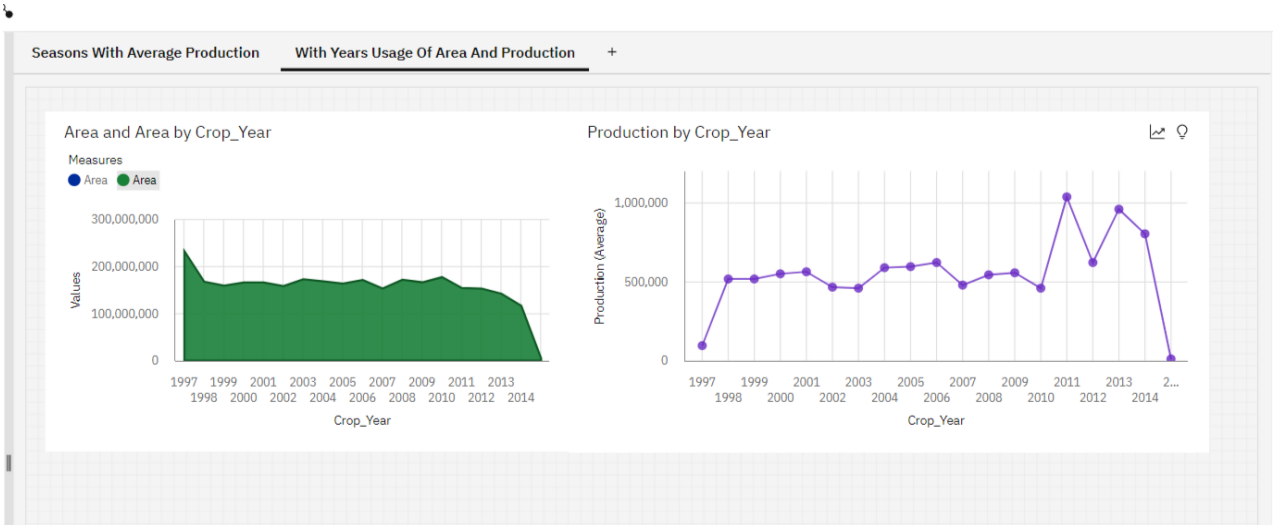
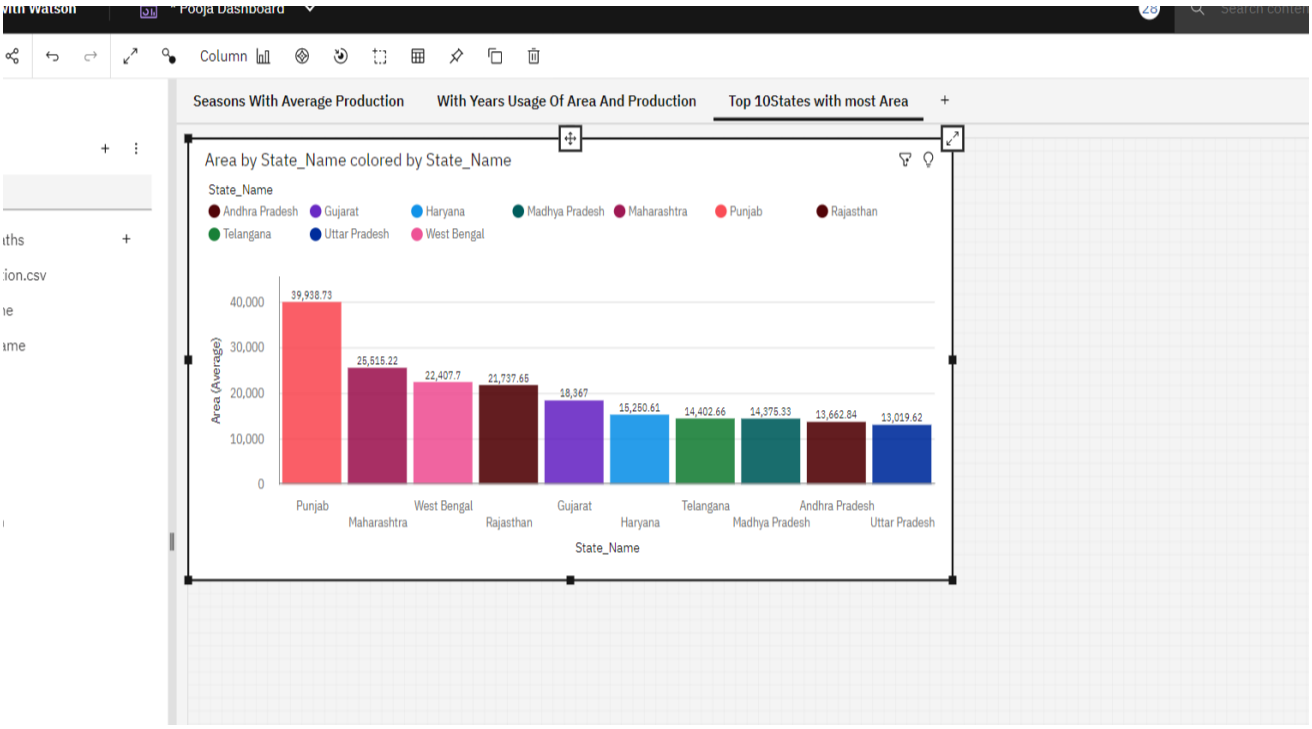
6.2) With Years Usage Of Area An dProduction



6.3) Top 10 States with most Area



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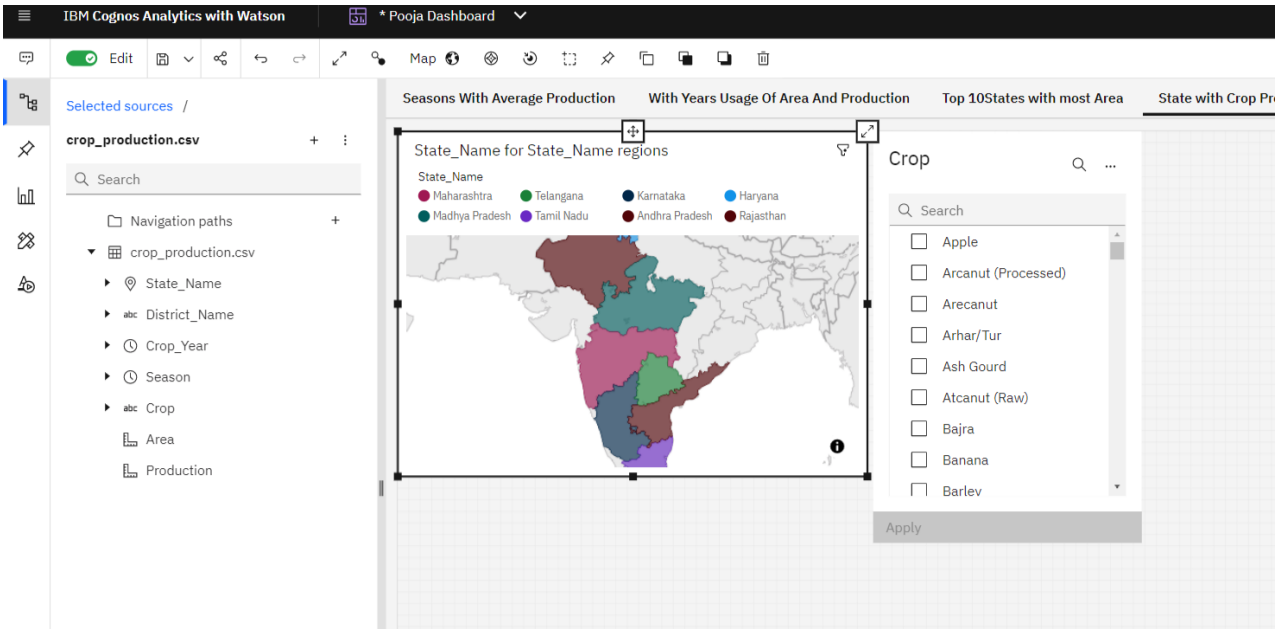
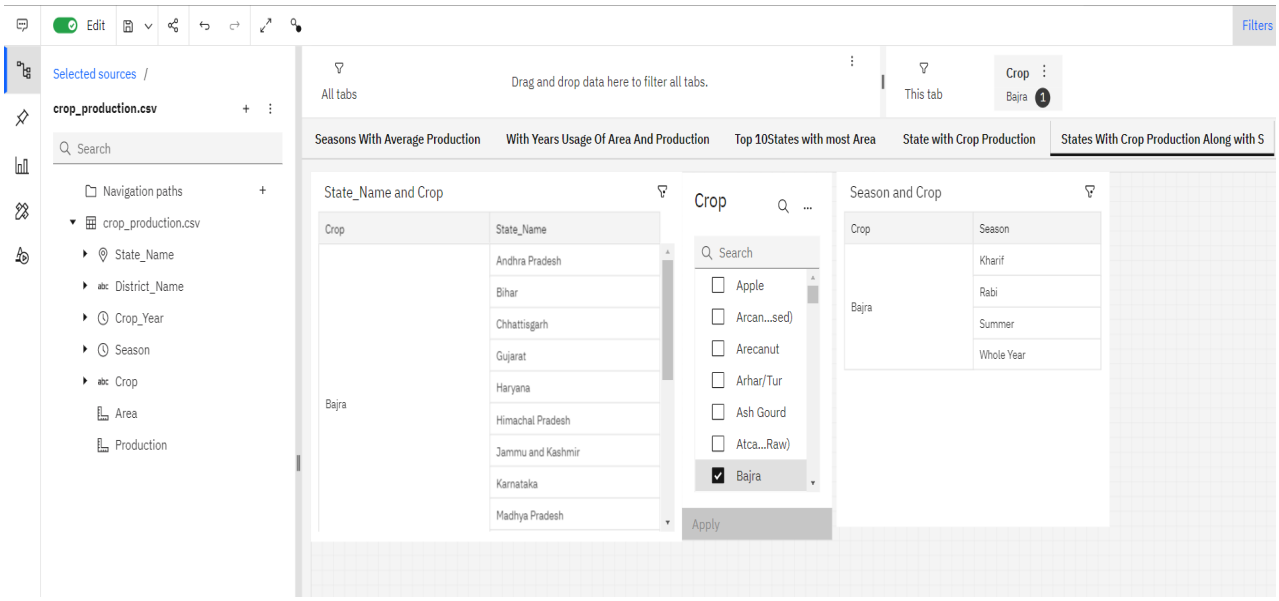
6.4 State with Crop Production



6.5 States With Crop Production Along with Season



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