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 Objective:

1. Fundamenal concepts and practise on IBM Cognos Analytics.
2. Gain a broad understanding of plotting different graphs.
3. Able to create meaningful dashboards.

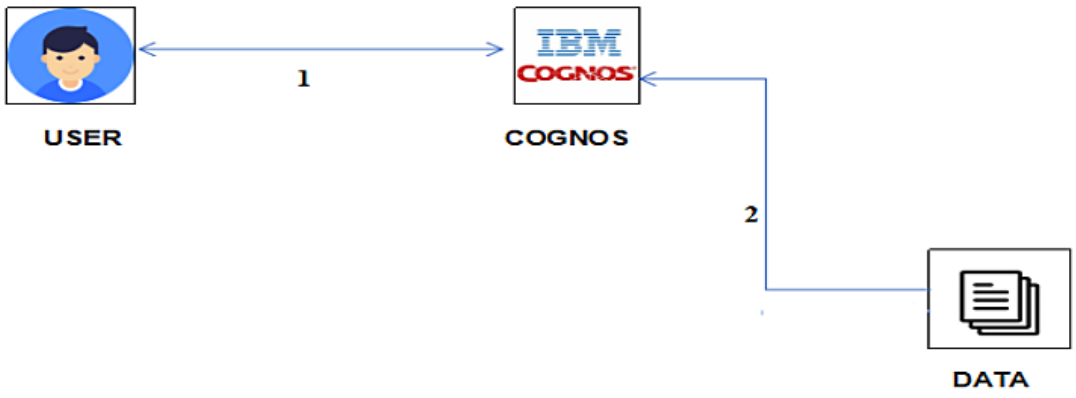
Literature Survey:

We can create basic charts and graphs in this IBM Cognos without any difficulties but we are unable to creayte advance charts and graphs that is animated charts and graphs so that it can be very attractive to present the data to clients.

There should be online option to create online animated charts and graphs with out any difficulties so that we can present the data to clients.

Theoritical Analysis:

Below is diagrammatic view of **IBM Cognos**:



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Experimental Investigation:

1. Highest average production by season is Whole Year and lowest is in summer.
2. Top 3 states with most area Punjab, Maharashtra and West Bengal.
3. Highest average crop production year is 2011.
4. There are total 124 crops are present 33 states present in dataset.

Flowchart:

1. We created multiple analysis graphs and charts using data set.
2. Using the analyzed chart creation of Dashboard is done.
3. Saving and Visualizing the final dashboard in the IBM Cognos Analytics.

To accomplish this, we have completed all the activities and tasks listed below:

1. Created IBM Cloud Account
2. Successfully logged in to Cognos Analytics
3. Worked with the Crop Production Dataset
4. Understand the same Dataset
5. Loaded the same Dataset
6. Data visualization following charts:
    a. Seasons with average productions
    b. With years usage of Area and Production
    c. Top 10 States with most area
    d. State with crop production
    e. States with the crop production along with season (Text Table)
7. Dashboard Creation
8. Export the Analytics

Result:

- We are able to create user interface dashboard without any difficulties so that we can present the dataset in dashboard. It also help us to easily filter the data using year, season, crop, state and districts.

- Top 3 states to produce carrots is Tamilnadu, Manipur and Jammu and Kashmir.

- In Autumn season, there are only 9 states produce crops.

Applications:

Doing a crop estimate is a method of measurement and forecasting whereby analysts or

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farmers predict or estimate the potential tonnage of a particular crop. This may be for a certain field or for a farm or even nationwide. Therefore, we can divide estimates into two categories; national crop estimates and personal crop estimates.

The national crop estimate is the forecasting of the expected harvest for the entire country. This is performed by a dedicated team of analysts and economists who use a combination of methods to determine a given tonnage figure. This figure will change throughout the season as the conditions change.

Estimates will be done at different stages throughout the season to try and be as accurate as possible. The methods used to perform the crop estimates are based on information available through the season.

Conclusion:

Agriculture is an important part of India's economy and at present it is among the top two farm producers in the world. This sector provides approximately 52 percent of the total number of jobs available in India and contributes around 18.1 percent to the GDP. Agriculture is the only means of living for almost two-thirds of the employed class in India. Thereform we should do Crop Yield Estimation regularly.

Role of agriculture in Indian economy:

- Share in National Income:
- Largest Employment Providing Sector:
- Contribution to Capital formation:
- Providing Raw Material to industries
- Market for Industrial Products: