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Crop Profit Optimization and Trading Based on Location Tracking for Farmers

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Abstract —*Now a days everyone is moving to the technology to enhance their business profit, so we are trying to combine farmers with technology in an efficient manner. There are some application available for farmers, but there is no such application which helps to optimize crop profit. Some do not support GPS Tracking and has several issues regarding location tracking and search. We are developing android application for farmers that helps them to maximize profit in planting season. We applies here Naïve Bayes algorithm to implement the predicted result. From this predictions farmer can decide whether to conduct particular crop or not. This application has location tracking facility that suggest farmers which crops they can plant along with this we are trying to simplify trading facility. After successful registration by users system will display list of dealer, retailers, customers, farmers and transporters based on the location detected by the system. Also we are developing e-services that enables all users to check out all latest updates of market rate, crop details, selling and buying crop products, seed details, plant disease information. E-service is used to sync with android app in such way that user can use same id and password for both the services. Farmers will get information about seed, fertilizers, plant diseases, local market details, etc. The app can be used by all android users without any cost. Android application will be available in Marathi, Hindi and English language.*

Keywords *- Farming, Profit Optimization, Location tracking, android application, e-service, Naïve Bayes Algorithm, System Analysis etc.*

I. INTRODUCTION

The reason for analysis during this case is to supply farmers with a tool that helps them maximize profit by taking inputs on native market values further as water, weight,area and land constraints. One in every of the cool things concerning this tool is that the system boundaries are outlined by the user. There's an extended list of different key variables. Among the key variables are inputs that are provided by the user.The inputs include: quantity of land obtainable for planting, quantity of water obtainable, the quantity of weight that can be shipped, native market costs per kilogram of every crop, and distance to plug. The input of native value per weight of every crop is placed directly into the target function, whereas the opposite inputs are shaped into constraints based on the requirements of every crop. The output of the target function are going to be what percentage seeds of every totally different crop to plant so as to maximize the user's profit. There are interconnections at intervals this technique as there are at intervals all systems. The most interconnections but, are hidden at intervals the tool that we tend to are providing. For example, the quantity of land can have an effect on that crops may be harvested, that affects the price of water, that successively affects profits that might have an effect on the quantity of land the farmer owns within the next season. The Naïve Bayes and KNN algorithm simplify result of system. A clearer image of the interconnections may be seen in Figure one of section a pair of. In order to make a applied math drawback there are sure assumptions that had to be created. The assumptions are as follows. The farmer owns the land he intends to use. Each plant harvested are going to be the common weight of that crop. Even during a draught water costs don't go up, there is only a restriction placed on what proportion water one will consume. To weigh down on the amount of user inputs, assume that the user is found within the Shenandoah Valley. This helps with water, transportation, seed, and labor prices. The code will simply be changed if we tend to wished to relinquish this to a farmer in another space. The offer equals the demand.

II. PROPOSED SYSTEM

The android application allows the user for the constraint values. These constraint values embody water availability, quantity of usable land, weight transportation limits, time to grow, distance to native market, and native crop costs per kilograms. The input constraints enable the user to tailor the program to their specific conditions. If adopted throughout a farmer’s call period before the planting season, this improvement tool can analyze the parameters that area unit being round-faced so as to maximize profits. Once all inputs are entered, the tool computes the best combination of plants that may be adult within the given time-frame that will maximize the farmer’s profits at market. User is a able to view various farming related parameters such as crop details in farmers area, seed information, plant diseases etc. Important thing we are trying to implement is buying and selling of farm products to customers, retailers and dealers.

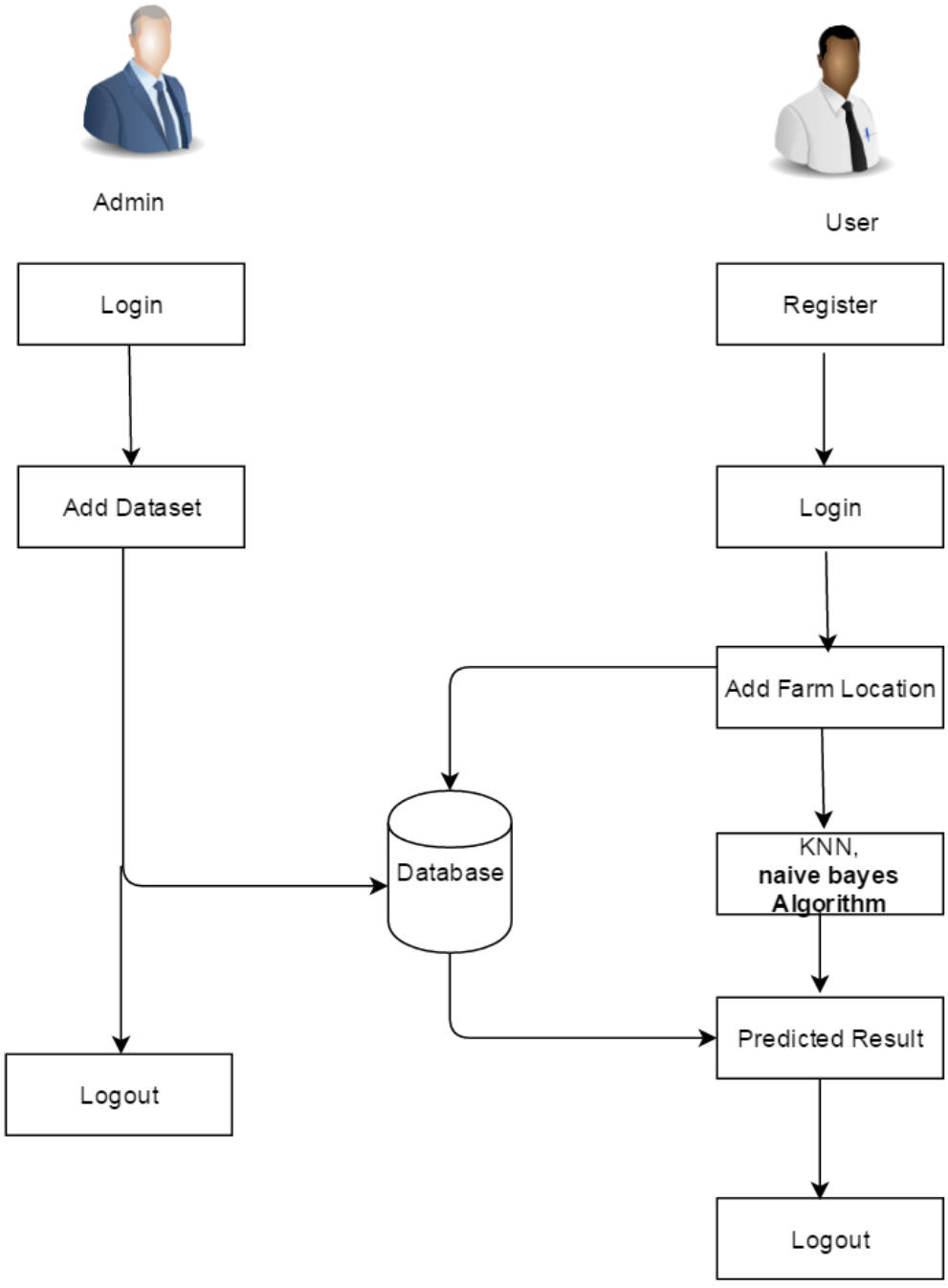
2.1. Profit Optimization

To optimize the profit first we need to create the history dataset. This history dataset is centrally managed by administrator. User enters essential parameters and that parameters will be sent to server. On server side transmitted parameters are stored in database and compared with history dataset. Results are generated and forwarded to the farmer (user). For this prediction we are implementing Naïve Bayes algorithm and K-NN algorithm.

2.2. Location Tracking

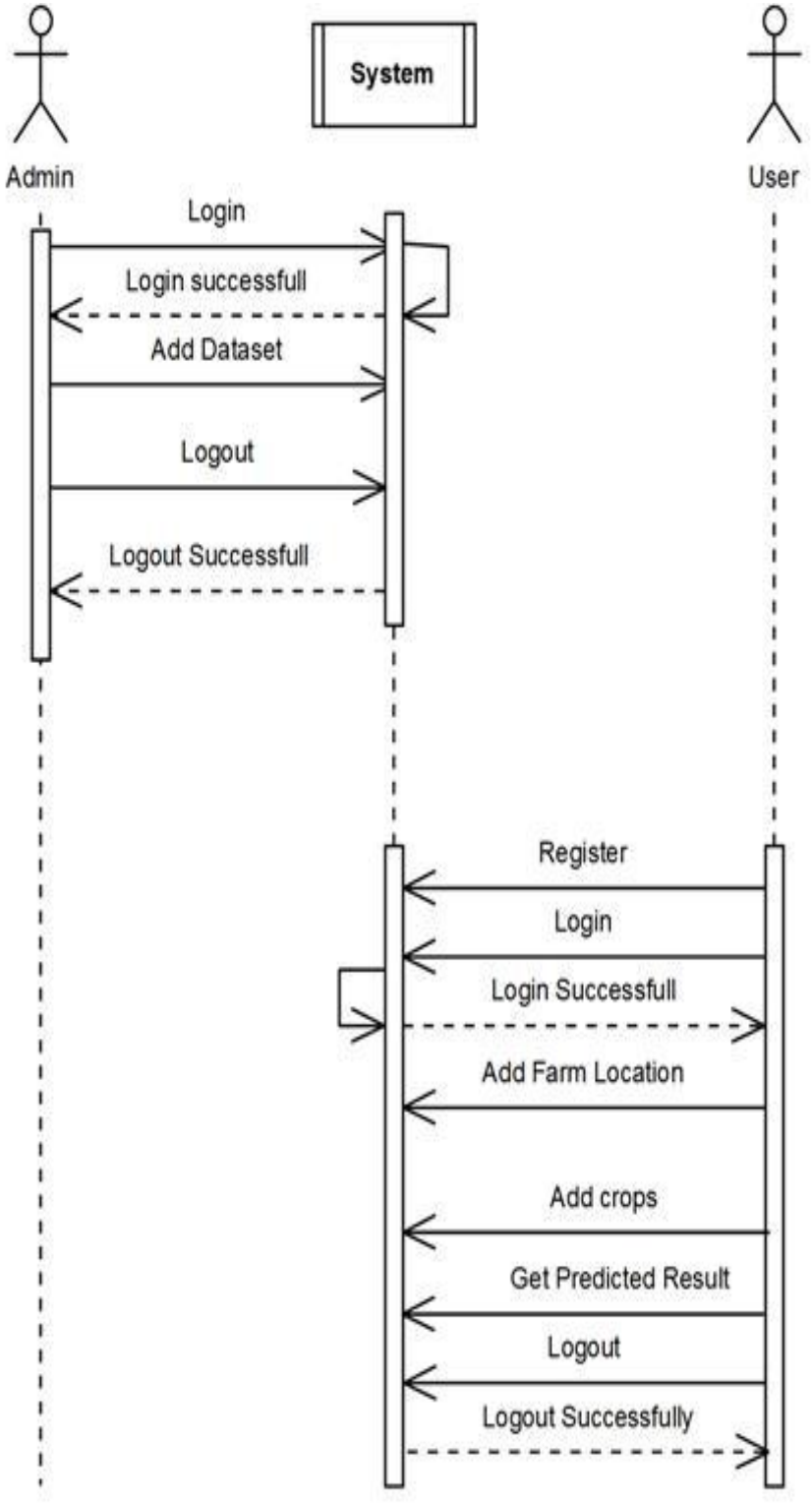
To track the location of farmer we are using GPS module. User has to enable the 'Location' option from android settings. For testing purpose we are using simulator to test different locations using latitude and longitude values. App will compute the co-ordinate values and obtain the location.

III. SYSTEM ARCHITECTURE



diag(a) system architecture.

IV. SEQUENCE DIAGRAM



diag(b) sequence diagram

This sequence diagram states the sequences in our system that shows however processes operate with each other and in what order. It's a construct of a Message Sequence Chart. Sequence diagrams square measure typically known as event diagrams, event situations, and temporal arrangement diagrams.

V. LITERATURE SURVEY

In [1] we learned what will be water requirement for any crop. It is necessary to learn when and how to give water to crop in different lands. There are various watering techniques available that can save lot of waters.Water walls will insulate against cold temperatures and help increase your harvest yields. In [2] we learned that android application must be developed based on component modelling that user will get information quickly. We can integrate different loosely coupled system on android platform. We can easily implement commonly used functionalities and generate a skeleton in android application. Also in [2] it is clear that component based modelling is best idea for android application development.In [3] we learned active authentication in android app and website which is provided by computing device. The dataset is created that stores different usage characteristics such as application usage, web browsing and GPS location of wide variety of users. Along with this information we learned how to authenticate user using stylometry. Paper [4] consist the profit optimization using formula. A tool was created in python that enables user to enter parameters on command prompt and system calculates the profit and display the result on prompt. User has to enter all the parameters needed to calculate the profit.

VI. MATHEMATICAL MODEL

Let S is the Whole System Consist of

S= {I, P, O}

I = Input.

I = {U, Q, A, S, D}

U = User

U = {u1,u2….un}

Q = Query Entered by user

Q = {q1, q2, q3…qn}

D = Dataset

P = Process:

Step1: User will enter the query.

Step2: After entering query the using Naïve Bayes and k-NN algorithm system will calculate the probability of crop that will give profit to farmer.

Step: 3 System will print appropriate result.

Output:
User will get crop and planting information on particular location.

VII. ADVANTAGES

Farmer will easily analyze which crop should planted on predicted result. It improves profitability of farmer if they follow the predicted analysis. The farmer owns the land he intends to use. Each plant harvested will be the average weight of that crop. Even in a draught water prices do not go up, there is only a restriction placed on how much water one can consume. Farmer can search Dealers, Retailer, Customers, and transporter by sitting in home.

VIII. CONCLUSION

Once farmer enter seed cost, water availability, amount of usable land, weight transportation limit system will send data to server and server will compares the inputs with the history dataset and outputs the prediction using Naïve Bayes algorithm. The tool takes inputs on native constraints and market costs from the farmer WHO is aware of this market. The location tracking system display appropriate location. It then determines for the farmer what proportion of every crop to plant so as to maximize his profits. The method involved deciding all of the prices attached growing crops and finding actual values for those prices so that they will be place into the target operate and also the constraint equations. The ultimate product may be application that will be employed by farmers to optimize their profit. The Naïve Bayes and KNN algorithm applies here to predict the result of crop profit maximization.%

IX. REFERENCE

[1] Watering Tomatoes (n.d.). In *Garden.org*.

[2] Gabor Kovesdan, Mark Asztalos, Laszlo Lengyel "*Fast Android Application Development with Component Modelling*" 5 November 2015.

[3] Lex Fridman, Steven Weber, Rachel Greenstadt "*Active Authentication on Mobile Devices via Stylometry, Application Usage, Web Browsing, and GPS Location*" DOI: 10.1109/JSYST.2015.2472579, Year: 30 March 2016

[4] Jonathan Romero, Kody Smith "*Crop Profit Optimization for Farmers*", IEEE SIEDS, Year: 2016

[5] Web reference: farmer.gov.in (2106) and farmers.org android app

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