

Farming Equipment Rental System

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Abstract –

As everyone is aware, agriculture is essential to any nation. It provides many people with employment options. The agricultural sector has recently seen a variety of new innovations carried out. In agriculture, a variety of machines are employed that can complete tasks much more quickly than humans. In other words, machinery is crucial to agriculture, but not all farmers can afford it due to its high cost. Accordingly, farmers will be able to rent farming equipment to other farmers on the planned website, depending on their needs. Due to the high cost of farming machinery, which not everyone can afford, there is an increasing need for this solution. Database system, crop prediction, and crop price prediction are all included on this website.

Key Words: Farmer, Agriculture, Rental, Equipment, Python, Machine Learning

I. INTRODUCTION

The agriculture industry is an important part of any country's economy. Farming requires machinery like tractors, harvesters, spade etc without them farming is not possible but this machinery is not affordable to every farmer or there are some farmers which have machinery which are not of their use.

Even after the expensive rates of the equipment there is a high demand for new equipment which increases the need of new machinery which in turn affects the waste generated, resource required and load on the industry to make new equipment although various machinery are underutilized.

This problem generates the need of a proper rental system for the equipment. The rental system of the equipment is basically for a farmer who doesn't want to or can't afford the equipment and the farmer whose machinery are unused for a very long time.

The solution website is based on the working of Rental system for the farmer to rent their equipment to the farmers who need them this will save the money of the farmer from buying equipment and will be financially beneficial for the farmer who need them.

II. LITERATURE SURVEY

Farm Equipment Rental Market Analysis: The global farm equipment rental market is projected to experience significant growth in the coming years. According to a report by Market Research Future, the market is expected to grow at a CAGR of 7.3% from 2019 to 2024. This growth can be attributed to several factors, including the increasing demand for food due to population growth, the rising adoption of precision farming techniques, and the high cost of purchasing farm equipment. North America is currently the largest market for farm equipment rental, with the United States accounting for the majority of the region's revenue. However, the Asia Pacific region is expected to grow at the highest rate during the forecast period, driven by the increasing adoption of technology in agriculture and the growing population in the region.

Farm Equipment Rental Industry Segmentation: The farm equipment rental market can be segmented based on the type of equipment, application, and region. Based on equipment type, the market can be divided into tractors, harvesters, sprayers, and others. The tractors segment currently dominates the market, accounting for the largest share of revenue. This is due to the high demand for tractors in agriculture for tasks such as ploughing and tilling. Based on application, the market can be segmented into land development and seed bed preparation, sowing and planting, weed cultivation, and others. The land development and seed bed preparation segment currently holds the largest market share, as these are crucial steps in the agricultural process and require specialized equipment.

Farm Equipment Rental Market Trends: One of the key trends in the farm equipment rental market is the increasing adoption of precision farming techniques. Precision farming involves the use of technology to adjust farming practices accordingly. This has led to increased efficiency and higher yields, driving demand for specialized equipment such as precision sprayers and planters.

III. PROBLEM DEFINITION

Agriculture industry is dependent on machinery for effective crop yields. Farmers have a financial problem when it comes to farming equipments. Farming equipments have become costly & this is majorly a problem for all the farmers who work on small scale. During off season many of the farming equipments remains unused which leads to low income. Another problem may be of underutilization of equipments, where full use of equipments can't be made. All the farmers can't afford the equipments, some can't make the use of equipments properly & this leads to the unutilization of the equipments, which limits the ability to improve the equipment productivity. This website contains complete and up-to-date equipment data. Users can access the website by entering their user name and password. Users can access this website at any time. We are mainly designing this website for disadvantaged farmers as are unable to purchase each and every types of equipment as a result of this. As a result, we are creating a web application to provide a low-cost rental service called as Farmer Equipment Rental System.

IV. PROPOSED WORKING

The proposed Web-based Farmer Equipment Rental System would be an online platform connecting farmers with rental owners who offer agricultural machinery for rent. The system will provide a range of equipment, including tractors, tillage machinery, harvesting equipment, and other specialized machinery.

The system's key features include:

1. Equipment Listings
2. Equipment Search
3. Online Booking
4. Feedback and Reviews
5. Crop Prediction

The proposed system aims to provide farmers with access to a wide range of equipment at competitive prices, enhancing efficiency and productivity while reducing costs. Developed to assist administrators, web-based rental systems are increasingly popular among farmers due to their cost-effectiveness and flexibility. Despite this, limited research exists on user satisfaction with such systems. To bridge this gap, our study collects data from farmers who have used or are currently using web-based rental systems. Notably, the Crop Prediction Model utilizes historical data and environmental factors to predict crop yield, aiding farmers in better crop planning.

V. RESULT

After executing the above proposed system, we got the following results.

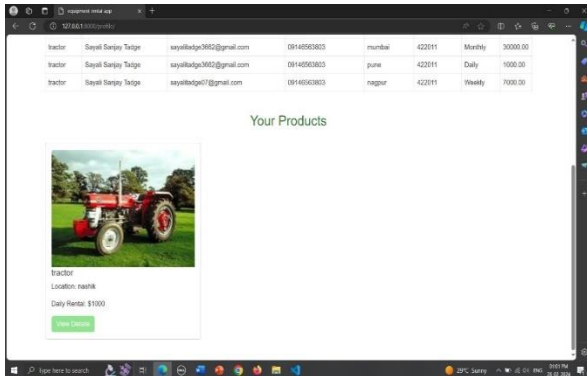


Fig 4.1: Dashboard Screenshot

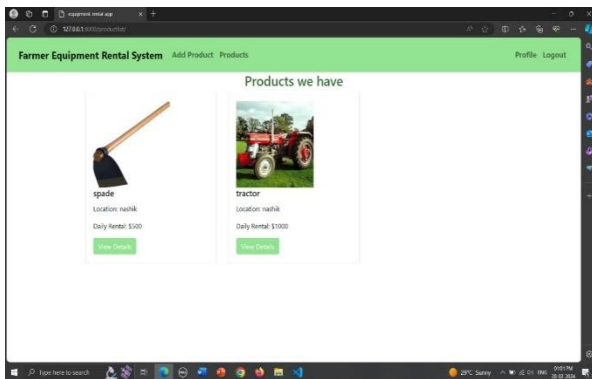


Fig 4.2: Equipment List

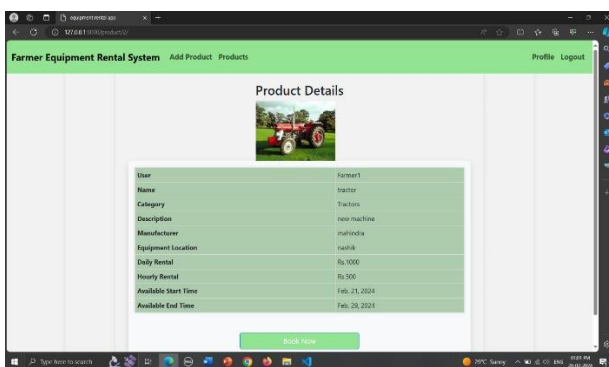


Fig 4.5: Product Details

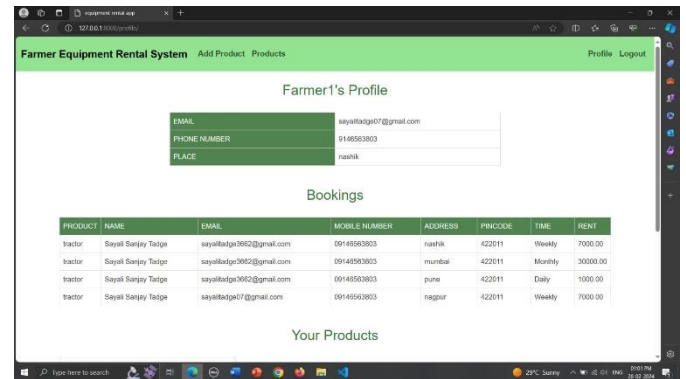


Fig 4.3: Farmer Details

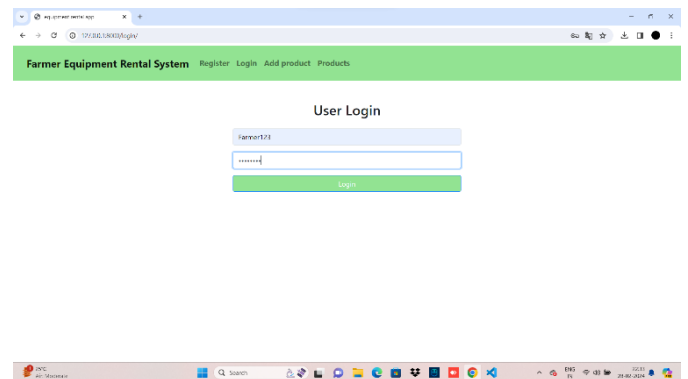


Fig 4.4: User Login

VI. CONCLUSION

Farmers can rent agricultural equipment on a simple to use, useful, and secure platform using the Farming Equipment Rental System. Efficiency in the farming industry grows by providing a greater range of equipment options and doing deal with the need of going to rental shops. By improving manufacturing and earnings, Website aims to reduce farmers' expenses and improve durability using features like feedback systems, models for prediction, and support in multiple languages. All things considered, it manufacturing may improve the use of resources and support the development of the industry.

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