Final Project

Data Analytics for Process Improvement

Team Black

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Problem Statement

- Agriculture is the backbone of India's economy, providing employment to millions of people and contributing significantly to the country's GDP.

- Crop production in India is highly dependent on the monsoon season, which can be unpredictable and erratic, leading to crop failures and financial losses for farmers.

Project Deliverables

- A performance tool that can predict the crop yield and production for different crops, districts, and states across India based on historical data.

- By doing so, farmers and agricultural policymakers can make informed decisions about **crop selection**, irrigation, fertilization, and other agricultural practices.

- This can help improve crop productivity, reduce wastage, and increase profitability.

Data Provided

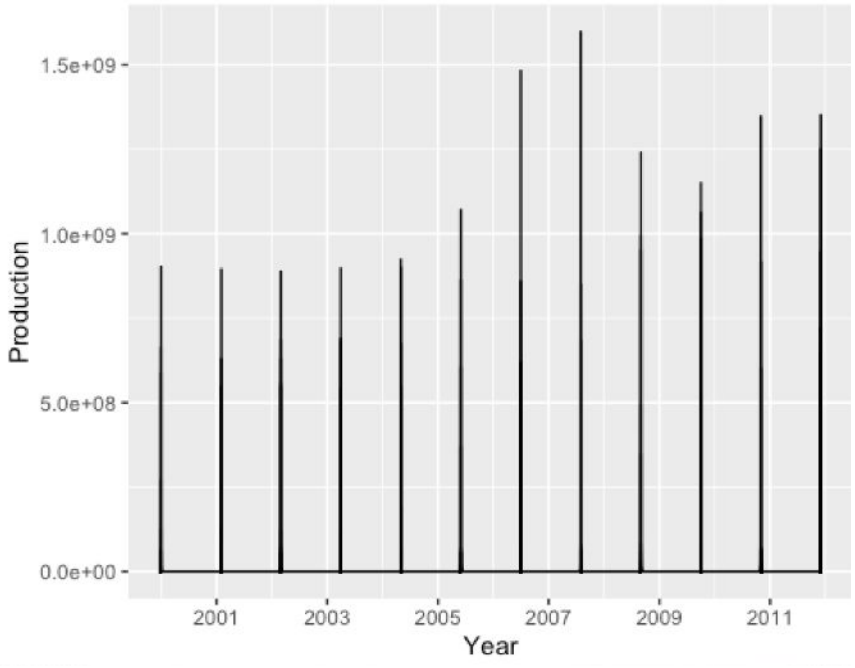
10	4	6	345407	832
Variables	Numeric Variables	Categorical Variables	Total number of Observations	Unique Categories

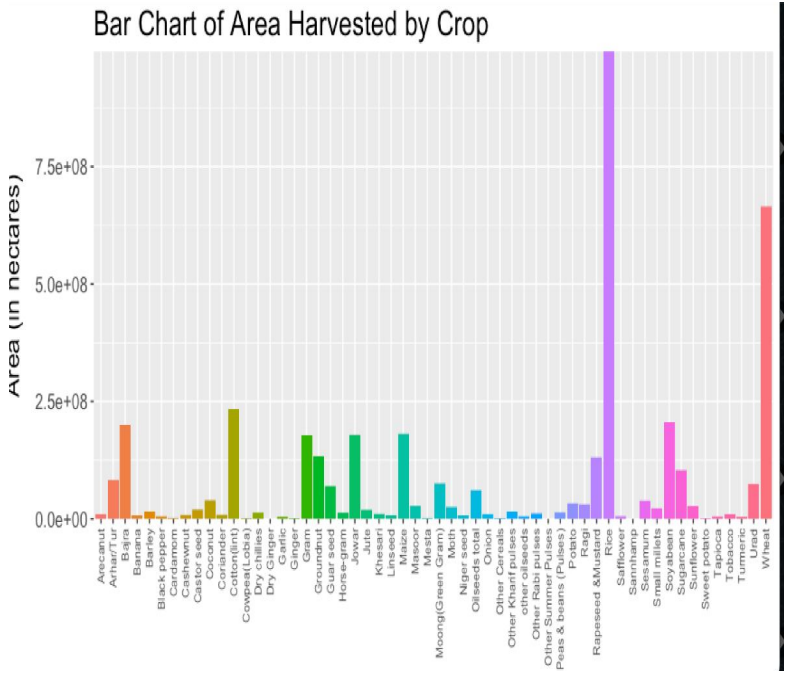
Variables:- State, District, Crop, Year, Season, Area, Area Units, Production, Production Units, Yield

Data Cleaning and Imputation

- Removed the rows with missing information.
- Changed the 3 production unites (tones, bales and nuts) into kilograms.
- Convert year into factor Variable

EDA


1.5e+09
1.0e+09
5.0e+08
0.0e+00
Production
2001
2003
2005
2007
2009
2011
Year


Bar Chart of Area Harvested by Crop
7.5e+08
5.0e+08
2.5e+08
0.0e+00
Area (in hectares)
Arecanut
Arhar/Tur
Bajra
Banana
Barley
Black pepper
Cardamom
Cashewnut
Castor seed
Coconut
Coriander
Cotton(lint)
Cowpea(Lobia)
Dry chillies
Dry ginger
Garlic
Ginger
Gram
Groundnut
Guar seed
Horse-gram
Jowar
Jute
Khesari
Linseed
Maize
Mascor
Mesta
Moong(Green Gram)
Moth
Niger seed
Oilseeds total
Onion
Other Cereals
Other Kharif pulses
Other Rabi pulses
Other Summer Pulses
Peas & beans (Pulses)
Potato
Ragi
Rapeseed &Mustard
Rice
Safflower
Sannhamp
Sesamum
Small millets
Soyabean
Sugarcane
Sunflower
Sweet potato
Tapioca
Tobacco
Turmeric
Urad
Wheat

Thank You