

A
B.TECH PROJECT PROPOSAL

on

**Dudhganga Dairy Application for
Milk Collector and Farmers**

for

B.Tech. in Computer Science and Engineering

Submitted to



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Abstract

Milk production is one of the most important factors for the rural economy of India. Dairy Milk production is a highly and fast-growing sector in INDIA. India has traditionally been a low-cost milk producer due to inexpensive feeding and maintenance cost. There are many people involved in the milk production sector. The people are involved in this sector are the farmers, owner's of collection centers and owner's of dairy plants. Farmers provide milk to milk collector but due to bad account management and record management many problems occurs which leads to issues such as loose faith of farmers in milk collector. So There is need of a solution which will help to the milk collector.

Keywords: Milk, Fat, Weight, Dudhganga, Automation, Dairy, Farmers.

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1 Introduction

Most local milk collectors in the small towns and villages collect milk and write down the fat and quantity of milk on the paper and at the time of bill calculation bill collectors calculate the bill of each customer by using a regular math calculator. Milk collector not only keep record of collected milk but also manages records of milk buyers, farmers and also keep account of cattle food provided to farmers with their money transactions. This process consumes more time to do all this calculation, and this time can be saved if we automate this process. So we are going to develop one application which will handle all the work of the milk collector which he/she does manually.

1.1 Background and Context

Milk production is one of the most important factors for the rural economy of the India. Dairy Milk production is highly and fast-growing sector in INDIA. India has traditionally low-cost milk producer due to inexpensive feeding and maintenance cost. In spite of this, Indian dairy sector lag behind in the high productivity of milk and also quality and hygienic systems. Dairy sector is the major source of income for an estimated 27.6 million people [1]. Milk industry contribute about the 5.3% to India's agricultural GDP.

The **Dairy Knowledge Portal** [2] is a portal which has traced the many issues related to the dairy management. This portal listed the following challenges related to the digital dairy management system.

Small holder Challenges:

1. Inadequate feeding of animals.
2. More disease incidence.
3. Low genetic potential of animals.
4. Lack of chilling capacities.
5. Exploitation of farmers.
6. High production costs.
7. Delayed payment of dues.

Procurement Challenges:

1. Milk base mainly consisting of small holders.
2. Gaps in information.
3. Absence of a screening system.
4. Lack of Infrastructure.
5. Manipulation of the quality of milk by the farmers.

1.2 Purpose

Manually calculation of milk bill of each customer will consume more time and writing all the information about milk collected on the paper which needs the papers. There are high chances of losing data written on the paper. So the purpose of the Dudhaganga Dairy application is to save the time of milk collector and keep all records of milk collection, increase the faith of farmers on milk collectors.

2 Literature Survey

We have studied some software products which are currently are used by milk collectors. Following are the software products:

1. Existing Systems

(a) The Shubhadra Dairy Management Software

The Shubhadra Dairy Management Software [3] is a software which is used for dairy management. This application has the following features:

- i. User-friendly billing system.
- ii. Add daily milk details
- iii. Customer Management.
- iv. Billing Management
- v. Report generation.
- vi. Database Backup Management.
- vii. Fat entry through excel.

Following are the prerequisite for installing this software:

- i. Desktop / Laptop and printer
- ii. Windows XP to Later version
- iii. RAM – 2 GB
- iv. Physical Memory – 15 GB free space
- v. JRE version 7 or above installed
- vi. MySQL version 5.1 or above installed

(b) Meri Dairy

Meri Dairy [4] is another one Milk Collection center software for dairy owners. Which is the android Application with the following features:

- i. With every entry, Dairy customer will receive a text message (SMS)
- ii. TVS mini printer Available to print a daily receipt.
- iii. as a desktop using Computer keyboard.
- iv. Payment Register
- v. Daily report
- vi. Data saved on the server will be secure in case you lost your laptop/mobile.
- vii. Customer app to watch their own records on the app
- viii. Milk Sale purchase record.
- ix. Complete FAT/SNF or CLR management

2. Papers/Journals

Ronak Chudasam, Sagar Dobariya (2017) [5] published paper "DAPS: Dairy analysis and prediction system using technical indicators". This paper addresses the problem of analyzing data collected by the dairy production with the aim of optimizing the supply chain management and maximizing profit in the manufacturing of milk and other dairy items. The amount of data from dairy records continuously increases due to the usage of modern systems in farm management, requiring a technique to show trends and insights in data for a rapid analysis

3 Problem Statement

To design and develop a cross-platform application for the automation of daily and routine activities of milk collection centers and farmers and milk buyers and keep record of all data and transactions.

- **IDEAL:** There must be transparency in the daily and routine transactions between the farmers and milk collectors. The process of calculation and billing should be automated to avoid the miscalculation in accounting.
- **REALITY:** In the rural areas, local milk collector's collects milk and write the quantity of milk and fat of milk on paper for each customer. After the 10 days, they spend time to calculate the bill of each customer by taking the price depending on weight and fat for the respective milk of the customer. This whole process of bill calculation take average 5 for 6 days. And they also manage the records of payment of milk buyer on the notebook.
- **CONSEQUENCES:** The current process at milk collection centers may lead to mal-practice while taking the readings. The current process of bill calculation many times leads to wrong calculation. Due to all these issues, the farmers have no belief on the milk collection centers. Daily and routine transactions are not transparent to milk producers.
- **PROPOSAL:** The Dudhganga Dairy application will be a cross platform application for the automation of daily and routine activities of milk collection centers and milk buyers. The Dudhganga Dairy application will also connect the milk collection centers and the farmer.

4 Objectives

1. To Design and develop the Database system for efficient storage and retrieval of data.
2. To Design and develop a friendly multilingual user interface for milk collectors and farmers.
3. To Design and develop a messaging system to provide required alerts to farmers, milk collectors and dairy plants.
4. To develop a mechanism to pay the amount of milk directly into the farmer's account.
5. Analyze the data, prepare the bills daily/monthly/quarterly/annual reports.

5 Scope

The Dudhganga Dairy application designed for the milk collectors, farmers and milk buyers. This application currently can be used by the farmers and milk collectors and milk buyers.

6 Proposed Work

6.1 Methodology

- To make this app, multilanguage, first we have to translate each sentence in respective language.

- The App will be available to use in the following languages:
 1. English.
 2. Hindi.
 3. Marathi.
- For storing the data related to the milk of each customer and information of each customer, we will be using the Firestore database provided by Google for Android Apps.
- In Firestore the Complex, hierarchical data is easier to organize at scale, using sub-collections within documents.
- Figure 1 shows the collection and document Structure of the Dudhganaga Dairy Application

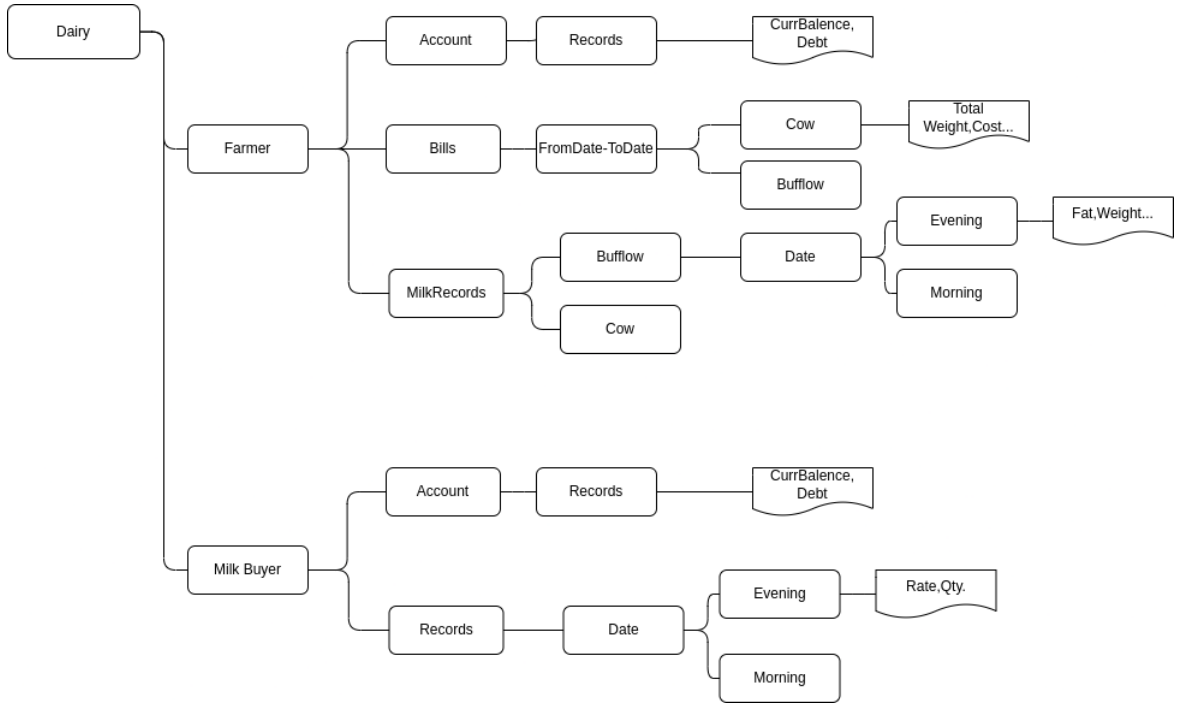


Figure 1: Firestore Database Structure for the Project

- To send the information about reading the milk and the bill of milk, we have designed another account separately for the farmer. By login to this app using the collection center name with unique key and password, they can see their records about the milk.
- The inputs are taken two times in a day, at morning and evening, and stored on the database.
- After the completion of 10 days. This software will automatically start the calculation of bills for each customer.
- The values of prices of milk are predefined, So we will consider all that values while calculating total cost of milk.
- The calculation will be done on the following things:
 - Cost of milk with respect to fat on each morning and evening,

$$costofday = costofmorningmilk + costofeveingmilk \quad (1)$$

- Then the cost of milk of 10 days will be calculated using cost of each previous 10 days.
- If the inputs are not given to the software, then it will consider the cost as 0 for that respective time and customer.
- The Figure 2 is the diagrammatic representation of how the milk is used to create the product.

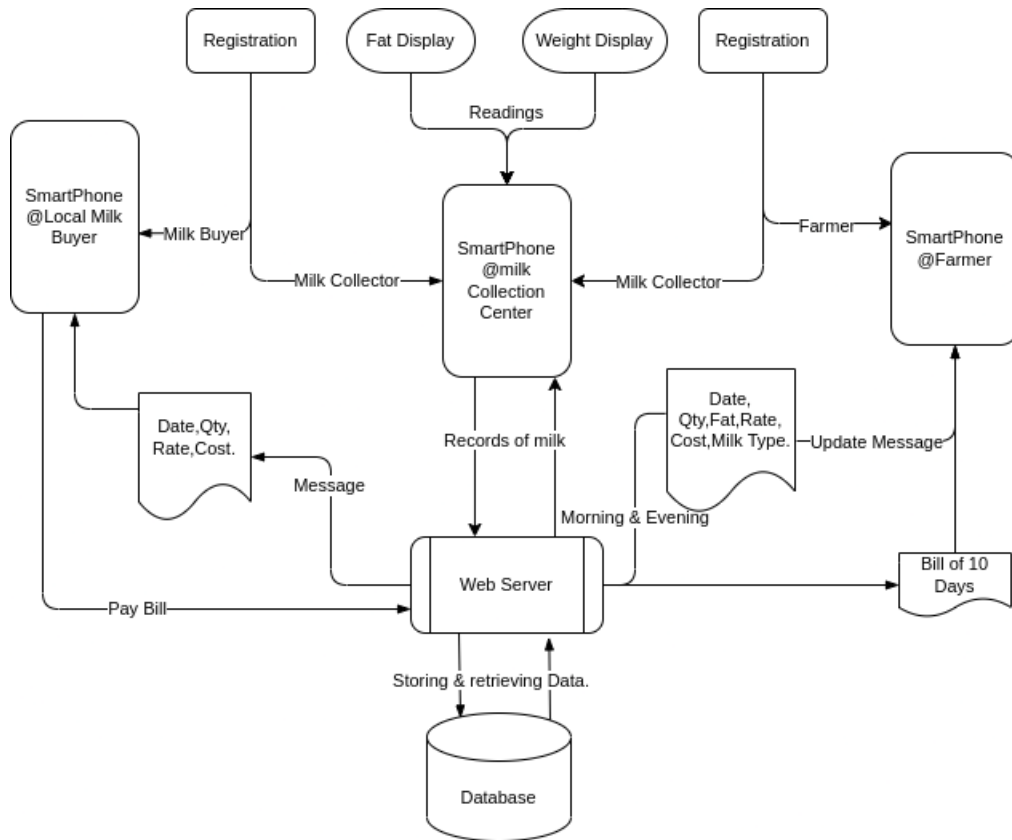


Figure 2: Workflow diagram of Application

6.2 Software and Hardware requirements and availability

- **Hardware** Laptop/Computer with minimum following functionalities:
 - Processor: Intel Core i5
 - RAM: minimum 8 GB
 - OS: Windows 10/Linux/macOS
- **Software** Laptop/Computer with minimum following functionalities:
 - Android Studio
 - VS Code
 - Latex
 - Firebase
 - Android Emulator/Device
- **Other** Internet Connection Required

7 Schedule

The Figure 3 shows the project schedule to be used to implement the project.



Figure 3: Project Schedule

References

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