

Estimate The Crop Yield Using Data Analytics

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Abstract :

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.

Project Objectives :

- 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

S.NO.	Title	Author	Year	Description
1	Rice Crop Yield Prediction using Data Mining	Dakshayini Patil, Dr. M .S, Shirdhonkar/	2017	Discussed various data mining techniques utilized for prediction of rice crop yield for the state of Maharashtra, India. WEKA tool was applied in dataset processing
2	A Survey on Crop Yield Prediction based on Agricultural Data	Dhivya B H, Manjula R, Siva Bharathi S,Madhumathi R	2017	Presented a survey on the different algorithms applied in the assessment and prediction of crop yield .Discussed about the mechanism of knowledge the discovery in Agricultural data mining

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3	A Study on Various Data Mining Techniques for Crop Yield Prediction	Yogesh Gandge, Sandhya	2017	Discussed various data mining techniques employed for predicting the crop yield and signifies the importance of accurate data extraction methods of big data analytics.
4	Big Data for weed control and crop protection	F K Van Evert, S Fountas, D Jakovetic, V Crnojevic, I Travlos & C Kempenaar	2017	Outlined Big Data analytics models with numerical algorithms applied Represent the importance of reforming the mined data in the form of understandable information to the farmers. Discussed about various advances, tools and algorithms applied in transforming the data in to easily understandable information to the framers and thrown a light on success story of Netherlands in achieving the maximum crop yield and their smart forming practices.

S.NO	Title	Author	Year	Description
5	The Impact of Data Analytics in Crop Management based on Weather Conditions	Swarupa Rani A	2017	Discussed the application of mathematical model like fuzzy logicvdesigns in optimization of the crop yield, artificial neural networks in validation studies, genetic algorithms designs in accessing the fitness of the model applied, decision trees, and support vector machines to study soil, climate conditions and water regimes related to crop growth and pest management in agriculture.
6	A Study on Crop Yield Forecasting Using Classification Techniques	R.Sujatha, Dr.P.Isakki Devi	2016	Discuss the importance of comparing previous agricultural data with present to identify optimum condition favor enhanced crop yield. Envisaged the importance of best crop selection depending on the season and the climatic factors which supports enhanced crop yield.

S.NO	Title	Author	Year	Description
7	Prediction of Crop Yield using Regression Analysis	Swarupa Rani A	2017	Regression analysis was carried out to find the relationship among the parameters i.e Area under Cultivation (AUC), Annual Rainfall (AR) and Food Price Index (FPI) which influences the final crop yield and reported that the crop yield principally depends on the Annual Rainfall (AR).
8	Data requirements for reliable crop yield simulations and yield- gap analysis	Patricio Grassinia, Lenny G.J. van Bussel, Hugo de Groote,Martin K. van Ittersumb, Kenneth G.	2015	Presented a case study (Nebraska - USA and at a national scale for Argentina and Kenya) on the application of an explicit rationale design approach in identifying the data sources which simulates Crop (maize) yield and also helps in quantifying the maize yield gaps.

S.NO	Title	Author	Year	Description
9	Prediction of crop yield using big data	Wu Fan, Chen Chong, Guo Xiaoling, Yu Hua Wang Juyun/ 2015	2015	Developed a novel model i.e Nearest neighbors modeling to calculate and predict the yield of crop depends on the available Big data sets.
10	The use of satellite data for crop yield gap analysis	David B. Lobell	2013	Discussed the use of remote sensing technology to identify and measure the causes of yield gaps and the assess the impact on the overall crop yield. Reported very simple methodologies to measure the yield difference with respect to season, environment and the land use.

S.NO	Title	Author	Year	Description
11	Yield gap analysis with local to global relevance-A review	Martin K. Van Ittersuma, Kenneth G. Cassmanb, Patricio Grassinib, Joost Wolfa, Pablo Titttonell, Zvi Hochmand	2014	Employed inquantify the crop yield potential on the data collected from the farmers ofwestern Kenya, Nebraska (USA) and Victoria (Australia). Study recommended for the use of accurate and current yield data, with calibrated and validated crop models and up scaling methods in the prediction of crop yield.
12	A tool for analysing vegetable crops data from a greenhouse using data mining techniques.	Ponce-Guevara, K. L., Palacios-Echeverria, J. A., Maya-Olalla, E.,Dominguez Limaico,	2017	Algorithm, which uses a decision tree based on the data entropy is used and results are visualized graphically.

S.NO	Title	Author	Year	Description
13	Using hybrid support vector regression to predict agricultural output.	Jheng, T.-Z., Li, T.-H., Lee, C.-P.	2018	Using hybrid support vector regression to predict agricultural output. Hybrid SVR models are used for prediction
14	Estimation of Arecanut Yield in Various Climatic Zones of Karnataka using Data Mining	Manjunatha, M., Parkavi, A.	2018	A Estimation of Arecanut Yield in Various Climatic Zones of Karnataka using Data Mining Technique: A Survey. Classified using fuzzy logic, decision trees, Multiple.Linear.Regression and Random Forest algorithm to predict the crop yield

S.NO	Title	Author	Year	Description
15	Agricultural production output prediction using Supervised Machine Learning techniques.	Shakoor, M. T., Rahman, K., Rayta, S. N., Chakrabarty, A.	2017	Agricultural production output prediction using Supervised Machine Learning techniques” Decision Tree Learning-ID3 (Iterative Dichotomiser 3) and K-Nearest Neighbors Regression algorithms are used for Prediction



THANK YOU