

# Kisan Assistant (Crop Price Prediction)

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**Abstract:** The Kisan assistant and harvest value forecast web application help ranchers, for crops that can be developed, the reference yield for each yield and compost suggestion for crops in view of soil test tried. Optional and micronutrients needed for soil are proposed to the rancher, E-Agri shopping will assist the rancher with purchasing better items for farming. The day-by-day live cost of harvests and yield value forecast will help the rancher for better yield promoting. The yield value forecast will anticipate the yield cost for the following a year which will assist ranchers with realizing the harvest cost at the collecting time or selling time.

**Keywords:** Kisan assistant, crop price prediction, decision tree, commodities, WPI.

## I. INTRODUCTION

The rancher because of the inaccessibility of the right data and information about rural science continues developing harvests that are not reasonable for the dirt sort and adds access measures of compost to the yields which damage soil as well as to people who consume those crops. The harvests are typically purchased from the rancher at a lower cost by the agent and later those yields are sold at greater costs. Rancher additionally gets compost, seeds, devices, and gear of horticulture at an extremely significant expense which makes it too hard to even consider bearing. The rancher for the most part doesn't have thought about what might be the yield cost at collecting time, thus they sell the harvest at the value the merchant has advertised.

The Kisan assistant and harvest value forecast electronic application will help end-client in the field of farming. The end client can demand through a web application for an assortment of soil tests and test the dirt example in the dirt testing research facility. Different harvests that can be developed, the reference yield for each harvest, the various sorts of manure blends for each yield are suggested, the auxiliary and micronutrients needed for soil are additionally recommended to the end client in light of the dirt example tried.

The end client can likewise purchase seeds, saplings, composts, agribusiness apparatuses, and hardware through the web application. The everyday data about the cost of harvests from Agri market and hop com is gotten to and this data will help end-client to fix the selling cost of the yield.

The yield value forecast for 23 items will help the end client to realize the harvest cost for the following year, this yield value expectation information will help the end client to expect the yield cost at the hour of collecting or selling the harvests. Assume the yield costs are low then the end client can store the harvest in the distribution center until the harvest gets a decent cost. In the nations where yields can be traded and ideal spots where harvests are developed, data is likewise given to the end client.

## II. LITERATURE SURVEY

This paper [1] proposes a framework where the clients are assisted with concluding which harvest can be developed. The participation-based framework is utilized and it has tweaked information of every client enrolled. The framework fuses a module that keeps up the information of the past harvests developed from various sources and the yields which can be developed with the current yields. The counterfeit neural organization (ANN) is utilized for this framework. The input framework assists clients with mentioning for changes required and reporting the mistake.

The creator [2] proposes a framework that depends on the information data set and results are drawn from the information. Different modules like clients, information engineers, space specialists, man-machine interface, surmising motor, and information base are thought of. The data is extricated from the information data set by building up an information base. It involves Hadoop for highlight extraction. The unstructured information is handled utilizing NoSQL, Hive, Mahout, and utilizations HDFS to store information. The outcomes were introduced for the wheat crop.

This paper [3] proposes a suggested framework for clients, it considers the area of a client, information investigation and capacity module, crops that are developing data set, physiographic data set. The near region disclosure module distinguishes the regions which resemble the client's regions and checks the comparative harvests that are filled in those areas.

The closeness lattice is created and it comprises of the harvests become in view of the client's area. The suggestions for clients are given in view of the comparability framework. The relative region disclosure the module utilizes Google API administrations to get the current area of the client to distinguish comparative areas.

The creator [4] proposes a framework for soil testing by sensors and the outcome is gotten quick when contrasted with lab-based soil tests. The sensors can deliver the outcome for soil test within 30 minutes while results for soil testing in the research center require a couple of days. The outcomes got from the dirt test through sensors are examined utilizing a microcontroller which thusly needs a couple of moments to turn on the programmed manure dispensary framework. The manure is added naturally which guarantees the compost is neither overabundance nor lacking in the dirt.

The paper [5] proposes the framework which considers past examination information to give crop suggestions in light of area, sort of harvest, and manure proposal in view of NPK content of the dirt. The focal point of this framework is to build the creation of yields by suggesting the right harvest and manure. The exactness of the framework is high when the execution assessment is finished.



### III. METHODOLOGY

#### A. Architecture for kisan assistant

The information is taken from the soil testing lab the outcomes from the research facility are taken information preprocessing is completed and later the dirt test esteems are utilized to check the supplement, optional and micronutrients levels in the dirt and in the event that the level of the supplement is low, the necessary measure of supplements, auxiliary and micronutrients amount to be expanded are recommended to client. The pH and EC upsides of soil are utilized to suggest crops that can be filled in the dirt. Then, at that point, in light of the harvests suggested the reference yield for crop per section of land is recommended to the client. Likewise, the manure for the yields is additionally suggested, the client can pick among the different blends of composts in light of his accessibility of composts. The client can pick any of the compost measurements for the yield that can be either, Organic Fertilizer and Quantity, Bio Fertilizer and Quantity, Fertilizer Combination-1, and Fertilizer Combination-2.

The everyday lives cost of the yield from Agri market and hop com, API is gotten to and that would help in picking the selling cost of the harvest for the rancher. Later the rancher can likewise purchase manure, seeds, saplings, and farming hardware from the web application. This would facilitate crafted by the ranchers.

#### B. Architecture for crop price prediction

The yield esteem determining will initially take the rancher's present month, year, and afterward, the information preprocessing is done and afterward, the harvest forecaster will foresee the main 5 gainers and failures of harvest cost in view of the current month and year. The adjustment of the yield value rate from the earlier month is additionally refreshed to the rancher. The client chooses a specific harvest then the current cost of that specific yield, min and max cost of the harvest data is accessible to the rancher.

Nations, where the yield can be traded data, is likewise given to the rancher. The following year crop esteem is anticipated from the current month of the rancher. The line graph for a superior comprehension of yield cost anticipated.

#### C. Crop price prediction using decision tree algorithm

**Algorithm:** (Generate decision tree) To Generate a decision tree from the given training data.

**Input:** The preparation tests precipitation, wpi, addressed by discrete-esteemed properties; the arrangement of applicant credits, quality rundown.

**Output:** A decision tree for input dataset.

**Method:**

- 1) create a node k for data;
- 2) if samples are all of the same class, D then create a similar class
- 3) return k as a leaf node labeled with the class D; perform next step
- 4) if attribute-list is empty then go to step 5
- 5) return K as a leaf node labeled with the most common class in samples; // majority voting
- 6) select test-attribute, the attribute among attribute-list with the highest information gain;
- 7) label node K with test-attribute;
- 8) for each known value bi of test-attribute // partition the samples for better performance
- 9) grow a branch from node K for the condition test-attribute=bi; then continue to step 10
- 10) let zi be the set of samples in samples for which test-attribute=bi; // a partition
- 11) if zi is empty then
- 12) attach a leaf labeled with the most common class in samples; // add common sample
- 13) else attach the node returned by Generate decision tree (zi, attribute-list - test-attribute); returns node for decision tree

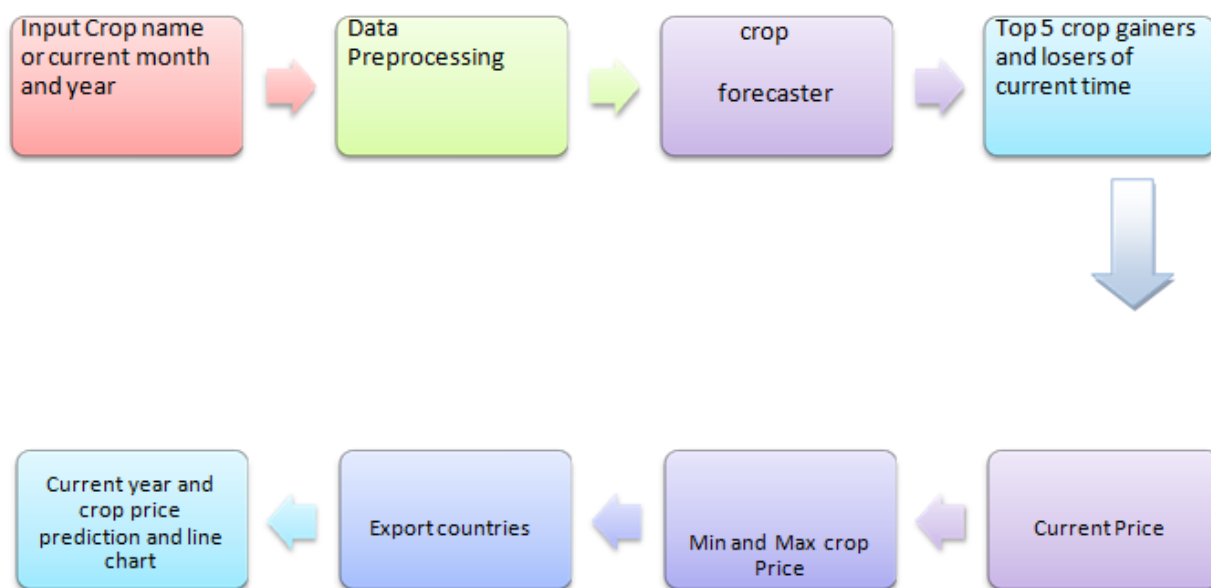


Fig. 1. Block diagram for crop price prediction

#### IV. EXPERIMENTAL RESULTS AND SCREENSHOTS

In this segment, Screenshots address the outcomes got while running the venture and the normal outcomes are acquired. The customer can demand a soil test, and afterward founded on soil esteems the harvests and compost are suggested, the reference yield is recommended for crops and later the everyday live harvest costs are additionally shown to the customer. The customer can likewise purchase items for horticultural and gear on the web. The administrator can see soil demand and later produce the outcomes for soil esteems acquired from the lab, manure orders from customers can be overseen through the web application

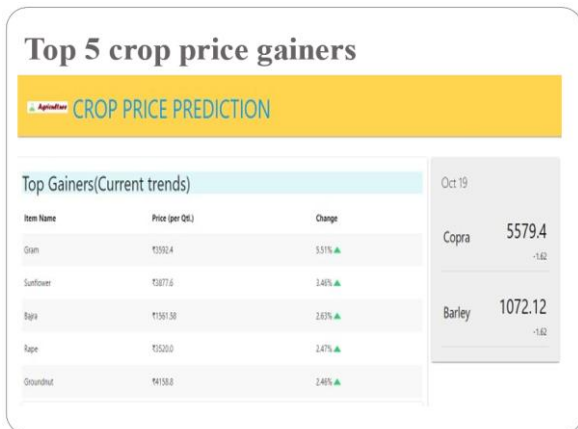


Fig. 2. Top 5 Gainers

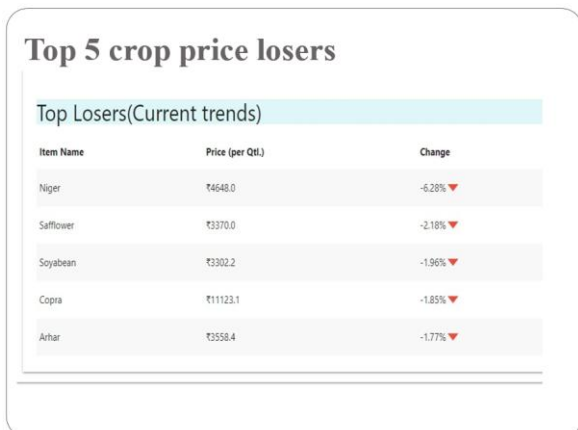


Fig. 3. Top 5 Losers

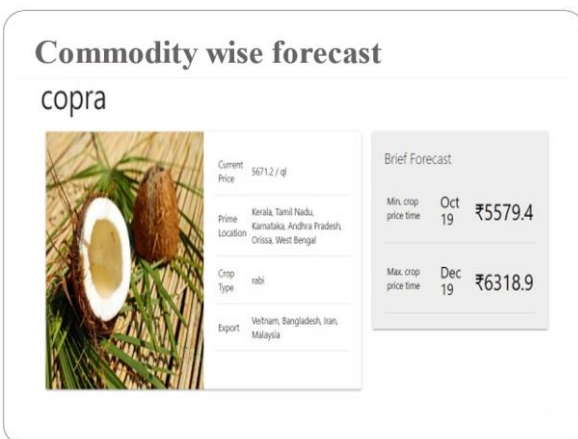


Fig. 4. Commodity wise forecast



Fig. 5. Price Chart

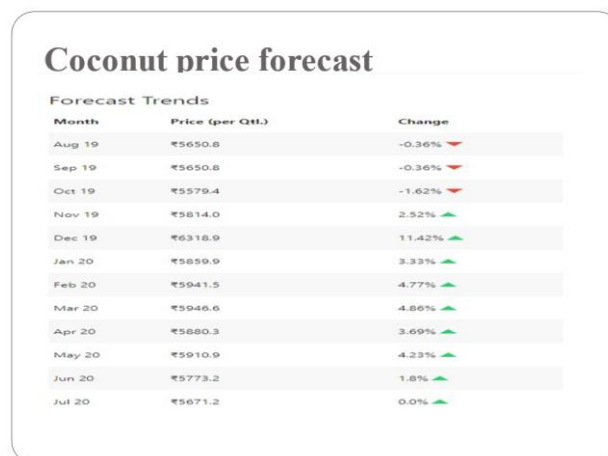


Fig. 6. Price forecast

#### V. CONCLUSION AND FUTURE WORK

This task will predominantly overcome any barrier between the rancher and rural science. The rancher can undoubtedly adjust present-day horticulture with the assistance of the web application. The rancher can now demand soil tests through the web application. The rancher can without much of a stretch know the substance of the dirt with the assistance of soil testing. The rancher with next to no battle can undoubtedly get the data needed to develop the yields. So the harvests that can be developed are suggested and furthermore, the reference yields for the yields are additionally proposed. The manures needed for the harvests are additionally suggested however the compost suggested has various sorts so ranchers can embrace the compost blend whichever is advantageous. The various sorts of manure are natural compost, bio compost, the mix of urea, single super phosphate, murate of potash (compost mix 1), blend of DAP, single super phosphate, murate of potash (compost mix 2). The everyday live costs of the harvests are likewise proposed for ranchers both from Agri market and hop com with the goal that ranchers can realize the current yield cost which will assist with fixing the selling cost of the yield. The rancher can additionally purchase straightforwardly manure, seeds, sapling, ranch hardware, and apparatuses needed for agribusiness through the web application.

The yield value forecast for 23 wares will assist the rancher with realizing the yield cost for the following year, the harvest value expectation will assist the rancher with expecting the yield cost at the hour of collecting or selling the yields. Assume the yield costs are low then the end client can store

crop in the stockroom until the harvest gets a decent value this will guarantee that ranchers can have great benefit any time of time. In the nations where harvests can be traded and ideal places where yields are developed, data are additionally given to the rancher.

Later on, the dirt testing can be robotized by involving IoT which will help progressively information obtaining and better, investigation, crop development, creation. The accuracy cultivating will have an edge over conventional cultivating and will expand the benefit for ranchers. Additionally, the ranch produce could likewise be sold on this web application which will eliminate the agents of yields and will assist ranchers with getting a decent cost for the harvest.

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