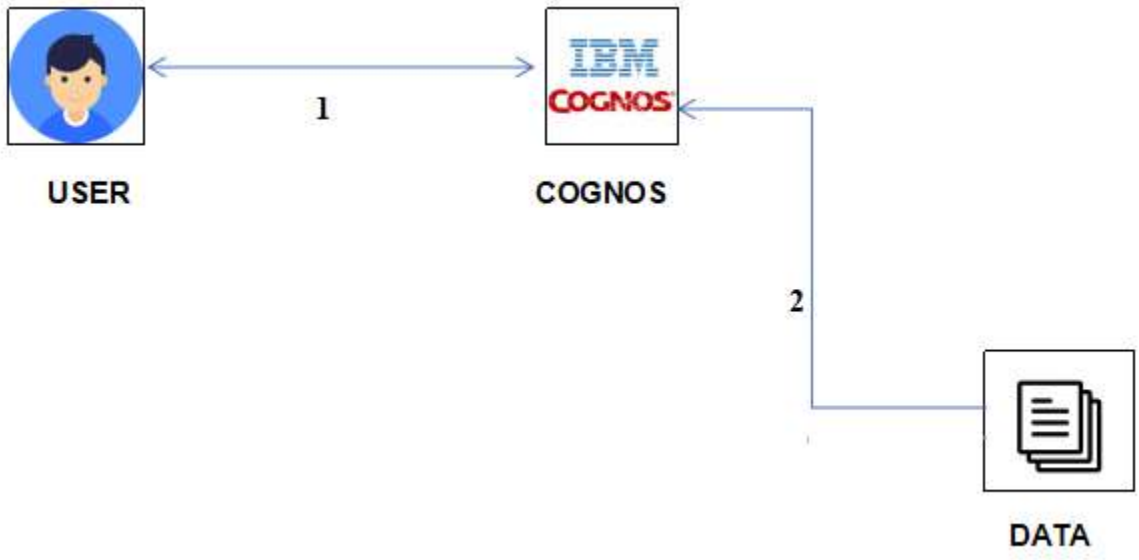
Problem Statement

Estimate The Crop Yield Using Data Analytics

Crop production in India is one of the most 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.

Technical Architecture:



Solution Requirements

Service Used: IBM Cognos Analytics.

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 the Dashboard is done.
- Saving and Visualizing the final dashboard in the IBM Cognos Analytics.

To accomplish this, we have to complete all the activities and tasks listed below

- IBM Cloud Account
- Login to Cognos Analytics
- Working with the Dataset
    - Understand the Dataset
    - Loading the Dataset
- Data visualization charts
    - Seasons with average productions
    - With years usage of Area and Production
    - Top 10 States with most area
    - State with crop production
    - States with the crop production along with season (Text Table)
- Dashboard Creation
- Export the Analytics

IBM Cloud Account

Create and login to IBM Account.

Link: IBM Cloud Account Creation

IBM Cognos Analytics

Create Cognos Analytics Account.

Link: IBM Cognos Account Creation

Working With The Dataset

To work on the given dataset, you need to first Understand the Dataset and the Load it to Cloud platform then Build the required Visalizations to provide various visual analytical solutions.

Understanding The Dataset

This project is based on a understanding the crop production of India .Download the dataset from the below link. It has 2,46,092 data points (rows) and 6 features (columns) describing each crop production related details.

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.

Loading The Dataset

Before you can build a view and analyze your data, you must first connect the data to IBM Cognos. Cognos supports connecting to a wide variety of data, stored in a variety of places. The data might be stored on your computer in a spreadsheet or a text file, or in a big data, relational, or cube (multidimensional) database on a server in your enterprise.
In our case, we will be using a spreadsheet or text file for making our analysis. Go through the video for understanding the connection of dataset in Cognos.

Explanation video:

Loading CP Dataset Cognos

Video Link1 : https://youtu.be/W6BSefEoD9E

Brief Introduction about Cognos Interface

Video Link 2 : **https://youtu.be/TLCPgRTgp6U**

Before plotting the different graphs and charts in Cognos watch a brief explanation video of the Cognos Interface.

Data Visualization Charts

Using the Crop production in Indian dataset, we plan to create various graphs and charts to highlight the insights and visualizations.
* Build a Visualizaiton to showcase Average Crop Production by Seasons.
* Showcase the Yearly usage of Area in Crop Production.

* Build a visualization to show case top 10 States in Crop Yeild Production by Area.
* Build the required Visualization to showcase the Crop Production by State.
* Build Viusal analytics to represent the Sates with Seasonsal Crop Production using a Text representation.

Seasons With Average Productions

As production of crops depends on different seasons, so let’s plot the graphs to visualize the average production based on different seasons. You can find the average productions briefing in this video.

Creating The Dashboard

Once you’ve created views on different tabs in Cognos analytics, you can pull them into a dashboard. Watch the video for your reference.

With Years Usage Of Area And Production

In our dataset we also have a year’s columns by which we will plot a line and area graphs to see the change in these both data with respect to increase in years. Brief explanation is given in the video provided below.

Top 10 States With Most Area

As we have an area data in our dataset, we will be plotting some graphs to visualize the top 10 Indian states with the most area as shown in the video.

State With Crop Production

There are so many different crops produced in Indian and most of us don’t know which crop is belongs to which state so we will be plotting and highlight the states in map according to different crops. Watch the video highlighting the states.

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

Taking forward the previous plot we will be fetching the state name and showing it in a text table whenever different crops are chosen. watch the video for brief explanation.

Creating The Dashboard

Once you’ve created views on different tabs in Cognos analytics, you can pull them into a dashboard. Watch the video for your reference.

Export The Analytics

Finally, it's to share your work either through email/link/pdf to showcase your works to others. See the video for understanding more about sharing the work docs.

Ideation Phase

In this milestone you are expected to get started with the Ideation process.

Literature Survey On The Selected Project & Information Gathering

In this activity you are expected to gather/collect the relevant information on project use case, refer the existing solutions, technical papers, research publications etc.

Prepare Empathy Map

In this activity you are expected to prepare the empathy map canvas to capture the user Pains & Gains, Prepare list of problem statements

Ideation

In this activity you are expected to list the ideas (at least 4 per each team member) by organizing the brainstorming session and prioritize the top 3 ideas based on the feasibility & importance.

Project Development Phase

In this milestone you will start the project development and expected to perform the coding & solutioning, acceptance testing, performance testing based as per the sprint and submit them.