STOCK MANAGEMENT WEBSITE REPORT

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PROGRAMMING 3A

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EXECUTIVE SUMMARY

I am pleased to present to you a report on our proposed stock management website. I have developed a comprehensive solution that will streamline stock management processes for businesses of all sizes.

OBJECTIVES

My stock management website offers a user-friendly interface that makes it easy for businesses to track their inventory. With features that allow farmers and employees to log into the website to access user-specific information, allow a logged-in employee to add a new farmer to the database, allow a logged-in farmer to add a new product to their profile in the database, allow a logged-in employee to view the list of all the products ever supplied by a specific farmer, and also allow a logged-in employee to filter the displayed list of products supplied by a specific farmer.

I have also prioritized security and scalability in the development of our website. This platform uses the latest encryption and security measures to ensure that all data is always protected. Moreover, my website can handle high volumes of traffic and inventory, allowing businesses to grow without worrying about outgrowing their stock management system.

SCOPE

1. Which non-functional requirements are of high importance? Why?

1. Performance: This is important to ensure that the website is responsive and loads quickly. It impacts the overall user experience of the website. This would refer to the speed at which Farm Central's Inventory Management system responds to a user's action under different workloads. (Rome, 2023).

- Client/user discontent and decreased productivity would result from Farm Central's system failing to continuously function at an ideal level. Performance evaluations will be done at every level of development to address this.

2. Security: Security is of utmost importance to protect the sensitive data that will be stored on the website. Appropriate measures such as encryption and secure access controls should be implemented. (Rome, 2023).

3. Scalability: The website should be scalable to handle an increasing number of users and data. This is important as the website grows over time. (Rome, 2023).

4. Reliability: The website should be reliable, which includes high availability, fault tolerance, and recovery mechanisms. This ensures that the website is available to users and can recover quickly in case of any failure. (Rome, 2023).

- As failures and faults might harm Farm Central's reputation and the patronage of its customers, the Farm Central System would be able to function flawlessly.

5. Usability: The website should be easy to use and navigate by users irrespective of their technical background. (Rome, 2023).

- This will be addressed by considering all users of the Inventory Management System and their departments, resulting in a design that is centered on their needs.

6. Are design patterns and architecture patterns relevant?

Yes, design patterns and architecture patterns are relevant in the development of a stock management website. They offer proven solutions to common software development problems that can save time and effort and increase the quality and maintainability of the code. (Lazuardy, 2019).

ASSESSMENT

1. How are we going to address these requirements? How do they impact how we plan to develop the software?

1. Performance can be improved by optimizing the code and reducing the number of requests made to the server. Caching could also be implemented to reduce load times. (Martin, 2023).

2. To ensure security, appropriate measures such as access controls, password protection, and data encryption should be implemented. (Martin, 2023).

3. To improve scalability, the stock management website could be developed with a modular architecture, allowing for easy extension and modification as the website grows. (Martin, 2023).

4. To ensure reliability, the website could be hosted on a high-availability server and configured with fault tolerance and recovery mechanisms. (Martin, 2023).

5. Usability can be improved by designing the website with a user-centric approach, considering user feedback and conducting usability testing. (Martin, 2023).

The impact of these non-functional requirements is that they guide the development process and ensure that the website meets the required standards for performance,

security, scalability, reliability, and usability. Failure to meet these requirements could result in a website that is slow, insecure, prone to failure, difficult to use, and unable to handle large amounts of data. (Martin, 2023).

2. How should they be applied in the project, if at all?

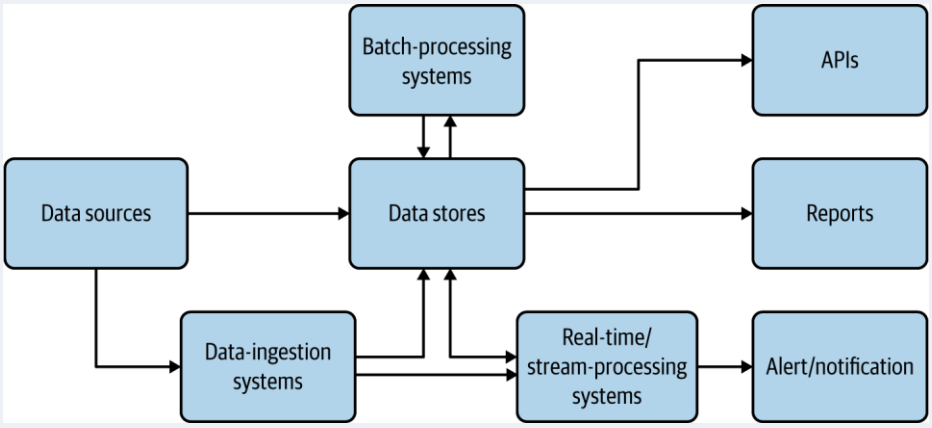
In terms of **design patterns**, they can be applied to enhance the user experience and make it more intuitive for the user to find and manage their stock. One useful design pattern to consider is the Observer pattern, which involves maintaining a list of objects and notifying them automatically of any changes. This could be used to notify users of stock levels, restocking, and any changes to order status. (Chadynka, 2019).

- However, such a design should only be used where it is important to avoid making the development process cumbersome and time-consuming. This would assist to enhance the readability, maintainability, and scalability of Farm Central's Inventory Management System.

Architecture patterns are also important in developing a robust, scalable web application. One important pattern to consider is the Model-View-Controller (MVC) pattern. This involves separating the application into distinct roles: the Model (database), View (front-end), and Controller (application). This separation of concerns helps to improve the maintainability and extensibility of the code base. (Walker, 2022).

- A Farm Central System's performance, scalability, and maintainability will all be enhanced by the architecture chosen, which is dependent on the project's needs.

Overall, design patterns and architecture patterns offer a valuable toolkit for developers to create efficient, effective, and maintainable applications. By incorporating these patterns into the development of a stock management website, developers can create a user-friendly, scalable application that meets the needs of both users and business stakeholders. (Chadynka, 2019).



CONCLUSION

In conclusion, I am confident that this proposed stock management website will be an invaluable tool for businesses looking to optimize their inventory management processes. I believe that this platform's user-friendly interface, customizable features, and advanced security measures make it the best choice for businesses of all sizes.

References

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