IT314 Software Engineering

Group 25

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LAB - 3

Functional Requirements:

Front of the card	Back of the card
As a warehouse owner, I should be able to register into the system with details such as name, location, storage capacity, type of goods stored so that the farmer can find and see details of the warehouse	- The system must enforce data validation rules to ensure that required fields are entered and that the data is in the correct format - The system must be accessible to farmers, who can view warehouse details and search for warehouses based on their needs and preferences
As a warehouse owner, I should be able to login to the system so that I can manage and update my warehouse details.	- The system must validate the warehouse login credentials - The system should only allow other operations of the warehouse after the login is successful
As a warehouse owner, I want to update the status of my warehouse as crops are added or removed in real time so that the farmers can know about the storage space that is available in the warehouse	-The warehouse owner should be able to update the warehouse inventory status in real-time as crops are added or removed. -The system should be able to automatically adjust the inventory levels and available storage space after any changes are made. -The system should display the current inventory status and available storage space in real-time, to allow farmers to make informed decisions. -The farmer should be able to view the updated inventory status and available storage space before making a reservation for storing their crops.

As a warehouse owner I should be able to generate reports of warehouse current goods storage so that I can be able to know the current status of the warehouse.	-The system should allow the warehouse owner to generate a report of the current goods storage in the warehouse. -The report should display the total amount of goods stored in the warehouse, broken down by type of goods. -The report should show the current capacity utilization of the warehouse, indicating how much space is available for additional storage. -The report should display the age and condition of the goods currently stored in the warehouse, to ensure that the warehouse is not overstocked with expired or damaged goods.
As a warehouse owner, I should be able to provide a reservation system for the farmers so that they can book storage space in advance.	-The system should not allow for reservations that exceed the storage capacity of the warehouse. -The system should take the start date and end date for storage.
As a farmer, I should be able to register into the system with details such as name, location, email, number so that I can utilise the system for tracking of crops and finding warehouses for storage.	- The system should validate the input fields given by the farmer during the registration - The system should not register already registered user. - The system should keep Email unique in the system
As a farmer, I should be able to login into the system so that I can access the system and do the needful tasks.	- The system must validate the farmer login credentials - The system should only allow other operations by the farmer, after the login is successful
As a farmer I should be able to keep track of the goods that I have stored so that I can get a better understanding of it.	- The system should allow the farmer to view the details of their stored goods, including the type of goods, quantity, location, and date of storage.

	- The farmer should be able to search for specific goods or filter the goods based on different criteria, such as storage location or date of storage.
As a farmer I should be able to make a reservation about the storage space in advance so that I do not need to worry about getting space for my goods when I reach the warehouse.	-The system should allow the farmer to view the available storage space at the warehouse and reserve the required amount of space. -The system should display the availability of storage space in real-time, to prevent double booking or overbooking of storage space.
As a farmer, I should to be able to receive alerts when my crops are approaching their storage life limit so that I can sell or use them before they go bad.	-The system should track the storage life limit of the crops stored by the farmer in the warehouse, based on their type, condition, and storage environment. -The farmer should be able to set up alerts or notifications for specific crops, with a configurable threshold for when the alerts should be triggered.
As a farmer, I should be able to cancel or modify my reservation so that I can manage my crops storage.	-The system should display all the future reservations that are made by the farmer. - If modifying, the should check if the reservation does not exceed the storage capacity of the warehouse. - If modifying, the system confirms the modification and updates the reservation details.
As a farmer, I should be able to find nearby warehouses so that I can find warehouses to store my goods.	- The system should take input the location from which the farmer wants to find nearby warehouses. - The system should take input the distance of the radius of the circle that may contain the warehouse
As a farmer, I should be able to get recommendations from the system about the types of crops to grow so that I can optimize my yield and minimise wastage.	- The system should take into consideration the current goods already stored by the warehouses in the system and future reservations to give recommendations about the crops to grow

Non-Functional Requirements:

As a user, I want a user-friendly interface so that I can have clear instructions and intuitive navigation.	- The user interface should be clear, simple, and intuitive, with easy-to-understand instructions and labeling - The system should use consistent and familiar design patterns and navigation elements, so that users can easily understand how to interact with the interface - The system should use appropriate fonts, colors, and visual elements to make the interface aesthetically pleasing and easy to read - The system should provide feedback to users when they perform actions, so that they know that the system is processing their requests - The system should be accessible to users with different levels of technical proficiency and different physical abilities, with support for assistive technologies and other accessibility features - The system should be tested with real users to ensure that it is easy to use and meets their needs
As a user, I want the system to be secure so that I can protect my sensitive information from unauthorized people.	- The system should check that a user logged in is not a robot or any computerized application. - The system should use strong encryption and secure communication protocols to protect sensitive information from unauthorized access or interception - The system should enforce access controls and authentication mechanisms to ensure that only authorized users can access sensitive information
As a user, I want the system to be scalable so that it can accommodate future growth and increased usage.	- Ensure that the system architecture and infrastructure can handle future growth and increased usage without compromising performance, reliability, or security. - Design the system to be modular and easily

	extendable to accommodate new features or functionality.
As a user, I want the system to be fast and responsive so that it can provide real time updates to farmers about the storage capacity and availability of nearby warehouses	- The system should be able to provide real-time updates about storage capacity and availability of nearby warehouses to farmers, with a response time of no more than 2 seconds - The system should be optimized for high performance, with minimal latency and delays when processing requests and handling data - The system should be able to handle a high volume of concurrent user requests without experiencing performance issues or slowdowns - The system should use caching and other optimization techniques to reduce the load on the server and improve response times
As a user, I want that the system is highly available and reliable, so that I can ensure that I have access to the information whenever I need it	- The system should be available and accessible to users at all times, with minimal downtime or interruptions - The system should be designed with high availability and fault tolerance in mind, with redundant systems and failover mechanisms to minimize the impact of any failures or outages - The system should be able to recover quickly and automatically from any failures or outages, without requiring manual intervention - The system should provide users with clear and timely notifications in the event of any planned or unplanned downtime or maintenance
As a user, I want the system to be compatible with different platforms and devices, such as laptops, smartphones, and tablets, and should be accessible through a web browser so that I can access the system from any device.	- The system should be compatible with different platforms and devices, such as laptops, smartphones, and tablets - The system should be accessible through a web browser on any device with an internet connection - The user interface should be responsive and adaptive, adjusting to the screen size and resolution of the device being used to access the system - The system should be designed to provide a consistent user experience across different platforms and devices, with all features and functionality available on each platform

	- The system should be tested on different devices and browsers to ensure compatibility and functionality
As a user, I want the system to provide reports on the usage of each warehouse over time, including which crops are stored and when, and the eviction rate of each warehouse.	- Design a reporting module that allows farmers to generate usage reports for each warehouse over a specified time period. - The system should store historical data on crop storage and eviction rates for each warehouse to enable accurate reporting. - The reports should be customizable and allow the farmer to filter and sort the data based on various criteria, such as crop type, storage period, or warehouse location.
As a user, I want the system to have a robust data backup and recovery system so that data is protected in case of system failure.	- The backup system should be designed to take regular, automated backups of all system data, including user information and other critical data - The backup system should be securely stored off-site, preferably in a separate geographic location to ensure that data is protected in case of natural disasters or other emergencies - The recovery system should be tested regularly to ensure that backups can be restored quickly and efficiently in case of system failure or other disasters
As a user, I want the system to have error handling mechanisms in place so that errors and exceptions are handled gracefully and do not impact the operation of the system.	- The system should be designed with robust error handling mechanisms to handle errors and exceptions gracefully - Error messages should be clear and informative, providing users with a clear understanding of the issue and any steps that can be taken to resolve it - The system should log errors and exceptions, providing developers and system administrators with the information they need to diagnose and resolve issues - Error handling mechanisms should not impact the overall operation of the system, and should be designed to minimize any impact on users - The system should be tested thoroughly to ensure that all possible errors and exceptions are handled correctly, and that error messages are clear and informative - Error handling mechanisms should be reviewed and updated regularly to ensure

	that they remain effective and up-to-date with any changes to the system or underlying technologies

Product Backlog:

Sprint 1: Login and Registration of Farmer and Warehouse:

1. As a warehouse owner, I should be able to register into the system with details such as name, location, storage capacity, type of goods stored so that the farmer can find and see details of the warehouse
2. As a warehouse owner, I should be able to login to the system so that I can manage and update my warehouse details.
3. As a farmer, I should be able to register into the system with details such as name, location, email, number so that I can utilise the system for tracking of crops and finding warehouses for storage.
4. As a farmer, I should be able to login into the system so that I can access the system and do the needful tasks.

Sprint 2: Warehouse and Farmer storage updates

1. As a warehouse owner, I want to update the status of my warehouse as crops are added or removed in real time so that the farmers can know about the storage space that is available in the warehouse
2. As a warehouse owner I should be able to generate reports of warehouse current goods storage so that I can be able to know the current status of the warehouse.
3. As a farmer I should be able to keep track of the goods that I have stored so that I can get a better understanding of it
4. As a farmer, I should to be able to receive alerts when my crops are approaching their storage life limit so that I can sell or use them before they go bad.

Sprint 3: Warehouse Reservations

1. As a warehouse owner, I should be able to provide a reservation system for the farmers so that they can book storage space in advance.
2. As a farmer I should be able to make a reservation about the storage space in advance so that I do not need to worry about getting space for my goods when I reach the warehouse.
3. As a farmer, I should be able to cancel or modify my reservation so that I can manage my crops storage.

Sprint 4: Nearby warehouses and Crops recommendations

1. As a farmer, I should be able to find nearby warehouses so that I can find warehouses to store my goods.
2. As a farmer, I should be able to get recommendations from the system about the types of crops to grow so that I can optimize my yield and minimise wastage.

Sprint 5: System security and Availability

1. As a user, I want the system to be secure so that I can protect my sensitive information from unauthorized people.
2. As a user, I want the system to have a robust data backup and recovery system so that data is protected in case of system failure.
3. As a user, I want the system to have error handling mechanisms in place so that errors and exceptions are handled gracefully and do not impact the operation of the system.
4. As a user, I want that the system is highly available and reliable, so that I can ensure that I have access to the information whenever I need it.

Sprint 5: System optimization and error handling

1. As a user, I want a user-friendly interface so that I can have clear instructions and intuitive navigation.
2. As a user, I want the system to be scalable so that it can accommodate future growth and increased usage.
3. As a user, I want the system to be fast and responsive so that it can provide real time updates to farmers about the storage capacity and availability of nearby warehouses
4. As a user, I want the system to be compatible with different platforms and devices, such as laptops, smartphones, and tablets, and should be accessible through a web browser so that I can access the system from any device.
5. As a user, I want the system to provide reports on the usage of each warehouse over time, including which crops are stored and when, and the eviction rate of each warehouse.