Proceedings of Second Shri Chhatrapati Shivaji Maharaj QIP Conference on Engineering Innovations
Organized by Shri Chhatrapati Shivaji Maharaj College of Engineering, Ahmednagar
In Association with Novateur Publications JournalNX-ISSN No: 2581-4230
February, 22nd and 23rd, 2019

IOT Based Soil Care Solution And   Precautions of Seed,food Planting

[1]Pooja Gahile, [2]B Sadhana Patekar, [3]Chaitali Meher, [1,2,3] Students of Department Computer Engineering, Savitribai Phule Pune University, Pune

Abstract:

The problem of yield prediction is a main trouble that can be solved based on available facts. facts mining strategies are the higher selections for this purpose. Specific facts Mining strategies are used and evaluated in agriculture for estimating the destiny 12 months' crop manufacturing. therefore we suggest a brief evaluation of crop yield prediction the usage of k Nearest Neighbor (kNN) approach and Density primarily based clustering approach for the selected vicinity i.e.
Data mining and gadget getting to know is an rising subject of research in data generation as well as in agriculture. Agrarian zone in India is going through rigorous problem to maximize the crop productiveness. The present observe focuses on the applications of statistics mining techniques in yield prediction in the face of climatic alternate to assist the farmer in taking decision for farming and achieving the predicted monetary return.

Index Terms: *k Nearest Neighbor (kNN) technique, Data mining and Machine Learning, Crop disease and yield prediction, climatic parameter (rainfall, temperature, relative humidity, evaporation and sunshine).*

I. INTRODUCTION

Agricultural is the most important sector in indian economy .Agricultural is the producing feed ,food and other desired products .In india 70% peoples are depend on agrictural.

Crop prediction is that the art of predicting crop yields and production before the harvest really takes place, sometimes a pair of months prior to. Crop foretelling depends on laptop programs that describe the plant atmosphere interactions in quantitative terms. The soil testing program starts with the gathering of a soil sample from abroad. The primary principle of soil testing is that a field will be sampled in such some way that analysis of the soil sample can accurately mirror the field's true nutrient standing. The aim of soil testing in high-yield farming is to work out the relative ability of a soil to provide crop nutrients throughout a specific season, to work out the wants, and for identification issues like excessive salinity or pH scale. Soil testing is additionally accustomed guide nutrient management choices associated with manure and sludge application with the target of increasing economic/agronomic advantages whereas minimizing the potential for negative impacts on water quality. Data {processing} could be a process of extracting hidden info from a info and transforms it into a clear structure for additional use. It's the process method of discovering patterns in massive knowledge sets involving strategies at the intersection of AI, machine learning, statistics, and info systems. The last word goal of knowledge mining is prediction - and prophetic data processing is that the commonest style of data processing and one that has the foremost direct business applications. Throughout the years, several algorithms were created to extract information from massive sets of knowledge. There are many totally different methodologies to approach this problem: classification, association rule, clustering, etc. Here we are going to concentrate on classification methodology. Classification techniques are designed for classifying unknown samples victimization info provided by a collection of classified samples.

This set is typically mentioned as a coaching set, because, in general, it's accustomed train the classification technique the way to perform its classification. The classification task will be seen as a supervised technique wherever every instance belongs to a category, that is indicated by the worth of a special goal attribute or just the category attributes. Classification routines with data processing use a range of rules and also the specific algorithm used will have an effect on the approach records are classified. This work talks concerning call Tree classifier assumes that the presence (or absence) of a specific feature of a category is unrelated to the presence (or absence) of the other feature. Betting on the precise nature of the likelihood model, K Nearest Neighbour (kNN) and Density based mostly clump will be trained terribly with efficiency during a supervised learning setting.

II. LITERATURE REVIEW

Rupanjali D. Baruah, Sudipta Roy, R.M. Bhagat, L.N. Sethi "Use of Data Mining Technique for Prediction of Tea Yield in the Face of Climate Change of Assam, India", 2016 International Conference on Information Technology. Data mining is an emerging field of research in Information Technology as well as in agriculture. The present study focus on the applications of data mining techniques in tea plantations in the face of climatic change to help the farmer in taking decision for farming and achieving the expected economic return. This paper presents an analysis using data mining techniques for estimating the future yield prediction in tea cultivation with climatic change trends observed in last 30 years (1977-2006). The patterns of crop production in response to the climatic (rainfall, temperature, relative humidity, evaporation and sunshine) effect across the four tea growing regions (South Bank, North Bank, Upper Assam and Cachar) of

Proceedings of Second Shri Chhatrapati Shivaji Maharaj QIP Conference on Engineering Innovations
Organized by Shri Chhatrapati Shivaji Maharaj College of Engineering, Ahmednagar
In Association with Novateur Publications JournalNX-ISSN No: 2581-4230
February, 22nd and 23rd, 2019

Assam were developed using Multiple Linear Regression (MLR) technique. The tea production estimation equations developed for the regions were validated for the future yield prediction (2007, 2009 and 2010) and were found to be significant. Thus it is suggested that the planters/farmers could use the technique to predict the future crop productivity and consequently adopt alternative adaptive measures to maximize yield if the predictions fall below expectations and commercial viability.

Gregory S. McMaster, DA Edmunds, W.W. Wilhelm ,l, D.C. Nielsen, P.v.v. Prasad.c. Ascough, "PhenologyMMS: A program to simulate crop phonological responses to water stress "Journal Computers and Electronics in Agriculture 77 (2011) 118-125 Crop phenology is fundamental for understanding crop growth and development, and increasingly influences many agricultural management practices. Water deficits are one environmental factor that can influence crop phenology through shortening or lengthening the developmental phase, yet the phonological responses to water deficits have rarely been quantified. The objective of this paper is to provide an overview of a decision support technology software tool, Phenology MMS Vl.2, developed to simulate the phenology of various crops for varying levels of soil water. The program is intended to be simple to use, requires minimal information for calibration, and can be incorporated into other crop simulation models. It consists of a Java interface connected to FORTRAN science modules to simulate phonological responses. The complete developmental sequence of the shoot apex correlated with phonological events, and the response to soil water availability for winter and spring wheat (Triticum aestivum L.), winter and spring barley (Hordeum vulgare L.), corn (Zea mays L.), sorghum (Sorghum bicolor L.), proso millet (Panicum milaceum L.), hay/foxtail millet [Setaria italica (L.) P. Beauv.]. And sunflower (Helianthus annus L.) was created based on experimental data and the literature. Model evaluation consisted of testing algorithms using "generic" default phenology parameters for wheat (i.e., no calibration for specific cultivars was used) for a variety of field experiments to predict developmental events. Results demonstrated that the program has general applicability for predicting crop phenology and can aid in crop management.

Bruno Basso, Davide Cammarano, Elisabetta Carfagna, Review of Crop Yield Forecasting Methods and Early Warning Systems ",Journal of convergence in engineering, technology and science, Vol.1,pp.1-8,2009. The following review paper presents an overview of the current crop yield forecasting methods and early warning systems for the global strategy to improve agricultural and rural statistics across the globe. Different sections describing simulation models, remote sensing, yield gap analysis, and methods to yield forecasting compose the manuscript.

Young Ju Jeong, Kwang Eun An, Sung Won Lee, and Dongmahn Seo, "Improved Durability of Soil Humidity Sensor for Agricultural IoT Environments", 2018 IEEE International Conference on Consumer Electronics (ICCE) Soil humidity is the most important factor for plant growth. Therefore, the soil humidity sensor is an important part of smart farm application using agricultural IoT environments. Since soil humidity sensors are applied wet underground and the sensor consists of copper, rust eats away the copper surface of sensors. From rusting of sensors, wrong information of soil humidity can be collected on smart farm system based on agricultural IoT Environments. It makes that smart farm is not reliable. In this paper, we propose a new type of soil humidity sensor in order to extend life time.

M. Trnka, M. Dubrovsky, D. Semeradova, and Z. Z alud, Projections of uncertainties in climate change scenarios into expected winter wheat yields", in Proceedings of the 11th European Conference on Computer Vision: Part I, pp. 285298, 2003. The crop model CERES-Wheat in combination with the stochastic weather generator were used to quantify the effect of uncertainties in selected climate change scenarios on the yields of winter wheat, which is the most important European cereal crop. Seven experimental sites with the high quality experimental data were selected in order to evaluate the crop model and to carry out the climate change impact analysis. The analysis was based on the multi-year crop model simulations run with the daily weather series prepared by the stochastic weather generator. Seven global circulation models (GCMs) were used to derive the climate change scenarios. In addition, seven GCM-based scenarios were averaged in order to derive the average scenario (AVG).

III. SYSTEM ARCHITECTURE OVERVIEW

The coaching of soil is step one earlier than developing a crop. one of the most vital tasks in agricultural is to turn the soil and unfasten it. This allows the roots to penetrate deep into the soil. The unfastened soil allows the roots to breathe effortlessly even if they move deep into the soil. The loosened soil facilitates in the increase of earthworm and microbes present in the soil. these organisms are pals of the farmer since they in addition flip and loose the soil and add humus to it.
right here we're the use of sensors values like soil moisture sensor, temp sensor, humidity.

in this paintings the experiments are carried out essential and well known type algorithms k Nearest Neighbor (kNN) and Density based totally clustering are applied to the dataset. There accuracy is received with the aid of evaluating the datasets. each algorithm has been run over the education dataset and their overall performance in phrases of accuracy is evaluated along side the prediction carried out in the trying out dataset. The complete evaluation process creates a

Proceedings of Second Shri Chhatrapati Shivaji Maharaj QIP Conference on Engineering Innovations
Organized by Shri Chhatrapati Shivaji Maharaj College of Engineering, Ahmednagar
In Association with Novateur Publications JournalNX-ISSN No: 2581-4230
February, 22nd and 23rd, 2019

records float.

The datasets were accumulated and delicate based totally on commonality uses together with soil moisture, temperature, humidity, evaporation, rainfall, sunshine. these information sets want to be entered into the database .From those parameters name of the crop and predicted yield charge and illnesses of the crop can be predicted. beyond dataset is used as schooling records and the records so one can be acquired using sensors might be used as checking out records. KNN model can be created the usage of training data. For trying out, using sensors, soil moisture, temperature, humidity, evaporation, rainfall, sunshine are measured and taken as enter the usage of Google api. with the aid of analyzing and predicting, the crop disorder, fertilizers and approximate yield price of particular crop may be located out. This facilitates the farmers to take the best selection to sow the plants such that yield fee may be multiplied.
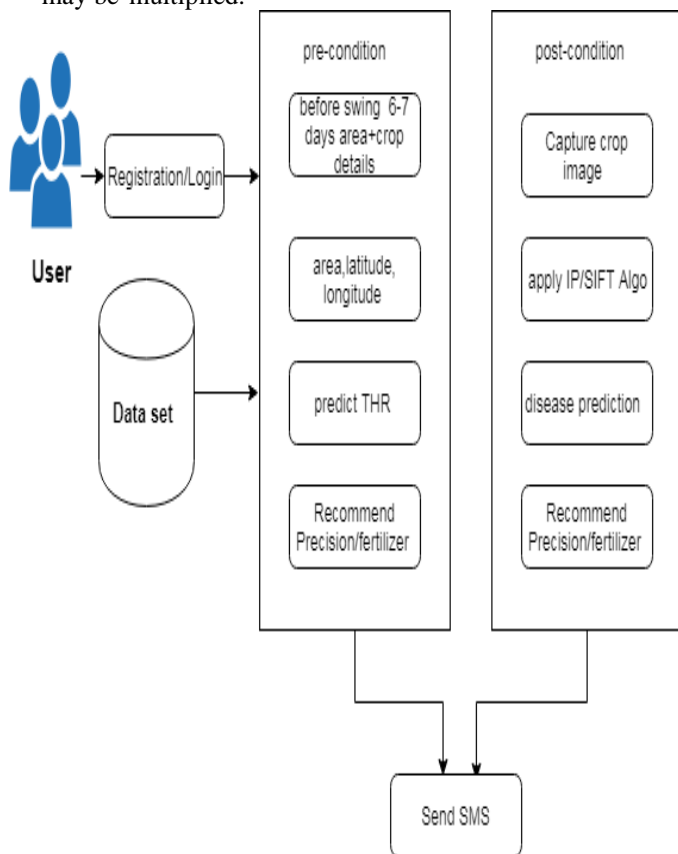

Fig.1 (System Architecture)

IV. SYSTEM ANALYSIS

To Design and develop records era in addition to in agriculture era. Agrarian area in India is dealing with rigorous trouble to maximize the crop productiveness. the prevailing take a look at makes a specialty of the applications of information mining strategies in yield prediction in the face of climatic exchange to assist the farmer in taking choice for farming and achieving the expected economic go back. The problem of yield as well as disease prediction is a major hassle that can be solved based on available statistics. Subsequently we proposed a device Prediction of Crop disease Prediction as according to climate situation.

V. RESULTS

Agriculture is the spine of Indian economic system. In India, majority of the farmers are not getting the expected crop disease after which yield due to numerous reasons. The agricultural yield is basically relies upon on weather situations. Rainfall situations additionally influence the rice cultivation. on this context, the farmers necessarily requires a well-timed advice to predict the future crop productivity, disorder and an analysis is to be made as a way to assist the farmers to maximise the crop manufacturing in their vegetation.

CONCLUSION

This machine focuses on developing computerized leaf diseases. It saves time and effort, in this assignment, we have proposed a brand new approach for prediction of crop disorder from contemporary climate the usage of Google API with the help of ok- NN algorithm and measuring the crop diseases of the crop object and find weather prediction.

on this work the experiments are completed two vital and widely known class algorithms okay-Nearest Neighbour (okay-NN) and Density primarily based clustering are applied to the dataset. There accuracy is acquired via comparing the datasets. Every set of rules has been run over the training dataset and their overall performance in terms of accuracy is evaluated in conjunction with the prediction finished in the testing dataset. The complete evaluation process creates a statistics waft.

ACKNOWLEDEGMENT

REFERENCES

of Global Climate Change on U.S. Agriculture, Unpublished: September.

[2] Adams, R.,Glyer, D., and McCarl, B. 1989. "The Economic Effects of Climate Change on U. S. Agriculture: A Preliminary Assessment." In Smith, J., and Tirpak, D.,eds., The Potential Effects of Global Climate Change on the United States. Washington, D.C.: USEPA.

[3] Adams, R.,Rosenzweig, C., Peart, R., Ritchie, J., McCarl,B., Glyer, D., Curry, B., Jones, J., Boote, K., and Allen, H.1990."Global Climate Change and U. S. Agriculture."Nature.345 (6272, May): 219-224.

[4] Adaptation to Climate Change Issues of Longrun Sustainability." *An Economic Research*

[5] Barron, E. J. 1995."Advances in Predicting

Proceedings of Second Shri Chhatrapati Shivaji Maharaj QIP Conference on Engineering Innovations
Organized by Shri Chhatrapati Shivaji Maharaj College of Engineering, Ahmednagar
In Association with Novateur Publications JournalNX-ISSN No: 2581-4230
February, 22nd and 23rd, 2019

Global Warming‖.The Bridge (National Academy of Engineering). 25 (2, Summer): 10-15.

[7] Basu, Majumder, A., Bera, B. and Rajan, A. 2010. Teastatistics: Global scenario. *Int. J. Tea Sci.***8**: 121-124.

[8] Bazzaz, A., and Fajer, E. D. 1992. "Plant Life in a CO2Rich World. "Scientific American. 1821.

[9] Brack, D. and M. Grubb. 1996. Climate Change, "ASummary of the Second Assessment Report of the IPCC."FEEM

[10] M.Soundarya, R.Balakrishnan," Survey on Classification Techniques in Data mining", International Journal of Advanced Research in Computerand Communication Engineering Vol. 3, Issue 7, July 2014.

[11] D Ramesh , B Vishnu Vardhan, "Data mining technique and applications to agriculture yield data", International Journal of Advanced Researchin Computer and Communication Engineering Vol. 2, Issue 9, September 2013 .

[12] Gideon O Adeoye, Akinola A Agboola, "Critical levels for soil pH, available P, K, Zn and Mn and maize ear-leaf content of P, Cu and Mn insedimentary soils of South- Western Nigeria", Nutrient Cycling in Agroeco systems, Volume 6, Issue 1, pp 65-71, February 1985.