UPLIFTING THE FARMER THROUGH CONNECTED ECOSYSTEMS

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ABSTRACT -

Through this web portal, a farmer can gain access to all the elements of the farming cycle. This portal is just a single platform where a farmer can access information from different aggregators for retailing, leasing and finally taking his produced harvest to the nearest market. This application is to provide a means of easy transaction for all their farming activities and their personal expenses. Crop loans will help them to buy or lease a farm machinery and also have access to all the local vendors for his plantation needs including expert advisors from the local university.
Uplifting of farmers Through Connected Ecosystems will help them by providing all the required data which help them in improving their farming activities and helps aggregators to sell their products
Our proposed system will reduce the disadvantages of existing system and its help to farmers, general users, aggregators by providing detailed information about harvesting, selling crop and buying fertilizers.

KEYWORDS – *Wetland ecosystems, farming activities*

1. INTRODUCTION

Uplifting the Farmer Through the Connected Ecosystems is online Web Portal used by all the farmers, aggregators, users in several sections of the farming. This web portal provides the major details required for farmers and aggregators. Farming activities should be taken care by farmers. This portal may be a single portal for all the farmers to induce details like where to shop for seeds, pesticides, insecticides, fertilizers and where to sell the harvested crop. It allows farmers to buy machinery and take loans to expand farming activities or to buy required resources for farming. It helps the aggregators to expand their business. It allows general users to buy crops.
This application maintains the whole data in a exceedingly centralized and secured database server in order to maintain consistency in report generation and allows users to access from any location and any device. This is a web application that enables multi user access of system and to trace and manage the data simultaneously. Various roles and authentications have been provided and access to varied areas in the tool is restricted consistent with the role given to users.
The aim of this application is to reduce the manual effort needed to manage the details of tasks and performance measures of each and every user which is very tedious. This portal helps farmers, aggregators, buyers in different forms. Also, this application provides an interface for other users to manage the details of and to generate reports. This helps to prevent unnecessary delays and also to prevent human errors. This system has different operations which might be performed by different users.
This technique has enriched UI so that a novice user did not feel any operational difficulties.
Uplifting the Farmer Through Connected Ecosystems helps farmers in entire farming by giving information about where to buy required things in agricultural activities

2. LITERATURE SURVEY

The case study from the United States reported on a comprehensive study that describes the extent of assumption of nutrient, pest, soil, and water-management practices and assesses the factors that have influenced adoption across diverse regions. Mr McRae is Chief, Environmental Information and Analysis, Agriculture and Agri-Food Canada. Mr Steenblik is a senior economist at the OECD.

The study scrutinized the small-scale, resource poor farmer's ongoing level of participation, rate of adoption of agricultural technology.

3.EXISTING SYSTEM

Farmers, both individually and collectively, are the direct managers and users of ecosystems. So to extend their enthusiasm for environmental protection, it's necessary to form awareness of the existence and significance of ecosystem service functions in their respective regions. Therefore, it is useful to spot the factors that influence farmers' awareness of and demand for ecosystem services of various types, in several places. A questionnaire survey is used to study farmers' ecosystem services awareness within the Lake area. They found that the farmers' awareness of wetland ecosystem services was high; however, there are differences in the importance of ecological services among farmers in various survey areas and farmers paid more attention to the Lake wetland ecosystem supply services and regulatory services. The study also found that gender, age, occupation and income of farmers had a major impact on the cognition of farmers' ecosystems.

Present days technologies are growing rapidly and farmers are not having proper guide about their farming activities and to harvest a crop with good yield so this system will help and guide them

Disadvantages:

Difficulty in finding machinery and taking farms for rent.

Difficulty in producing the reports.

4.PROPOSED METHOD

Proposed Architecture:

This study relies on a questionnaire survey on farmers' awareness of and demand for various ecosystem services. Policy recommendations to improve farmers awareness of ecosystem services have also been suggested. Policy-makers and managers can use the results presented during this study to undertake ecologically sound construction to accommodate immigrants, while satisfying farmer's individual needs and encouraging sustainable socio-economic and environmental development in immigration zones. Farmer's awareness of ecosystem services is related to their personal elements and a series of socioeconomic factors. Individual awareness of core ecosystem services in Village was divided into three levels according to the survey results: low awareness (aware of three to 5 core ecosystem services); medium awareness (aware of six to 8 core ecosystem services); and high awareness (aware of 9 to eleven core ecosystem services).

Advantages:

Easy to use by all kins of user.

Delivers enough security.

Provide facility for the farmers to upload details of their harvested crops in portal.

Architecture of the system

MVC- Model View and Controller. It is a design pattern which is used to separate the business logic, presentation logic and data.

MVC Structure has the following 3 parts:

Controller acts as an interface between View and Model. Controller interrupts all the incoming requests.

Model is used to represent the state of the application. It contains business logic.

View represents the UI (User Interface).
Main Advantage of MVC Architecture
1. Centralization of navigation control 2. Large applications are easily maintained

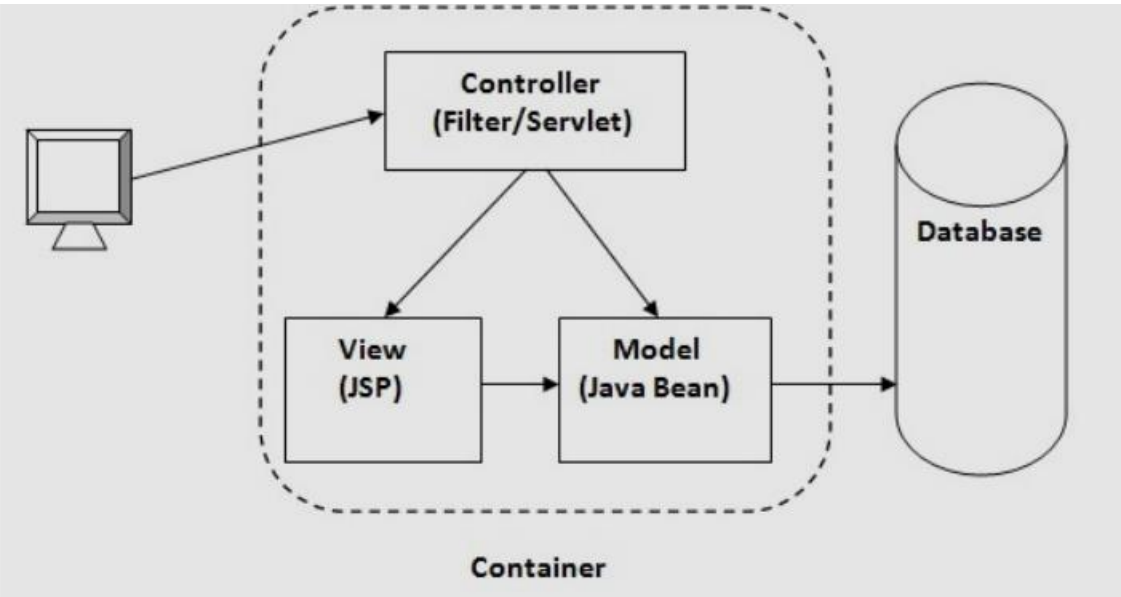

Figure 1: Architecture for Uplifting the Farmer Through Connected Ecosystem

5. IMPLEMENTATION

Implementation includes all the required activities for converting old system in to new system. The old system consists of manual operations, which is operated in a very difficult manner from the proposed system. A proper implementation is essential to provide a reliable system to meet the requirements of the organization.

Admin:
This will enable all the managerial tasks of the portal such as managing the records and view total statistics. Some of the security functions of the portal such as new logins are managed.
Farmer:
Farmer can give the details about their crop and view the details of fertilizers, loans, machinery and lands available for farming.
Fertilizer:
Fertilizer can provide details of fertilizers and seeds available in their shops.
General User:
General User can access details about the crops posted by farmers

TECHNOLOGIES USED:
Web pages can be developed by using the technology called Java Server Pages (JSP) that supports dynamic content. Java code can be inserted by the developers in HTML pages by making use of special JSP tags, they generally start and end with <% %> respectively.
A Java Server Pages component can be a style of Java servlet that's designed to satisfy the role of a trojan horse for a Java web application. Text files that combine HTML or XHTML code, XML elements, and embedded JSP actions and commands are written by web developers.
JSP can be used to collect input from users through Webpage forms, present records from a database or another source, and build Webpages dynamically.
Java Technologies for Web Application Development
Web applications are distributed applications, meaning that they are programs that run on quite one computer

and communicate through a network or server. Specifically, web applications are accessed with an online browser and are popular because of the convenience of using the browser as a user client. For the enterprise, the facility to update and maintain web applications without deploying and installing software on potentially thousands of client computers can be a key reason for his or her popularity. Web applications are used for web mail, online retail sales, discussion boards, weblogs, online banking, and more. One web applications are often accessed and utilized by ample people.

Eclipse IDE:

Integrated development environments (IDEs) can help developers with writing code and using class libraries and frameworks. They increase developers' productivity by combining common activities of writing software into one application: editing ASCII computer file, building executables, and debugging. the choice of an editor or IDE depends on several factors, including the project's nature, the developer's skills and skill, the strategy utilized by the event team, and personal preferences.

Apache Tomcat is an open-source implementation of the Java Servlet, Java Server Pages, and Java Expression Language and WebSocket technologies. Tomcat provides a "pure Java" HTTP web server environment during which Java code can run.

It allows the users to run Servlet and JAVA Server Pages that are supported the web-applications. it'll be used because the HTTP server. The performance of the Tomcat server isn't just about nearly as good because the designated web server. it should be used as separate product with its own internal Web-server. it's going to even be used as mutually with the others Web-servers which include Apache, Microsoft Internet Information Server, and Microsoft Personal Web-server.

6.TYPES OF TESTING

UNIT TESTING

Unit testing is process which is used for designing the test cases that validate that the inner program logic is functioning properly, and the program inputs produce valid outputs. All decision branches and inner code flow should be validated. It's the testing of individual software units of the applications. It is done after the completion of a single unit before integration. This is often a structural testing, that relies on knowledge of its construction and is invasive. Unit test generally perform basic tests at component level and test a selected business process, application, and system configuration. Unit tests makes sure that each unique path of a business process performs accurately to the documented conditions and contains clearly defined inputs and expected results.

JUNIT TESTING:

It is an open-source Unit Testing Framework for JAVA. JUNIT testing is employed by the java developers for writing the code and running the repeatable tests. It is initially developed by Erich Gamma and Kent Beck. It's an instance of xUnit architecture. It is used for Unit Testing of a little chunk of code.

Developers who are using test-driven methodology must write and execute unit test first before any code.

Once the code is completed, all tests are to be executed, and it should pass. Every time when any code is added, you need to re-execute all the test cases and ensure that nothing is broken.

7. RESULTS

At the end, it generates Web Portal, which contains home page, registration page and login page. Based on the user login, it will generate operations which can be performed depending upon the user. Farmer can perform operations such as adding and viewing crop sale, land rental, machinery, fertilizers. Aggregator (Fertilizer) can add and view fertilizers and a general user can only view the crop sale.

Sample output:

Figure 2: Home Page

Figure 3: Registration Page

Figure 4: Login Page

Figure 5: Farmer Homepage

Figure 6: Fertilizer Homepage

Figure 7: General user Home Page

Figure 8: View Crop Information

Figure 9: Add Machinery

Figure 10: View Fertilizers Information

Figure 11: View Land Rentals

8. CONCLUSION

- A new way of approach for better understanding of farming practices are being employed by the farmers.
- The proposed system solves their problems related to lack of data about the farming and its facilities.
- The proposed system is simple and easy, also it is a better way to guide farmer to assist them to lift both socially similarly as economically knowing to their betterment of future.

9. FUTURE SCOPE

- This application has been developed to be implemented in place of existing manual system.
- This application provides entire information and guidelines for agriculture.
- The specific purpose of this system is to store and process information about different fertilizers, crops, machinery, loans at different stages and generates the reports as and when required. Maintenance of the system is done by the administrator.

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