International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 11 | Nov - 2021 ISSN: 2582-3930

ERP Based Dairy Management System

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Abstract - The ERP Based Dairy Management System is a connection between the peoples of rural area and dairy Farms. The ERP Based Dairy Management System deals with the management of all dairy record and transaction. The system is based on the ERP Technology. It is very difficult to keep the records of day to day transaction in the dairy but this ERP based system makes it easy. The main objective of the system is to automate the complete operations of the dairy workers and bring comfort between each dairy manager and the system admin. Nowadays, everything is in the form of data or information so it is necessary to maintain that information and also the accessing that information of the Dairy farms. So the ERP based Dairy management system will be able to maintain the data, access the data and also update the data.

***Key Words*:** ERP, RFID module, Database.

1.INTRODUCTION

India is one of the top milk producing countries. Indian dairy sector is largely dominated by cooperatives. Farmers are the key stakeholder of these cooperatives. At present milk cooperatives are well connected with its parent dairies but farmers are largely detached. So to improve transparency and to integrate key stakeholder milk cooperatives has to adopt technology. Milk cooperatives are passing through a challenging phase. It is difficult for milk cooperatives to manage their resources. It is next to impossible to manage different operational, financing and investments activities without any central system. In order to manage all these aspects it is important to implement a central system that can manage all the resources and supply chain of the dairy industry.

ERP platform improves the coordination between cattle farmers and Dairy. The main goal is to inform people about the application software that has automatically completed the operations of the Dairy Distributor Office. It maintains the records of members, i.e., name, gender, contact no., address, email id, etc. As a outcome, we can easily update data if any. This application is developed in such a manner that it should suit all types of distributors in the future. We have to implement this in every possible way in many sectors to increase the overall efficiency. and it will raise the usage of the dairy management system. To Manage all this requirement, they need software which will work and take care of it

1.1 OBJECTIVE

1. The aim of dairy management application is to establish connection between rural people and dairy management.
2. Our main goal is to develop this application to support the dairy industry.
3. Dairy milk management system is a used to maintain day to day transactions in a Milk Distributor Office. This software helps to register all the suppliers, buyer details, purchases, sale details, etc.

1.2 MOTIVATION

It is very difficult to collect records and save all the information because the dairy supply, Milk Rate Information. This will automate the traditional process chain becomes very long, so create this application for a transparent database system for customer benefit. User-friendly application with the local interface available in local language for better understandability and ease of use. An important function of this Application is to save time and manpower and also Maintaining Dairy information, Staff Information & Customer information into the today's world.

2. BLOCK DIAGRAM

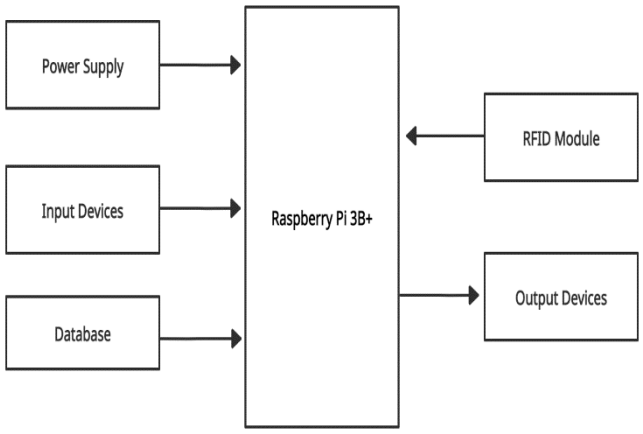

Fig 1: Block Diagram

3. BLOCK DIAGRAM DESCRIPTION

- Power Supply:
  In this system AC/DC Adapter is used as a power supply .An AC adapter ,AC/DC adapter, AC/DC converter is a type of external power supply. It is enclosed in a case identical to an Ac plug. AC adapters are used with electrical devices that require power but do not contain internal components to derive the required voltage and power from mains power.

- Raspberry Pi 3B:
  Raspberry pi is a low cost ,small single onboard computer. The Raspberry Pi 3 Model B uses a Broadcom BCM2837 SoC with a 1.2 GHz 64-bit quad-core ARM Cortex A-53 processor. The Raspberry pi 3B model has 1GB RAM . It is equipped with 2.4 GHz Wifi 802.11n (150 Mbit/s) and Bluetooth 4.1 (24 Mbit/s). It also has a 10/100 Mbit/s Ethernet port. Raspberry pi provides Raspberry OS which is also called as Raspbian. The Raspberry pi comes up with the 40 GPIO pins. Raspberry pi is acting as a core component in the ERP based Dairy Management System. All peripherals are controlled by the Raspberry pi in this system.

- RFID module :
  The RFID module works on 13.56 MHz frequency. It comes with RC522 microcontroller. RFID module is used to communicate with the RFID tags. It is used for the authentication of dairy Workers. It shows unique ID number . Every worker has its own RFID card.

- Input Devices :
  The keyboard and Mouse are used as the input devices. These are used to enter the data of the farmers and the daily updates of the dairy farm.

- Display devices:
  LCD device is used to display all the details like the Milk quantity, type of cattle, SNF, Amount etc.,

4 .FLOWCHART

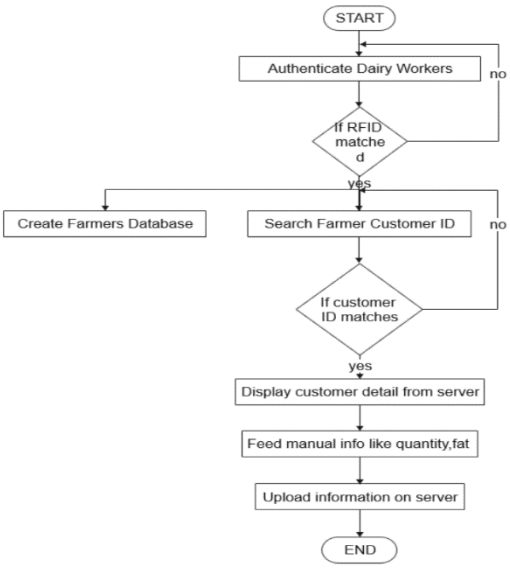

Fig 2: Flowchart

5.WORKING PRINCIPLE

1. Database collection: In this step, we will manually collect the data of customers. The data contains name of customer, address, mobile number, e-mail id, etc
2. Authentication of dairy workers: For the authentication of the dairy workers RFID module is used. If the RFID is matched then it will go for the next step and if it fails then it will again go for the authentication.
3. Database creation: In this step, data collected in first step is created on the system using MySQL.
4. GUI development: Database updation is done at this stage.
5. Admin panel: The admin has unique login and password. Admin will check the reports entered by the manager. He gets all the reports from each of the dairies. From that reports, he performs data analysis and data filtration.

6. Used Software /Programming Language:

- Python Programming Language:
  Python has leading the world since last few years. Python is developed in 1991 by Guido van Rossum. Python is one of the most interpreted high level general purpose programming language of 21st century. It is object oriented language. Python is simple to learn. Python has one more advantage that syntax in it helps programmer to do coding in lesser steps. So it decreases time of production and cost of python is used in most of cases including web

development, game development, software development, artificial intelligence and machine learning and many more. Python is consistently first famous language. Other than this application python is used as back end development, data science and writing scripts .

- Raspbian Operating System:
  Raspbian is an official operating system based on Linux-Os Debian. It is used in office suite, web browsing, DIY project. From 2015 it is officially used and developed by the Raspberry Pi Foundation as the primary operating system for the Raspberry Pi family of compact single-board computers. It looks like desktop, maCos and Microsoft windows. The menubar is at top and shortcut to terminal, file manager. On the right side contains Bluetooth menu, WiFi menu , volume control and digital clock. Raspberry Pi has three installation packages Raspberry Pi OS Lite, Raspberry Pi OS, Raspberry Pi OS Full.

- SQL:
  SQL-Structured Query Language. It is used to interact with database. It is standard language used for relational database system. SQL is used for update data on a database or retrieve data from database. SQL has command over execute query against database, insert record, delete record , retrieve data from database. They support major command like SELECT, UPDATE, DELETE, INSERT, WHERE. SQL has advantages like its portability , automatic client handling, high speed ,well defined standard, faster query processing ,etc.. It is used in ATM and other banking system , inventory system , payroll system , websites. Overall application is considered as RDBMS.

7. CONCLUSION

The Milk Dairy Management System was developed using Python. This web-based application serves as a simple Dairy App to maintain the daily milk record of registered account members. The project focuses on the concept and record of the management of dairy products. The architecture of this is so basic that the user would not face any challenges when running on it. The proposed system project helps customers to handle data efficiently.

This application enables the registration of all suppliers, customer records, order data, sales details, etc. This deals with milk management, which deals with the distribution of milk by making records in the database.

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