

AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

Faculty of Science and Technology



Project Proposal: **Fertiware: Streamlining Fertilizer Distribution.**

Date of Submission: **6 May 2023**

Course Title: **SOFTWARE ENGINEERING**

Course Code: **01596**

Section: **E**

Semester: **Spring**

2022-23

Course Teacher:

DR. S. M. HASAN MAHMUD

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Group Name/No.: **04**

No	Name	ID	Program	Signature
1	Mohammad Naimul Haque	21-44387-1	BSc CSE	
2	Md. Abid Hossain	21-44375-1	BSc CSE	
3	Al Fesani	21-44381-1	BSc CSE	
4	Shorbani Chowdhury	21-44378-1	BSc CSE	

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FACULTY COMMENTS	Marks Obtained	
	Total Marks	

Fertiware: Streamlining Fertilizer Distribution.

Background: The agriculture industry relies heavily on efficient fertilizer distribution to ensure the growth and productivity of crops. However, the current distribution process is often plagued by inefficiencies and a lack of transparency, making it challenging for fertilizer distribution warehouses to keep track of inventory levels and manage transactions. These inefficiencies can lead to waste, overstocking, and decreased profitability for fertilizer distributors. In addition, farmers are not always guaranteed timely delivery of fertilizer, which can negatively impact their crop yields.

Fertiware aims to address these challenges by providing a comprehensive platform for fertilizer distribution warehouses to manage their inventory, transactions, and distribution processes more efficiently, while also ensuring that farmers receive reliable and timely delivery of fertilizer.

Problem Scenario: Most of the fertilizer distribution companies are suffering from inadequate record-keeping, and a lack of real-time data, leading to inefficiencies and decreased profitability. As yearly each distribution company gets an allotment of roughly around 196000->300000 tons of fertilizer which equals to 4000000->6000000 sacks of fertilizer. The distribution companies could not track their stocks information as most of the fertilizer distribution companies uses traditional tally register books. Since the number of stocks are massive therefore the losses each year leads to crores. And on the other hand, farmers do not have any type of organized application in our country to order their needs and they do not have any type of assistance for their real time implementation.

Objectives:

- 1) Provide fertilizer distribution warehouses with an efficient way to manage their inventory and transactions.
- 2) Streamline the distribution process to ensure timely and accurate delivery of fertilizer to farmers.
- 3) Improve transparency in the distribution process to ensure that fertilizer stocks are managed effectively.
- 4) Enhance record-keeping and provide real-time data to support informed decision-making.
- 5) Reduce waste and overstocking by providing accurate stock levels and demand forecasts.
- 6) Provide farmers with access to reliable and timely fertilizer delivery.
- 7) Improve the overall efficiency of the fertilizer distribution process and increase profitability for fertilizer distribution warehouses.
- 8) Facilitate collaboration between fertilizer distribution warehouses and farmers to improve the agriculture industry as a whole.

Solution: FertiWare aims to solve the problems faced by fertilizer distribution warehouses and improve the overall fertilizer distribution process. The app will provide a centralized platform for distributors to manage their inventory and transactions, allowing them to keep track of stock levels and make informed decisions about ordering and distribution. The app will also allow distributors to manage their delivery schedules and ensure timely delivery to farmers. To achieve these goals, FertiWare will feature a real-time inventory management system that allows distributors to track stock levels quickly and accurately. The app will also incorporate a transaction management system that enables distributors to track all their sales and purchases, and make informed decisions about restocking and pricing. In addition, FertiWare will provide distributors with real-time data on delivery schedules and delivery performance, allowing them to adjust ensure timely delivery to farmers. The app will also offer a farmer outreach program that enables distributors to directly connect with farmers and provide with the fertilizer they need. This program will help to increase farmer satisfaction and build long-lasting relationships between farmers and distributors.

The app will store all the information of the employees of the distribution company with their all the information. The app will also track the task which is to be performed by a particular employee. That means if a transaction or any type of work is done, the owner can see who was responsible for that particular task. Finally, FertiWare will provide distributors with access to valuable insights and analytics on their operations,

enabling them to identify areas for improvement and make data-driven decisions to increase profitability and efficiency. By providing a comprehensive platform for fertilizer distribution management, FertiWare aims to streamline the fertilizer distribution process, increase profitability for distributors and improve the quality of fertilizer delivery for farmers.

Our project will be based on incremental software model as An incremental app development model involves breaking down the overall development process into smaller, more manageable chunks. Each increment represents a functional subset of the app and is built, tested, and released independently.

The incremental model is suitable for the FertiWare project because it allows the development team to break down the overall development process into smaller, more manageable chunks, or increments. Each increment represents a functional subset of the app and is built, tested, and released independently.

In the case of FertiWare, the development team can prioritize and work on the most critical features and functionalities first, ensuring that the app is functional and usable at each increment. This approach helps to reduce the risk of delays and setbacks in the development process by providing a more flexible and adaptable way of building the app.

In addition, the incremental model allows for more efficient use of resources, as the development team can focus on specific features and functionality at each increment, rather than trying to tackle the entire project all at once. This approach can help to speed up the development process.

Overall, the incremental model is a suitable approach for the FertiWare project as it allows for a more flexible and adaptable way of building the app, while also providing a more efficient use of resources and reducing the risk of delays and setbacks.

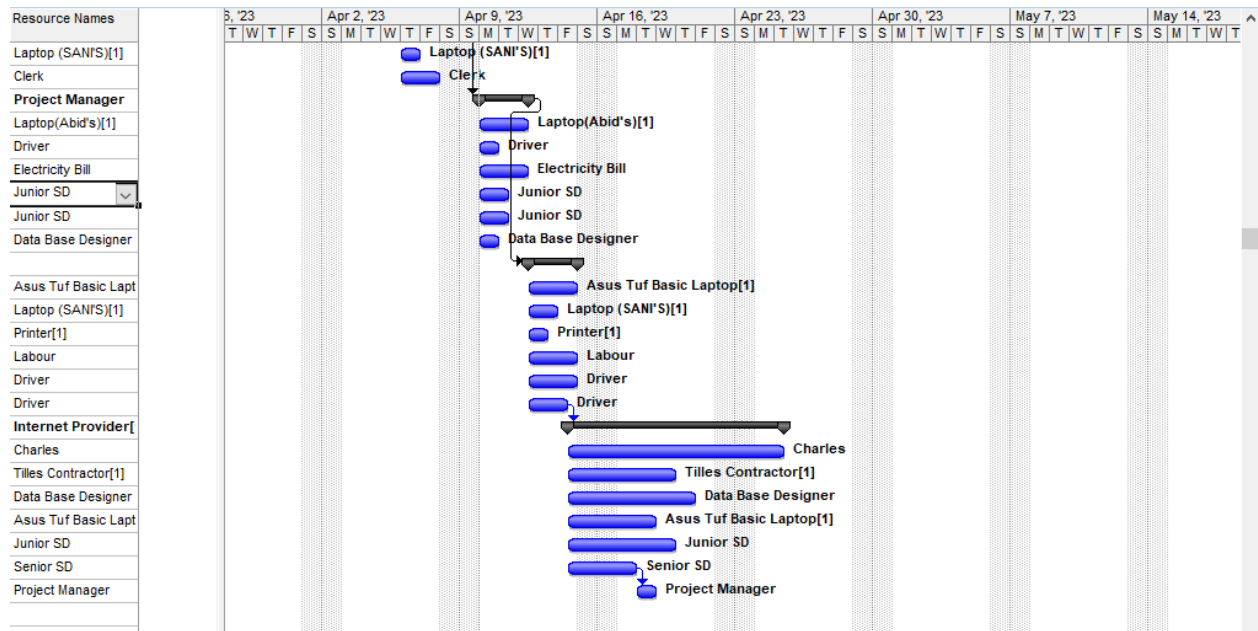
Test Automation

Project Name: Fertiware		Test Designed by: NAIMUL HAQUE		
Test Case ID: FR_3		Test Designed date: 13-3-2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Thor		
Module Name: Payment Session		Test Execution date:13-3-2023		
Test Title: Verify Payment				
Description: Test App payment				
Precondition (If any): User must have valid Visa/Mastercard/Mobile Banking				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the APP Payment Option 2. Choose Item 3. Enter Amount 4. Enter Banking Information 5. Click Confirm	Banking Information, AC: 13821070031779 CCVV: 1788 Amount:1250	User should make the payment successfully.	Not Expected	Failed
Post Condition: Banking information is not validated with database therefore operation failed.				

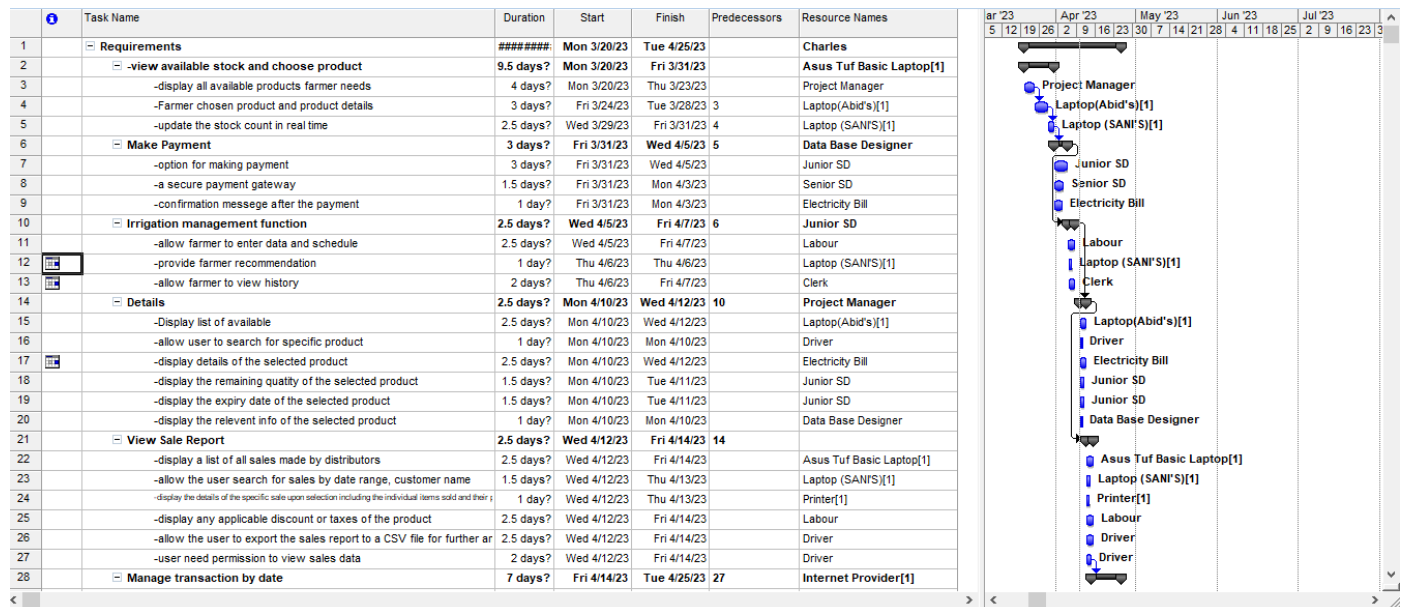
Project Name:		Test Designed by: Al Fesani		
Test Case ID: FR_2		Test Designed date: 13-3-2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Naimul Haque		
Module Name: View Stock session		Test Execution date: 13-3-2023		
Test Title: Verify viewing available stock				
Description: Test viewing stocks				
Precondition (If any): User must have valid user and granting				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the App 2. Login 3. Enter Show Available stocks 4. Click View	Verify: User Check Role for eligibility.	Eligible user should See all the stocks	Not expected	Fail
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: Fertiware		Test Design By: HOSSAIN, MD ABID		
Project Case ID: FR_3		Test Design Date: 13-03-2023		
Test Priority (Low, Medium, High): High		Test Executed By: HOSSAIN, MD ABID		
Module Name: Your Chart (Chart session)		Test Executed Date:13-03-2023		
Test Title: Products adding problem in chart				
Description: Not Adding products after 2 products				
Pre-Condition (if any): User have to login the system first. Then must add minimum 2 product from feature listed Fertilizer.				
Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1. Open the Ferti-Wire Desktop software. 2. Login to the system 3. Add product into chart from feature listed. Minimum two product.	Buy Urea and Ammonium Add Calcium	3 products should show in the chart with total amount	2 products Urea and Ammonium added properly but Calcium product did not add in the chart.	Fail
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Resource Allocation:



WBS Effort estimation:



[illegible]

ID	Risk Description	Probability	Impact	Risk Score	
1	Delay in project management due to unfrozen event	25%	50%	12.50%	
2	Inadequate staffing	15%	70%	10.50%	
3	Technical issues during software development	20%	60%	12.00%	
4	Legal issues with project deliverables	10%	80%	8.00%	
5	Miscommunication with project stakeholders	30%	40%	12.00%	
6	Unavailability of key stakeholders during project phase	20%	35%	7.00%	
7	Legal or regulatory changes impacting project delivery	5%	80%	4.00%	
8	Ineffective project management processes	25%	60%	15%	
9	Lack of clarity in project goals/objectives	20%	17%	14%	
10	Unavailability of key team members	10%	90%	9.00%	
11	Stakeholder conflicts or changes in project requirements	35%	50%	17.50%	
12	Poor communication among team members	25%	60%	15%	
13	Scope creep	30%	60%	18%	
14	Insufficient budget	40%	50%	20%	
15	Technical issues with software/hardware	15%	80%	12%	
16	Inadequate team skills	20%	70%	14%	
17	Quality issues with project deliverables	10%	70%	7%	
18	Vendor or supplier delay in delivery	15%	60%	9%	
19	Budget overrun due to unexpected expenses	20%	18%	16%	
20	Failure to adequately address project risks	5%	10%	0.50%	

