**Capstone Project Prep 3**

1. **Functional Requirements:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Priority** |
| FR 1 | User Registration | Users should be able to create an account by providing basic details such as name, email, phone number and password. | 10 |
| FR2 | Product Catalog | The application should be able to display a comprehensive list of all available products including fertilizers, seeds and pesticides with detailed information. | 10 |
| FR3 | Search Functionality | Users should be able to search for products based on various criteria like name, type, brand, price range, etc. | 9 |
| FR4 | Product Details | Users should be able to view detailed information about each product, including price, quantity, description, images, and reviews. | 9 |
| FR5 | Shopping Cart | Users should be able to add products to their cart and view their cart details, including total price and quantity. | 8 |
| FR6 | Checkout Process | Users should be able to complete the checkout process by providing delivery address, payment details, and confirmation of order. | 8 |
| FR7 | Order Tracking | Users should be able to track their order status, including confirmation, processing, shipping, and delivery. | 7 |
| FR8 | User Profile Managing | Users should be able to manage their profile details such as name, address, phone number, and password. | 7 |
| FR9 | Order History | Users should be able to view their previous order history, including details like order date, order status, and product details. | 6 |
| FR10 | Product Reviews | Users should be able to rate and review products they have purchased, which will be visible to other users. | 6 |
| FR11 | Product Comparison | Users should be able to compare products based on various parameters such as price, quality, and features. | 5 |
| FR12 | Newsletter Subscription | Users should be able to subscribe to the newsletter to receive updates about new products, discounts, and promotions. | 5 |
| FR13 | Wish List | Users should be able to add products to their wish list for future purchase. | 4 |
| FR14 | Product Recommendation | Users should be provided with personalized product recommendations based on their search and purchase history. | 4 |
| FR15 | Multiple Payment Options | Users should be able to pay for their orders through multiple payment options such as credit/debit cards, net banking, and wallets. | 3 |
| FR16 | Order Cancellation | Users should be able to cancel their order and request a refund as per the company's policies. | 3 |
| FR17 | Customer Support | Users should be able to contact customer support for any queries, complaints, or feedback. | 2 |
| FR18 | Mobile App | The application should have a mobile app version for users to access it from their mobile devices. | 2 |
| FR19 | Multilingual Support | The application should support multiple languages for users from different regions. | 1 |
| FR20 | Social Media Sharing | Users should be able to share product details on social media platforms. | 3 |

1. **Wireframes & Prototypes**

**Login Page**   **Search Page**

A screenshot of a computer

Description automatically generated A screenshot of a computer

Description automatically generated

**Add to Cart Page Payment Page**

A screenshot of a computer

Description automatically generated A screenshot of a computer

Description automatically generated

**Logout Page**

A screenshot of a computer

Description automatically generated

1. **Tools (Visio, Balsmiq)**
2. Balsmiq:

Balsamiq is a popular wireframing tool used for creating low-fidelity prototypes. It focuses on simplicity and sketch-like designs to quickly visualize and communicate design ideas. With its drag-and-drop interface and pre-built UI elements, Balsamiq allows users to rapidly iterate and gather feedback on the basic structure and layout of a digital product.

1. Microsoft Visio:

Microsoft Visio is a versatile diagramming tool that allows users to create a wide range of diagrams, including flowcharts, organizational charts, and network diagrams. With its extensive library of shapes and customization options, Visio enables users to visually represent complex information and processes. It offers collaboration features, data linking capabilities, and seamless integration with other Microsoft Office applications.

1. **RTM**

RTM requirement traceable Matrix plays a vital role as it showcases the progress and the status of the project; it contains high level documents which shows us the information on the project data.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Design** | **D1** | **T1** | **T2** | **T3** | **T4** | **UAT** |
| FR0001 | Farmer Registration | farmers should be able to register with their email id and mobile number | Completed | Yes | Yes | Yes | Yes | Yes | Completed |
| FR0002 | Login | Farmers should be able to login after registering | Completed | Yes | Yes | Yes | No | No | Pending |
| FR0003 | Search for products | Farmers should be able to search for required products | Completed | Yes | Yes | Yes | Yes | Yes | Completed |
| FR0004 | Add to cart | Farmers should be able to add required products to cart | Completed | Yes | Yes | Yes | Yes | No | Pending |
| FR0005 | View the cart | Farmers should be able to view the cart | Completed | Yes | No | No | No | No | Pending |
| FR0006 | Completing the order | Farmers should be able to complete the required order | Completed | Yes | Yes | Yes | Yes | Yes | Completed |
| FR0007 | Payment | Farmers should be able to view the payment options | Completed | Yes | Yes | No | Yes | Yes | Pending |
| FR0008 | Order confirmation | Farmers should be able to confirm the order | Completed | Yes | Yes | Yes | No | No | Pending |
| FR0009 | Status of order | Farmers should be able to see the status of order | Completed | Yes | Yes | Yes | Yes | No | Pending |
| FR0010 | Delivery tracking | Farmers should be able to view delivery tracking | Completed | Yes | Yes | No | No | No | Pending |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Design** | **D1** | **T1** | **T2** | **T3** | **T4** | **UAT** |
| NFR0101 | Page load time | Each Page should load within 2 seconds time | Yes | Yes | Yes | Yes | Yes | No | Pending |
| NFR0102 | Description | Description of the products should be mentioned | Yes | Yes | Yes | Yes | Yes | Yes | Completed |
| NFR0103 | Web Content Accessibility Guidelines | The system must meet Web Content Accessibility Guidelines WCAG 2.1 | Yes | Yes | Yes | Yes | Yes | No | Pending |
| NFR0104 | Availability | Products need to be available | Yes | Yes | Yes | No | No | No | Pending |
| NFR0105 | Usability | Products need to be useful | Yes | Yes | Yes | Yes | Yes | Yes | Completed |
| NFR0106 | Usability | Application should be useful | Yes | Yes | Yes | Yes | Yes | Yes | Completed |
| NFR0107 | Security | The data of the user need to be secured | Yes | Yes | No | No | No | No | Pending |
| NFR0108 | Maintainability | Application should be maintained without any bugs | Yes | No | No | No | No | No | Pending |
| NFR0109 | Performance | Application performance should be fast | Yes | Yes | Yes | Yes | Yes | Yes | Completed |
| NFR0110 | Capacity | Capacity of the application should be high to store the data | Yes | Yes | Yes | Yes | Yes | Yes | Completed |

1. **Test case documents**
2. Test case - Login

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC001 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | User login | **Test implemented by:** | Ajas A |
| **Model** | Login | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping for farm products. In that we have login, there we have 4 inputs in which 3 are compulsory & 1 optional. After that results are being shown. |

* Pre-condition: User needs to valid username and password to login to the portal
* Post condition: Successfully logged in to the portal
* Dependencies: Internet Connectivity

|  |  |
| --- | --- |
| Input data | * User ID * Password * Captcha * OTP |
| Expected behaviour | Home page /Pop up error page |
| Actual Behaviour | Home page /Pop up error page |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case - New users

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC002 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | New User | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping for farm products. In this we have new user. There we have 4 compulsory, 1 optional & after that results are being shown. |

* Pre-condition: User needs to register with email id and create a secure password.
* Post condition: Successfully created a username and password
* Dependencies: Internet Connectivity

|  |  |
| --- | --- |
| Input data | * Username * Password set * Email authentication * Captcha * OTP |
| Expected behaviour | Registered and logged in  home page shows |
| Actual Behaviour | Home page pops up |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case – Website ordering

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC003 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | Online ordering | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that, we perform website purchasing. So, we have 1 compulsory, 1 optional and after that results are being shown. |

* Pre-condition: User needs to login & open & have access to the portal.
* Post condition: Successfully have access to the portal
* Dependencies: Internet connectivity/ valid user name password.

|  |  |
| --- | --- |
| Input data | * Product name * Product details |
| Expected behaviour | After login in to the portal user has multiple products to choose |
| Actual Behaviour | Options to select from the product |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case – Online product purchase

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC004 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | Online purchasing | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that we perform online purchasing. We have 3 inputs and 3 are compulsory and after that results are being shown. |

* Pre-condition: User needs to login and open and have access to the portal
* Post condition: Can purchase products online
* Dependencies: Internet Connectivity/ Valid username and password

|  |  |
| --- | --- |
| Input data | * Product name * Manufacturing code * Captcha * Password |
| Expected behaviour | After login in to the portal user has products/ stocks information |
| Actual Behaviour | After login in to the portal user has products/ stocks information |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case – Payment gateway

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC005 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | Online purchasing | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that we perform Payment gateway. With 4 inputs and 4 are compulsory, after that results are being shown. |

* Pre-condition: User needs to login and select a product and check out using COD/CARD OR UPI
* Post condition: Product ordered
* Dependencies: Internet Connectivity/ Have payment details

|  |  |
| --- | --- |
| Input data | * Username * Card number * Expiry * CVV * OTP |
| Expected behaviour | After proceeding to buy the product leads to transaction/payments page |
| Actual Behaviour | After proceeding to buy the product leads to transaction/payments page |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case – Browse products

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC006 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | Browse product | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that we perform Browse products. With 4 inputs and 4 are compulsory, after that results are being shown. |

* Pre-condition: User needs to login & use username & password
* Post condition: User can now be able to browse products
* Dependencies: Internet connectivity

|  |  |
| --- | --- |
| Input data | * Category * Size * Price * Availability |
| Expected behaviour | After login in to the page, user will have options to browse according to needs. |
| Actual Behaviour | After login to the page user will have options to browse according to the needs. |
| Comments | Test was successful |
| Results pass/Fail | Test pass |

1. Test case – User experience

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC007 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | User experience | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that we perform User Experience, with 4 inputs, where 3 are compulsory and after that results are being shown. |

* Pre-condition: User needs to buy a product.
* Post condition: User can now be able to rate the product according to the use.
* Dependencies: Should be a valid customer & bought a product.

|  |  |
| --- | --- |
| Input data | * Name * Order ID * Contact number * Rating |
| Expected behaviour | After the user buys a product, he can rate the product usage whether the product has met the expectations |
| Actual Behaviour | After the user buys a product, he can rate the product usage whether the product has met the expectations |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case – Order cancellation

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC008 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | Order cancellation | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that we perform User Experience, there with 3 inputs. After clicking on submit results are being shown. |

* Pre-condition: User needs to buy a product or cancel the delivery when the product is (Out for delivery)
* Post condition: User can avail for a return on a replacement/ refund
* Dependencies: Should be a valid customer and bought a product.

|  |  |
| --- | --- |
| Input data | * Name * Order id/ order details * Reason to cancel the order. |
| Expected behaviour | After user bought a product, he can return the product for a replacement or a refund if the user wants. |
| Actual Behaviour | After user bought a product, he can return the product for a replacement or a refund if the user wants |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case – Customer service

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC009 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | Customer service | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that we perform Customer service, with 3 inputs where 2 are compulsory and 1 is optional. After that results are being shown. |

* Pre-condition: User needs to be a registered customer and might or might not buy a product.
* Post condition: User can connect to customer service and enquire about the needs.
* Dependencies: Should be a valid customer

|  |  |
| --- | --- |
| Input data | * Name * Contact number * Order id |
| Expected behaviour | Users must be a registered customer with valid user id and password (Ordered the product or not does not matter) |
| Actual Behaviour | Users must be a registered customer with valid user id and password (Ordered the product or not does not matter) |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. Test case – Delivery tracking

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | TC0010 | **Tested By:** | Ajas A |
| **Project Name** | Online Agriculture application | **Testing date:** | 13/06/2024 |
| **Document** | Delivery tracking | **Test implemented by:** | Ajas A |
| **Model** |  | **Test implementation date:** | 13/06/2024 |

|  |  |
| --- | --- |
| Scenario: | Website for online shopping of farm products. In that we perform delivery tracking, with 3 inputs where 3 are compulsory and 1 is optional. After that results are being shown. |

* Pre-condition: User needs should buy the product
* Post condition: User is shared with the tracking number through which customer can track the product Live.
* Dependencies: Should be a valid customer and should order a product

|  |  |
| --- | --- |
| Input data | * Name * Order number * Tracking number |
| Expected behaviour | User is shared with the tracking number through which customer can track the order live. |
| Actual Behaviour | User have to place a order for a product & tracking number is shared. |
| Comments | Test was successful |
| Results pass/Fail | Pass |

1. **DB Design**

Database design has 2 approaches:

* Top to bottom approach
* Bottom to top approach

All tables + entities = DB Schema

DB Schema + ER Diagram = DB Design

Online Agriculture Store

Login

**ER Diagram – Entities Relationship**

**DB Schema – with tables & entities:**

\* Varchar is used when the data to be dealt with is a set of characters on which numerical operations cannot be performed directly whereas **int** is used when certain numerical are to be performed on it.

\* Varchar includes numbers, alphabets as well as special characters whereas int only include numbers.

\* For example, varchar: email, int: user\_id.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Farmer | |  | Products | |  | Manufacturer | |
| Email | Varchar |  | Name | Varchar | Include | Email | Varchar |
| Password | Varchar |  | Description | Varchar |  | Password | Varchar |
| Address | Varchar |  | Price | Decimal |  | Manufacturer ID | Int |
| Farmer ID | Int |  | Manufacturer ID | Int |  |  |  |
|  |  |  | Product ID | Int |  |  |  |

Include

Include

Include

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Wishlist | |  | Orders | |
| Product ID | Int |  | Order ID | Int |
| Farmer ID | Int |  | Product ID | Int |
| Wishlist ID | Int |  | Farmer ID | Int |
|  |  |  | Quantity | Int |
|  |  |  | Order Date | Date |
|  |  |  | Order value | Int |

1. **Data flow diagram**

A data flow diagram (DFD) is a graphical representation of the flow of data through an information system. It visualizes the processes, data stores, and external entities that interact to produce or consume data. The data flow diagram also provides Information about the outputs and inputs of each entity and the process itself. A dataflow diagram has no control flow, there are no decision rules and no loops.

It uses defined symbols like rectangles, circles, and arrows plus short test labels to show data inputs, outputs, storage points and the routes between each destination.

* External entity – Rectangle
* Data flow – arrow
* Process or bubble – circle (process)
* Data store –Parallel lines (Backend)

A diagram of a product

Description automatically generated

1. **Change Request**

A change request is a formal proposal to modify a project's scope, timeline, requirements, or deliverables due to new circumstances, constraints, or opportunities that arise during development.

Change requests are when a stakeholder, either a client or an internal team or department, requests a change to the processes or deliverables that have already been decided upon in the project scope.

However, in this scenario, this change request has come up due to change in the Govt. Taxation structure. As a BA, I would analyse the request and clarify the stakeholders exactly what the request is asking us to do in the Online Agriculture Product Store. In a normal scenario, as a BA, I would first do the Feasibility Test, to check how feasible it is to change the current ongoing project with the new change request. However, in this case, Feasibility study is not required, as it’s a Govt structure which needs to be updated and followed.

1. Identify the scope of the change request and assess its impact on the project.
2. Analyze the cost and time required to implement the change request.
3. Evaluate the benefits of the change request and its alignment with project goals.
4. Prioritize the change request based on its urgency and importance.
5. Communicate the change request to all relevant stakeholders, including the client, project manager, development team, and business analyst.
6. Update the project plan and documentation to reflect the change request.
7. Implement the change request and monitor its impact on the project.
8. Conduct testing and quality assurance to ensure the change request has been successfully implemented.
9. Obtain approval from the client or other relevant stakeholders before finalizing the change request.
10. Communicate the status and impact of the change request to all stakeholders, including any updates to the project plan, timeline, or budget.
11. **Change Request Vs an Enhancement**

A change request is a formal proposal submitted during a project to modify the scope, requirements, timeline, or deliverables. It arises due to unforeseen circumstances like regulatory changes, technical challenges, or new stakeholder demands. Change requests may affect project costs and timelines and require stakeholder approval before implementation.

An enhancement refers to planned improvements to an existing system, product, or process. These involve adding new features, optimizing performance, or refining functionality to better meet user needs or industry standards. Enhancements are usually proactive and aimed at improving value or usability, rather than addressing issues or external changes.

In this project, it sounds like an enhancement request as it involves adding new features to the existing project. As a BA, I would first gather more information from Ben and Kevin about the specific requirements for adding crop yields and implementing an auction system. I would then assess the impact of these changes on the project timeline, budget, and other existing requirements. If the changes are feasible and align with the project goals, I will document the new requirements and update the project plan and relevant stakeholders accordingly.

1. **Estimations**

As per the given case study-

The duration of the project is 18 months

The current team size is around 15

This will come under medium project. As the trained resources are available, trainers are not required. Hence the required man hours will be 15 x 72(no of weeks) x 30(hrs worked per week) = 21,600 hrs/-

1. **UAT**

UAT (User Acceptance Testing) is the final stage of the software development lifecycle where the end-users of the system test the product to ensure that it meets their requirements and is ready for deployment.

User Acceptance Testing (UAT) is a phase in the software development life cycle where the users of the Online Agriculture Product Store participate in validating that if meets their needs. As a BA, I will verify all the validations prior to design the UAT Test cases, which will cover the functionality of the product, system environment, any possible defects which could arise and how to deal with these defects.

The UAT Acceptance process involves the following steps:

1. Planning - The business analyst works with the client to plan the UAT phase, including defining the scope, identifying the test scenarios and cases, and setting the acceptance criteria.
2. Test Execution - The end-users perform the testing on the software product in a real-world environment and provide feedback on its usability, functionality, and performance.
3. Issue Resolution - If any issues are identified during the UAT phase, they are recorded and addressed by the development team.
4. Sign-off - Once the UAT is completed successfully, the end-users sign off on the product, indicating that it meets their requirements and is ready for deployment.

**To close the project, the following steps can be taken:**

1. Project Review - The business analyst conducts a project review to ensure that all the requirements have been met, and the project objectives have been achieved.
2. Documentation - All project documentation, including requirements documents, design documents, test cases, and project plans, are reviewed and updated.
3. Closure Meeting - A closure meeting is held with the stakeholders to discuss the success of the project, any lessons learned, and future recommendations.
4. Project Closure Report - The business analyst prepares a project closure report that includes the project review, documentation updates, closure meeting outcomes, and any final recommendations.
5. Archiving - The project documentation and artifacts are archived for future reference, and the project team is disbanded.
6. **Project Closure Document**

A project closure document is a document that summarizes the results of a project. It documents all phases of project management into one report. It includes the team’s accomplishments, lessons learned, and recommendations for improving upon future projects. A project closure document is created at the end of a project.

|  |  |  |  |
| --- | --- | --- | --- |
| **Srl No.** | **Point To Include** | **Details** | **Reference** |
| **1** | **Did the client sign of UAT** |  |  |
|  | Date of sign of: | 4/25/2024 | Business\_Scope.docx |
|  | Name of the resource: | Mr Henry |
| **2** | **Objective of the project** |  |  |
|  | User friendliness | Achieved |  |
|  | Customer satisfaction | ROI in 6 months |  |
|  | More sales | Achieved |  |
| **3** | **Functionalities worked on** |  |  |
|  | Secure payment processing | Achieved | FRD.docx |
|  | Categories | Achieved |
| **4** | **Infrastructure** |  |  |
|  | Software installed |  | Prourement.docx |
|  | Server setup |  |
| **5** | **Funding** |  |  |
|  | Amount Sanctioned | 2 Crore | FinancialDetails.xlsx |
|  | Amount Used | 2 Crore |
| **6** | **Overall project information** |  |  |
|  | Escalations | 12 |  |
|  | Customer satisfaction | High |  |
| **7** | **Value to the organization** |  |  |
|  | Positive/Negative | Company has successfully integrated the project increased turnover by 30% and increased efficiency by 20% |  |