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Crop Price Prediction Using Machine Learning

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ABSTRACT: Agriculture is the backbone of our country. Agriculture Plays an important role in economy of the country. The demand of agricultural products continuously increases with increase in population. Farmers need to think of increase in crop yield with the limited amount of land. The suicide rate is increasing with every passing year because the farmers aren't able to get the desired price for their crops and farmer need to predict the crop before cultivating into agricultural land. Farmers are not getting the proper price for which they have cultivated. Yield of the crops depends on soil parameters, rainfall, and soil moisture. Price prediction is agriculture commodity has been a major problem for the farmers. The main aim is to provide new framework and develop a system with more efficient price prediction. Using machine learning techniques, the price prediction and crop analysis can be done which reduces the human efforts.

KEYWORDS: Crop Price Prediction, Study and comparison of machine learning algorithm for crops prices

I. INTRODUCTION

Agriculture Plays an important role of economy. As the population of the country increases, demand for the food also increases. So, we mainly focused on crop analysis and predicting the crop price using machine learning technique. Food is the most important aspect of our life, without it, people can't survive. Therefore, preserving food becomes an absolute aspect for countries all over the world, especially the developing countries. During the natural disaster preserving enough food for the people plays an important role for the government of such countries. Prices of crops, vegetables and fruits are very important necessity and people's lives are very closely related to it.

A crop price prediction is a widespread problem that occurs. During the rising season, a farmer had curiosity in knowing how much yield prediction become a matter of fact relied on farmers long-term experience for specific yield, crops and climatic conditions, Farmer directly goes for yield prediction rather than concerning on crop prediction with the existing system. So, there is need to attempt good technique for crop prediction in order to overcome existing problem.

Paper is organized as follows. Section II describes crop price prediction using machine learning algorithms. After this section, How the price prediction for crops will happen that is given in Section III. Section IV presents experimental results showing output of price predictions. Finally, Section V presents conclusion.

II. RELATEDWORK

Crop Price Prediction is an important agricultural problem to farmer. The agricultural yield primarily depends on whether condition (rain, temperature, Pesticides) Accurate information about the history of crop price is important for making decision related to agriculture industry for making future predictions. We have to predict the future price of the crop using prices of the crops. According to geographical location and climate change and production quantity. In this project, we use machine learning tools to aid the farmers for better price predictions.

The application is to guide farmers, as to which product to sow. So that by the time harvesting there is good return. The attempt is to develop an application which completely uses the machine learning and predicts the prices of crops. The main purpose of this is to produce better financial aspects to farmers. The objective of the study is to help farmers by producing timely information about the crops to be grown. By choosing crop type on its demand will be helpful for better economy.

III. METHODOLOGY

Algorithm for the crop price prediction is as follows:

- START
- Train model using machine learning algorithms
- Taking input from user
- The information then goes to the backend
- The information obtained is processed by trained machine learning model
- The Model prepares an answer as output
- Output is shown to the user
- STOP

The machine learning algorithm to train a model is follows:

- Logistic Regression
- Decision Tree
- SVC (Support Vector Clustering)
- Random Forest
- KNN (K- Neighbors Classifiers)

Modules Involved:

- Data Pre-processing: The Modules is referring to quality of data and important information that can be derived and affect the ability of our model to learn; Hence, it extremely important that we preprocess our data before feeding it into our model.
- Data Validation: This Module ensuring the accuracy and quality of data. It is implemented by creating several checks into a system or a report to ensure the logical consistency of input and stored data.
- Data Visualization: We translated our data into graphical information. After that, it represents graphical information in terms of charts, graphs, and maps. As there is one advantage that it provides an accessible way to see and understand trend, outlier and patterns in data.
- Outlier Detection Process: In this module, we identify the parameter that are affected by outlier tools. In order determine the outliers from high-dimensional data without prior knowledge, we obtain outliers based on distance measures that are capable of handling large data set.
- Comparing Best Accuracy and Entropy: After performing all the above steps, all data is ready to do Prediction for crop prices and the data is organized. After building this model using Machine learning algorithms, accuracy is also measured. The model is then used to predict the Crop Price Prediction.

IV. RESULT

Crop Price Prediction takes an input from user such as farmers name, Village name, District name, Temperature, Season details, Humidity level, crop details etc. and give cost yield and cost production. Predicting productivity of crop in various climatic condition can help the farmer and other partners leadership as agronomy and product decision.

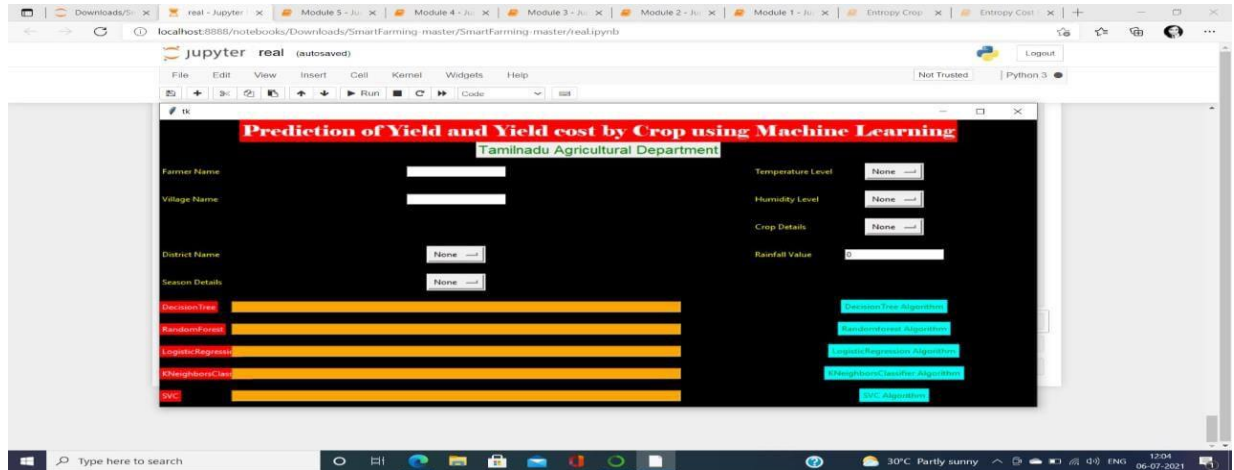


Fig 1: Input image

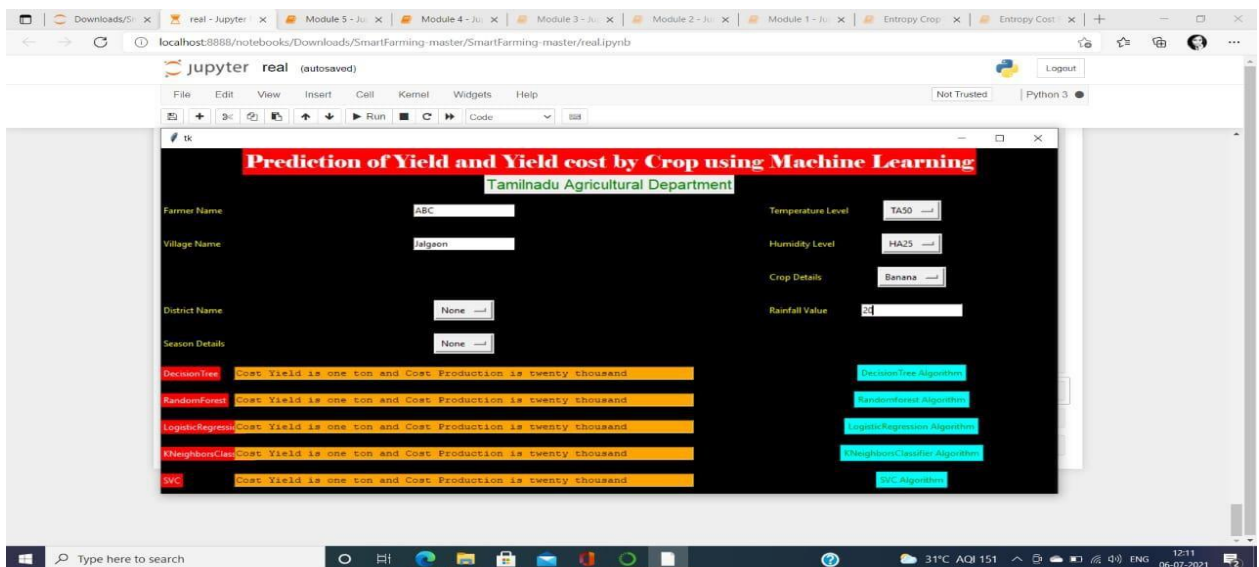


Fig 2: Output Image

V. CONCLUSION

The method is to provide help to the farmers for expecting the better amount for their crops and for predicting the best price for the crops. This also helps the farmers to check previous prices of different commodities. This system will allow farmers to make better decisions for bidding the better prices for their crops in the market. Finding crops that have special changing patterns over the years like decrease in predictions can help us understand the reason behind them in a more specific way.

VI. FUTUREWORK

As the time will pass, we will update our database which will lead to better prediction of crop prices. As of now this project is based on Tamilnadu but in near future we can use this database for other Indian states having similar whether conditions. We will also use available data to give suggestions to farmers regarding selection of crop based on history of the that crop in that region.



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