CHAPTER 1

INTRODUCTION

Agriculture is considered the backbone of our country. Lakhs of farmers are involved in getting food to our plate. The produce that farmers harvest can reach us because of the multiple markets that connect people from various fields and regions. It is because of the strong networking in of markets, that enable us to enjoy the best produce from Himachal to Tamil Nadu.

The agricultural sector can be further classified into staples like cereals, millets that are essential foods and flowers, fruits and vegetables that comprise of the horticulture field. Horticulture is essential and important source of income for farmers. These produces can be exported for further gains.

Crops that fall under horticulture generally can be harvested in 3 months' time, and some crops can be cut daily to weekly once. It is essential to ensure the harvested produces reaches the market in time, to ensure the quality is not compromised, and best rates are obtained. There are multiple factors involved in selling the harvested product. Some are, identifying the right market considering the variety of crops the shop accepts, distance, etc. One must also consider the packaging of the product, for example cauliflowers are accepted only in plastic sacks that the farmer has to purchase, while rose is packed in plastic boxes sent from the shop.

Once the shop is selected and produce sent, the amount is transferred weekly or monthly based on the supply frequency. Currently majority of markets maintain hand written bills, that is provided to the farmer at the end of a month, as a record of the sales done. Over time it becomes cumbersome to organize and maintain the bills. It is also difficult to quickly look up certain bills, and perform analysis for future use.

This leads to the need for a system, that can organize and store these bills in an efficient manner, thus allowing the farmer to refer to them at any time int the future. It will also have the additional feature of generating reports on the income obtained, thus giving the farmer an insight on their profits.

Thus, to cater to this need, we have developed a portal where farmers can log in, enter their bill details, and generate relevant reports, consisting of the summary for their bills.

CHAPTER 2
LITERATURE SURVEY

Early attempts at billing information systems in developing countries follows a fairly standard format. Government bodies would collect information (usually only prices) and arrange for this to be disseminated via newspapers and radio stations. The early information systems in the field of agriculture faced several problems, the data and analysis of billings was usually very poor, with little consideration of grades. Many services had more of a statistical orientation than a commercial one. Invariably, many information systems have either collapsed, after initial donor assistance ended or struggled along with little impact.

Today, real time information can be delivered within few hours. Data is no longer limited to prices, but may also include the analysis. In this project we attempted to

- Improve the supply of billing information to meet data users (farmers) actual needs.
- Improve farmers' access to information that benefits them.
- Provide information in usable form to help enable farmers to take better decisions.
- Categorize and group data in meaningful way to allow it to be used in future

CHAPTER 3

SOFTWARE REQUIREMENTS SPECIFICATIONS

The software components used in this project are as follows:

1) MySQL Version 8.018
2) PHP Version 7.3.11
3) HTML
4) Java Script
5) Chart js 2.8.0

CHAPTER 4

DESIGN

4.1 Schema Diagram

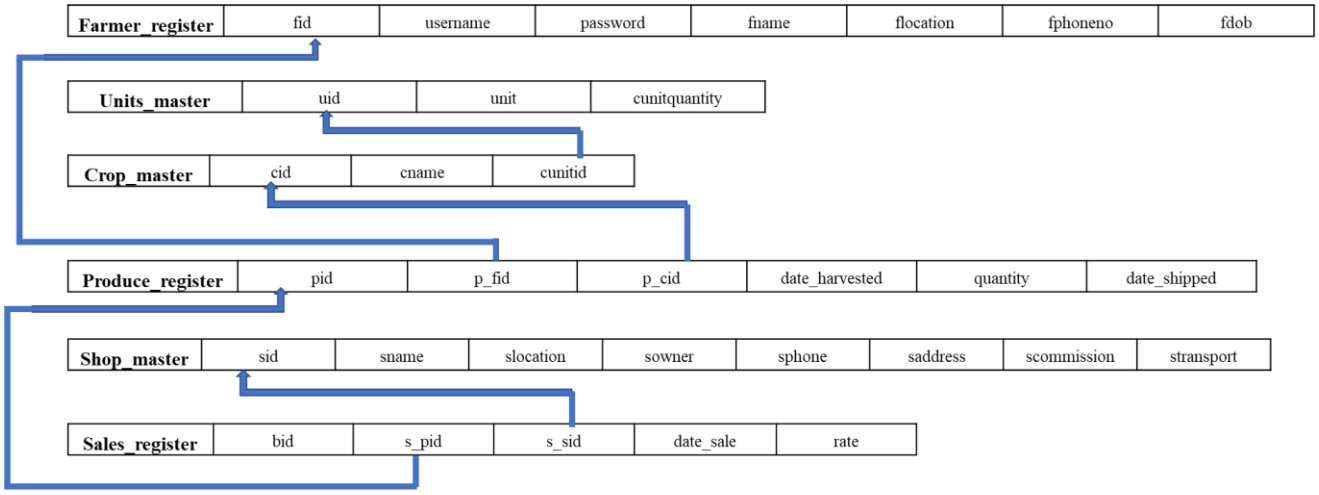


Fig: 4.1 Schema diagram

4.2 Entity Relationship diagram

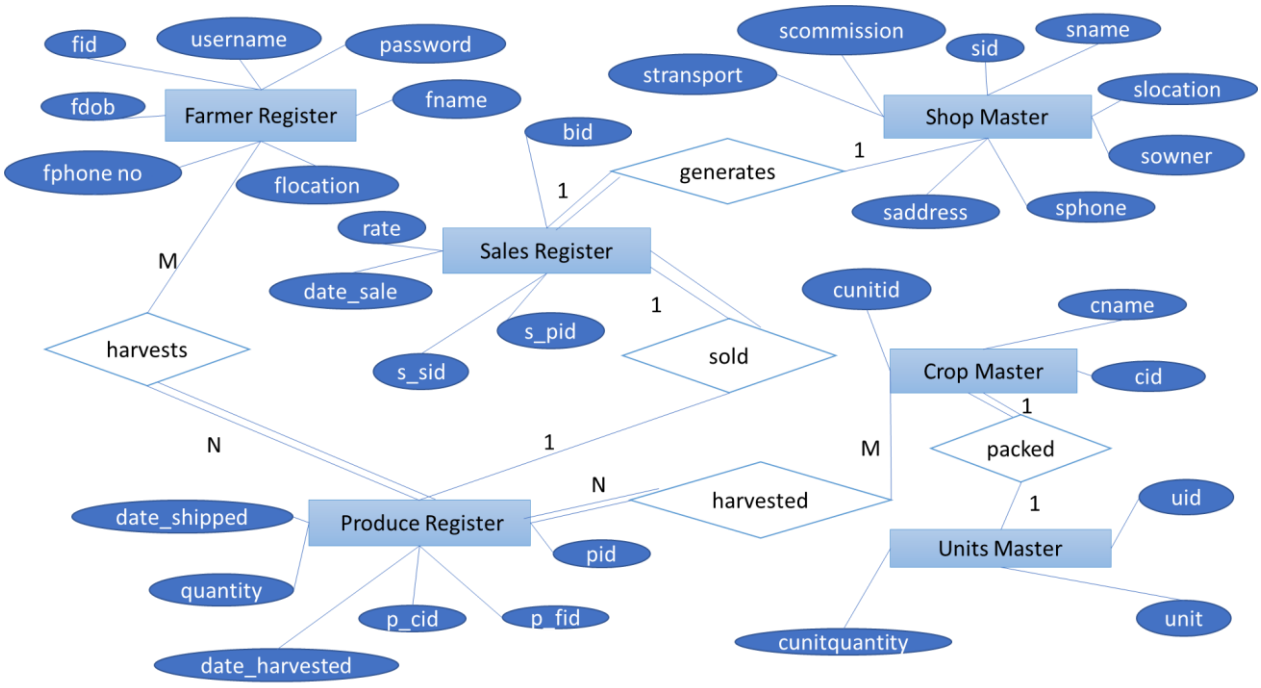


Fig: 4.2 Entity Relationship diagram

CHAPTER 5

IMPLEMENTATION

The farmer sales management system contains of two parts. One to be accessed by normal users (farmers) and other for the database administrators use only.

The user can register and then login to access the system. Users can perform the following actions:

- Update or edit profile
- Add bill details
- View report and analysis of crops sold
- Get recommendation of selling price for crop
- Logout

The admin can perform the following actions:

- Modify shops master table
- Modify crops master table
- Modify units master table
- Logout

5.1 Implementation with screen shot

Index page

Fig: 5.1 Home page

Here the user can log in or sign up

Sign up

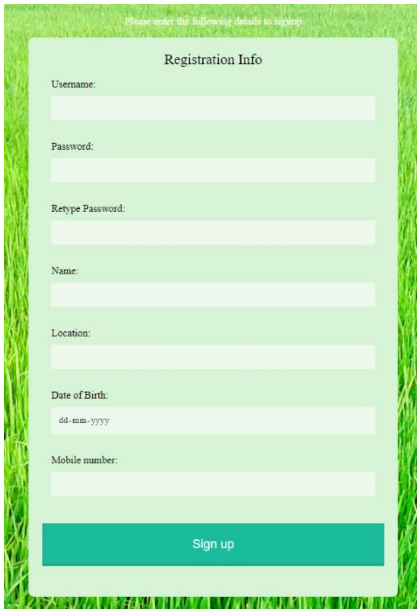


Fig: 5.2 Registration page

To sign up, the user is required to enter the required details. After which they can log in. The password is encrypted using SHA, to maintain privacy.

Fig: 5.3 Login page

An already registered user can log in with their username and password.

User home page

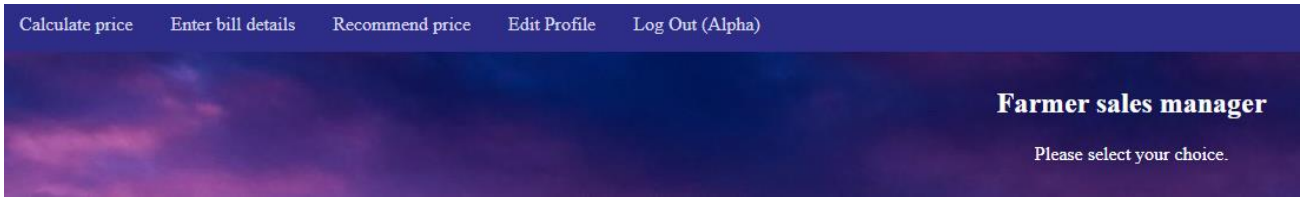


Fig: 5.4 Home page of user after login

After logging in the user can choose any of the options in the navigation menu

Edit profile

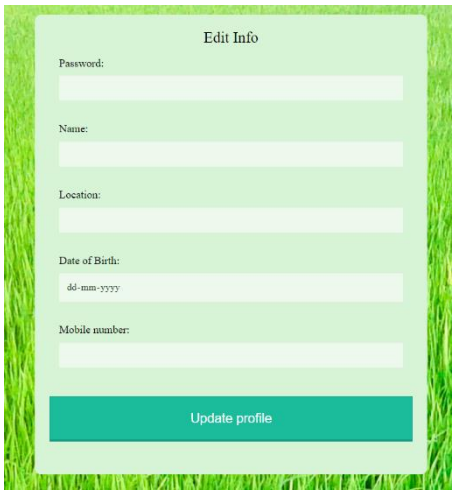


Fig: 5.5 Edit profile page

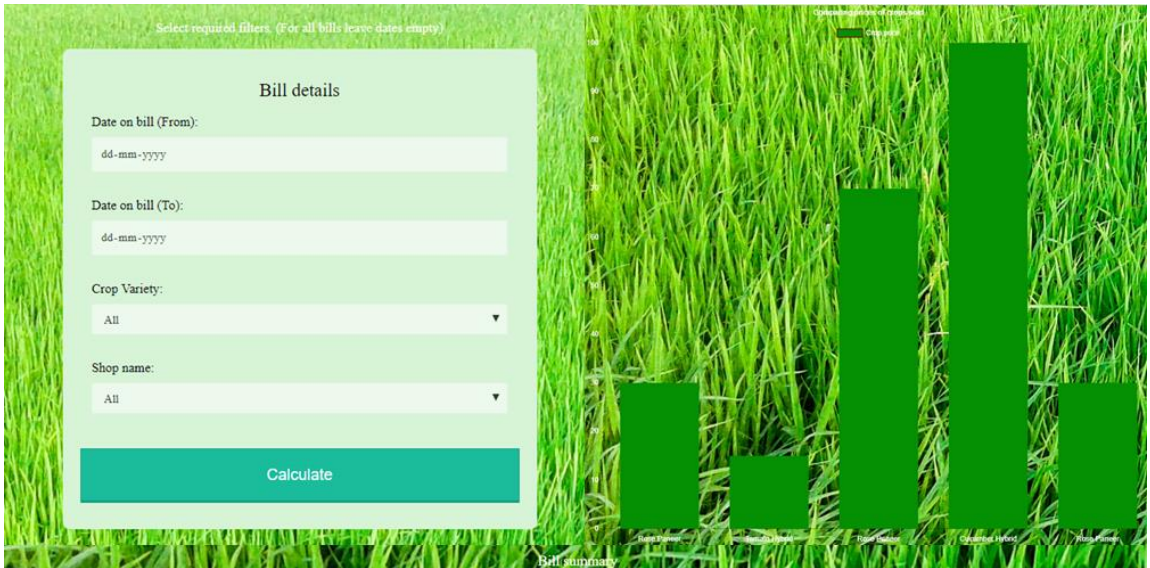
The user can edit their profile, if they need to update personal details, or change password

Enter bill

Fig: 5.6 Bill entry page

The bills collected by the farmer can be digitized with this form. It is saved and can be referred anytime later. After saving the farmer gets a message about the average and maximum price of the crop in the same month, last year. This information is displayed using an after-insert trigger.

Report page (uses stored procedure)



Bill summary

Bill date	Crop	Shop	Quantity(kg)	Rate(per kg)	Total	Unit(kg)	Transport Charges	Shop Comission	Total Comission	NET
2019-10-13	Rose Paneer	SKF	30	30	900	15	20	90	110	790
2019-10-11	Tomato Hybrid	SKF	35	15	525	35	10	52.5	62.5	462.5
2019-11-08	Rose Paneer	AJA & CO	15	70	1050	15	15	210	225	825
2019-06-07	Cucumber Hybrid	RKS	20	100	2000	50	4.800000190734863	240	244.8000030517578	1755.199951171875
2019-10-26	Rose Paneer	SKF	15	30	450	15	10	45	55	395

Fig: 5.7 Summary page of selected bills with table and graph

All bills of the user (farmer) can be viewed as a report, with important details. The net profit of sales is calculated with the help of a stored procedure. The report can be modified with the use of filters such as shop, crop, date as required by the user. The prices are also displayed in the form of a bar chart for better and easier understanding. This chart can be used by the farmer to visually compare prices of the crops he/she has sold, to gain understanding on most profitable crop.

Price recommender page (uses stored procedure)

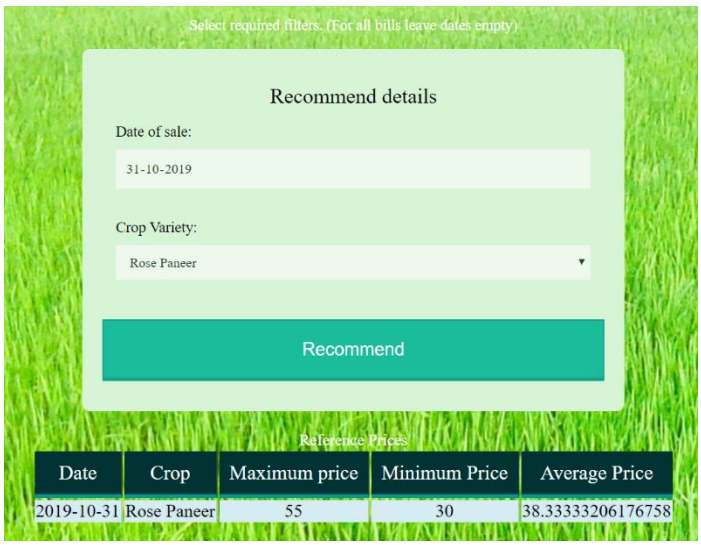


Fig: 5.8 Guideline price for selected crop

Based on the database of bills collected from various farmers. We can identify the maximum, minimum and average price of a particular crop for a given month. This information will provide the farmer with a baseline for the prices he can expected for a particular crop in a given month. Thus, aiding in making more informed decisions.

Admin home page

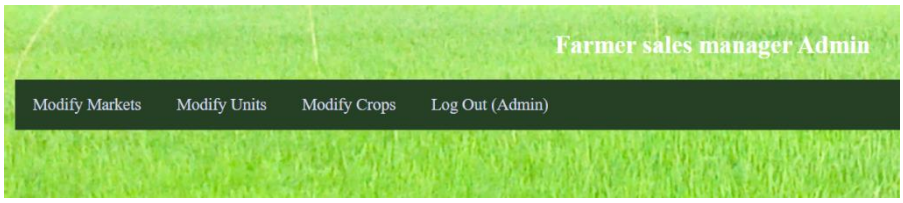
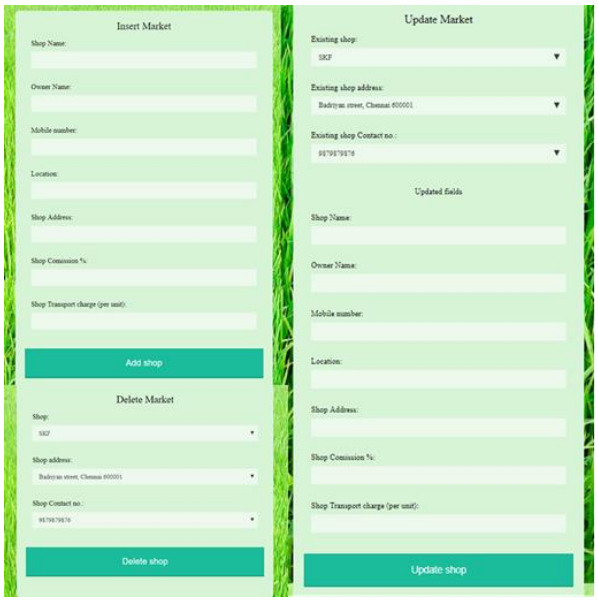
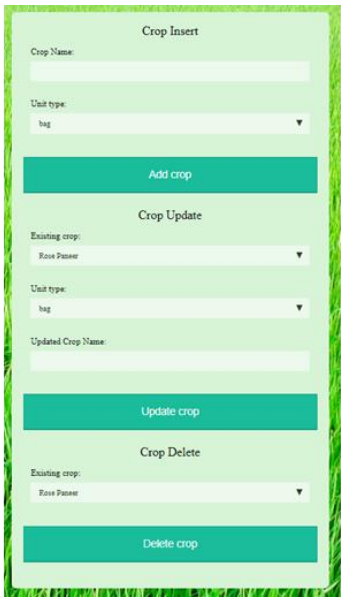


Fig: 5.9 Home page of admin user

When logging in as Admin, special privileges are provided. Admin can modify the master tables, which are used by users to enter their bills.

Modify Master tables





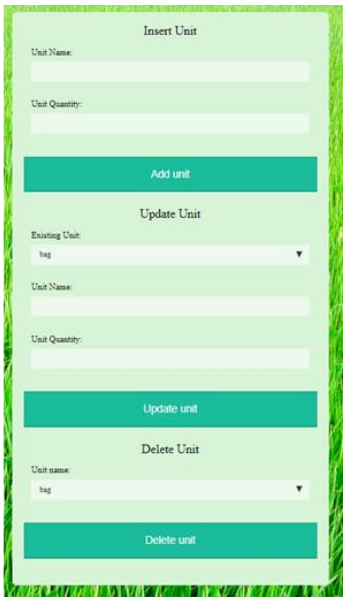


Fig: 5.10 Market update page. *Fig: 5.11 Crop update page.* *Fig: 5.12 Unit update page.*

Here the admin can insert, update or delete markets, or crops or units from master tables in database.

Insert duplicate record (trigger)

Fig: 5.13 Before insert trigger

If an already existing value is entered in any of the master tables, a trigger is executed to prevent duplicate records.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 Conclusion

This tool simplifies the task of analyzing sales for farmers, by digitizing bills, and auto generating reports. This will help the farmer in identifying the most profitable crops, and months which will in turn help in planning for the next season. By building this database, we will obtain the dataset of daily prices for various crops, at various markets. This can be used as input for a machine learning model, to predict future prices for the crops at each market. This additional insight, will avoid huge fall in prices due to oversupply in one area. Thus, with the help of data analytics we can make the power of technology accessible to everyone. Additionally, the insights can be shared with policy makers to plan for the future wisely.

6.2 Future Enhancement

After collecting crop sales data from users for 3-5 years, to build a reliable database, we plan to provide price prediction facility for various crops, to help improve the decision-making process of farmers, to sell or store produce in cold storage facilities.
Additionally, we will collect crop sowing details, to further improve our prediction, and also recommend farmers on what crop to so, based on various factors like weather, location, time of the year, etc.

CHAPTER 7

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