**Nurturing Process - Capstone Project1 – Part -2/3 V2D2- August 2024**

**Question 1: 4 Quarterly Audits are planned Q1 , Q2, Q3, Q4 for this Project What is your knowledge on how these Audits will happen for a BA ?**

**Ans:**

|  |  |
| --- | --- |
| ***Quarter 1 Audit Report (Requirement Gathering Phase)*** | |
| **Stage** | **Requirement Gathering Phase** |
| **Completed** | 10 weeks (Week 1 to Week 10) |
| **Checklist** | - BRD Template |
|  | - Elicitation Results Report |
|  | - Duplicate Requirements Report |
|  | - Grouping of functionalities/features with client sign-off |
|  | - Email communication (To, CC, BCC) |

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| ***Quarter 2 Audit Report (Requirement Analysis Phase)*** | |
| **Stage** | **Requirement Analysis Phase** |
| **Completed** | 7 weeks (Week 16 to Week 23) |
| **Checklist** | - UML Diagrams |
|  | - Business-to-Functional Requirements Mapping |
|  | - Client Sign-Off Documents |
|  | - RTM Document Version Control |
|  | - Email Communication (To, CC, BCC) |

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| ***Quarter 3 Audit Report (Design Phase)*** | |
| **Stage** | **Design Phase** |
| **Completed** | 7 weeks (Week 30 to Week 37) |
| **Checklist** | - Utilization of Tools |
|  | - Documented Evidence on Client Communication |
|  | - Stakeholder MOM (Minutes of Meeting) |
|  | - Email Communication (To, CC, BCC) |
|  |  |

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| ***Quarter 4 Audit Report (Development Phase)*** | |
| **Stage** | **Development Phase** |
| **Completed** | 20 weeks (Week 40 to Week 60) |
| **Checklist** | - JAD Session Report |
|  | - End User Manual Preparation Document |
|  | - BA and Developer MOM |
|  | - Email Communication (To, CC, BCC) |
|  |  |

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| ***Quarter 5 Audit Report (Testing Phase)*** | |
| **Stage** | **Testing Phase** |
| **Completed** | 20 weeks (Week 58 to Week 78) |
| **Checklist** | - Test Case Summary |
|  | - Training Report to End Users |
|  | - Lessons Learnt Document |
|  | - Email Communication (To, CC, BCC) |
|  |  |

***Question 2: BA Approach Strategy***

**Answer:**

**BA Approach Strategy**

**1. Elicitation Techniques to Apply**

To ensure complete and accurate requirements, the following elicitation techniques will be applied:

1. **Brainstorming** – Collaborate with stakeholders to generate creative ideas and identify potential solutions.
2. **Document Analysis** – Review existing project documentation for relevant information.
3. **Interviews** – Conduct one-on-one discussions with key stakeholders for detailed inputs.
4. **Focus Groups** – Facilitate focused discussions with a small group of stakeholders to validate and refine requirements.
5. **Workshops** – Host interactive sessions to collectively finalize requirements.
6. **Observation** – Study stakeholders’ current workflows to understand their needs.
7. **Prototyping** – Develop mockups or wireframes to validate expectations.
8. **Reverse Engineering** – Analyze the existing system to understand legacy functionalities.

**2. Stakeholder Analysis (RACI)**

The RACI approach will be used to identify stakeholders and define their roles and responsibilities:

1. **Identify Stakeholders:** Categorize stakeholders (e.g., Project Manager, Developers, Admins, Testers).
2. **Define Roles and Responsibilities:** Define the roles as **Responsible**, **Accountable**, **Consulted**, or **Informed** (RACI).
3. **Create RACI Matrix:** Assign each stakeholder their respective RACI roles.
4. **ILS (Interest, Level, Support):** Evaluate stakeholder interest, their level in the organization, and support for the project.

**3. Documents to Write**

The following documents will be prepared during the project lifecycle:

* **BRD (Business Requirements Document):** Outlines business needs and objectives.
* **FRD (Functional Requirements Document):** Translates business requirements into technical specifications.
* **Use Case Documentation:** Details workflows and interactions within the system.
* **RTM (Requirements Traceability Matrix):** Tracks requirements through the project lifecycle.
* **Test Case Documents:** Defines scenarios for testing.
* **UAT (User Acceptance Testing) Checklist:** Ensures the final product meets business requirements.

**4. Process to Follow for Document Sign-Off**

1. Prepare draft versions of documents and share with stakeholders.
2. Host review meetings with stakeholders to discuss and finalize content.
3. Document changes, if any, during stakeholder reviews.
4. Obtain stakeholder approval via electronic or manual signatures.
5. Finalize the signed-off versions and archive them for project records.

**5. Approvals from the Client**

* Present the finalized BRD and FRD to the client for validation.
* Conduct review sessions to address client concerns or revisions.
* Document approvals through signed agreements or emails for audit purposes.

**6. Communication Channels to Establish and Implement**

* **Internal Team Communication:** Use project management tools like Jira, Slack, or Microsoft Teams.
* **Client Communication:** Schedule regular meetings via video conferencing tools (e.g., Zoom, MS Teams).
* **Email Updates:** Share weekly reports to stakeholders via formal emails.
* **Meeting MOMs:** Maintain and share Minutes of Meeting post every discussion.

**7. Handling Change Requests**

1. Document the requested change in a Change Request (CR) form.
2. Conduct an impact analysis to assess changes on scope, timeline, and budget.
3. Discuss the CR with the technical team and stakeholders.
4. Obtain client approval before implementing changes.
5. Update all impacted project artifacts and re-baseline the project plan if needed.

**8. Updating Progress to Stakeholders**

* Share **Weekly Status Reports**: Include milestones achieved, issues encountered, and resolutions.
* Conduct **Bi-weekly Review Meetings**: Discuss progress and next steps.
* Maintain a **Project Dashboard**: Use tools like MS Project or Jira for real-time tracking.

**9. UAT Sign-Off Process**

1. Prepare UAT Test Cases and share them with the client for approval.
2. Conduct UAT sessions where the client tests the system against agreed requirements.
3. Document feedback and resolve any issues raised during UAT.
4. Obtain final sign-off from the client via the **Client Project Acceptance Form**.

***Question 3: Explain and illustrate 3-tier architecture?***

**Answer:** **3-Tier Architecture: Explanation and Illustration**

3-Tier Architecture is a software development pattern that organizes an application into three logical layers. These layers are designed to separate responsibilities, improve scalability, maintainability, and reusability, and make the system easier to manage and update.

**Layers of 3-Tier Architecture**

**1. Presentation Layer (Client Layer)**

* **Purpose:** The user interface (UI) of the application, where the user interacts with the system.
* **Components:** Web browsers, mobile applications, or desktop applications.
* **Role:** Captures user input and displays the processed data.
* **Technology Examples:** HTML, CSS, JavaScript, React, Angular.

**2. Application Layer (Business Logic Layer)**

* **Purpose:** Contains the core functionality, business rules, and logic of the application.
* **Components:** APIs, middleware, and services that process requests and responses.
* **Role:** Handles communication between the presentation and data layers, processes user requests, and implements business rules.
* **Technology Examples:** Java, Python, Node.js, .NET.

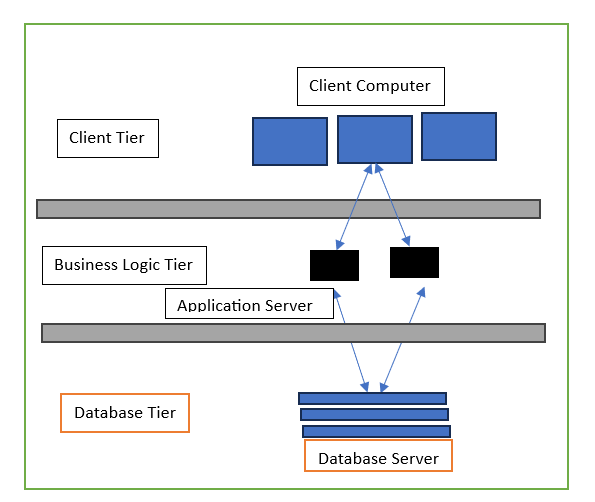
**3. Data Layer (Database Layer)**

* **Purpose:** Responsible for storing and retrieving data.
* **Components:** Databases, data storage systems, and data access APIs.
* **Role:** Manages application data, performs CRUD (Create, Read, Update, Delete) operations.
* **Technology Examples:** MySQL, PostgreSQL, MongoDB, Oracle DB.

**Benefits of 3-Tier Architecture**

1. **Scalability:** Each layer can be scaled independently.
2. **Maintainability:** Changes to one layer do not directly affect the others.
3. **Security:** Business logic and data are separated from the user interface.
4. **Reusability:** Components can be reused in different applications.
5. **Performance:** Reduces system complexity and enhances efficiency.

**3-Tier Architecture:**

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***Question 4 – BA Approach Strategy for Framing Questions***

**BA Approach Strategy for Framing Questions**

Based on the case study, where Mr. Henry plans to develop an online store to bridge gaps in agricultural procurement, the following framework is applied to design questions for stakeholders.

1. 5W 1H Framework

| Category | Question |
| --- | --- |
| Who | Who are the end users of the platform (e.g., farmers, manufacturers, distributors)? |
|  | Who will manage the application backend and data updates? |
| What | What are the must-have features for the platform (e.g., login, catalog search, payment)? |
|  | What kind of support is expected for first-time users (e.g., tutorials, customer support)? |
| When | When should the application go live (tentative launch date)? |
|  | When will user training sessions be conducted? |
| Where | Where should the application store user and order data (cloud/on-premise)? |
|  | Where are the majority of users located (to optimize delivery tracking)? |
| Why | Why are multiple payment options (COD, UPI, credit/debit) essential for user satisfaction? |
|  | Why is email confirmation preferred over SMS notifications for order status updates? |
| How | How should user authentication be implemented (email ID and password with security layers)? |
|  | How will manufacturers upload their product details, and what format is preferred? |

2. SMART Criteria for Question Framing

| SMART Criteria | Case Study Application |
| --- | --- |
| Specific | What catalogue categories are needed for fertilizers, seeds, and pesticides? |
| Measurable | What is the expected volume of concurrent users (farmers and manufacturers)? |
| Achievable | Are there any technical constraints for payment gateway integration? |
| Relevant | How does the proposed feature (e.g., delivery tracking) align with user needs? |
| Time-bound | What is the expected timeline for onboarding manufacturers to upload product details? |

3. RACI Framework

| Stakeholder Role | Responsibility |
| --- | --- |
| Responsible | Java Developers (Ms. Juhi, Mr. Teyson, Ms. Lucie) for coding functionalities like catalog and payments. |
| Accountable | Mr. Vandanam (Project Manager) ensures deliverables are completed on time. |
| Consulted | Peter, Kevin, and Ben provide detailed user requirements. |
| Informed | Mr. Henry and the committee track overall progress. |

4. Considerations for 3-Tier Architecture

| Layer | Questions |
| --- | --- |
| Presentation Layer | What user interface features are essential for mobile and web platforms? |
|  | How should search results (e.g., products) be displayed for ease of use? |
| Application Layer | What business rules (e.g., minimum order quantity) should be implemented? |
|  | How will API integrations with delivery services be managed? |
| Data Layer | What data fields should be mandatory for manufacturers when uploading products? |
|  | How frequently should the database be backed up? |

5. Use Cases and Activity Diagrams

Example Use Case:

Scenario: A farmer searches for products and places an order.

* Actors: Farmer, Manufacturer, System.
* Steps:
  1. Farmer logs into the system.
  2. Searches for fertilizers, seeds, or pesticides.
  3. Adds selected items to the cart.
  4. Proceeds to checkout and completes payment.
  5. Receives order confirmation and delivery tracking details.

Example Activity Diagram:

* Map the workflow for "Farmer Order Placement" showing:
  + Login → Search → Add to Cart → Payment → Order Confirmation.

***Question 5 – Elicitation Techniques***

***As a Business Analyst, What Elicitation Techniques you are aware of? ( BDRFOWJIPQU)***

**Ans:**

* **Brainstorming**: Gathering the ideas from stakeholders and filtering out the most valuable points. Conducting a brainstorming session with the project team to generate ideas for the project and how it reaches to end user.
* **Document Analysis**: Document analysis is done through reading a document and understanding a product or process.
* **Reverse engineering** is also called back engineering because it involves working backward through the original design process. The challenge is to gain a working knowledge of the original design by disassembling the product piece-by-piece or layer-by-layer because of limited knowledge about the engineering methods that went into creating the product.
* **Focus Group**: To Elicit ideas and attitudes about a specific product or service in an interactive group environment. Its kind of market research where less people involved.
* **Observations**: Observing how users interact with a website to identify area for improvement.
* **Workshop**: Conducting are requirement gathering workshop with project team and stakeholders to identify key requirements for a Application to develop.
* **JAD**: Joint Application Development is a methodology that involves the client or end user in the design and development of an application, through conducting workshops. Jad will helps to develop the application and smoother of the project to complete in time with no errors.
* **Interview**: Conducting interview with the stakeholders to understand their needs and preferences for the project.
* **Prototyping:** It is an attractive idea for complicated and large systems for which there is no manual process or existing system to help determining the requirements.
* **Questionnaire**: Questions should be based on high-priority risks. Questions should be direct and unambiguous. Questions should be targeted to the requirement gathering and risk factors of the project.
* **Use Case Specs**: Current state of difficulties, to reduce that difficulties. What to be prepared and how to be prepare the solution.

***Question 6 – This project Elicitation Techniques***

***Which Elicitation Techniques can be used in this Project and Justify your selection of Elicitation Techniques?***

Prototyping

Use case Specs

Document Analysis

Brainstorming

Fertilizers, seeds, pesticides details from the manufacturers and should be able to display them to the Farmers.

To gather the business requirements from the client, you went to SOONY and met Mr. Henry. When Mr. Henry was asked about the project and what are they expecting from the project, Mr. Henry stated that he is expecting to have a login for all its users (manufacturers and Farmers) , a product catalog of fertilizers, seeds, pesticides, a search option to search for products, payment process, and delivery tracking.

After doing the stakeholder analysis, you have found out that Peter, Kevin, Ben are the key stakeholders and you have scheduled an appointment to meet them. After meeting with them and trying to gather the stakeholder requirements, Kevin said that, a Farmer should be able to browse through the products catalog once they visit the website and need to have a search option so that they can search for any product they need. Peter said that, if a farmer wants to buy any product or add them to buy-later list, they need to login first using their email id and password. If it is a new user, then they can create a new account by submitting their email ID and creating a secure password. Ben added saying that, Farmers needs to have an easy-to-use payment gateway which should include cash-on-delivery (COD), Credit/Debit card and UPI options so that the user’s experience should be better. Kevin mentioned that, a user gets an email confirmation regarding their order status. A delivery tracker to track the where about of their order.

Identify Business Requirements (which includes Stakeholder Requirements)

BR001 – Farmers should be able to search for available products in fertilizers, seeds, pesticides

BR002 – Manufacturers should be able to upload and display their products in the application

**Ans:**

* I will use brainstorming tech to find the solution on the issues observed to complete this project, I will arrange the session with Stakeholder, SME, Software developer, Testing team and will select the better idea.

In brainstorming less people come together and give their best idea on the problems which will discuss, we can resolve the problems in the session.

Need to utilize the session, gather the information and gathering solutions.

We can get multiple solutions for the single problems with the discussion.

It is utilized in requirement elicitation to gather a good number of ideas from a group of people usually brainstorming is used in identifying all possible solutions to problems and simplifies the details of opportunities.

To buy the products, what all are the products should be designed in the application, which kinds of company should be displayed in the interface of the application. According to the season what are the products need to display.

To sell the products, according to the seasons which needs to be sold and based on the search history the product should be displayed.

Feedback and review to be planned in the portal. Marketing the products launch and advertisement of the products will be done

***Question 7 – 10 Business Requirements***

***Make suitable Assumptions and identify at least 10 Business Requirements***

**Ans:**  
 Based upon the Design, Security, Functionality, Integration, performance, Reporting, Scalability

* User Interface/Design

BR001 Application should have a user friendly interface

* Security

BR002 Application should be secured with encrypted data

* Functionality

BR003 Application should allow farmers and sellers to register

BR004 Application should allow farmers t place order for seeds, pesticides or fertilizers

BR005 Application should allow farmers to make payment online

BR006 Application should allow farmers to track their orders

* Integration

BR007 Application should get integrated with payment gateway

* Performance

BR008 Application should be fast with minimal data usage

* Reporting

BR009 Application should be able to generate sales report for stakeholders

* Scalability

BR009 Application should be able to handle large number of user registration and orders

***Question 8 –Assumptions  
 List your assumptions***

**Ans:**

* The project is a web-based application accessible through desktop and mobile devices.
* The product catalog will contain only details of fertilizers, seeds, and pesticides.
* The application will not store any financial information of the users.
* The delivery of the products will be outsourced to a third-party logistics company.
* The application will not have any social media integration.

***Question 9 – This project Requirements Priority***

**Ans:**

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement ID | Requirement Category | Description | Priority |
| BR001 | User Interface | Application should have a user friendly interface | 10 |
| BR002 | Security | Application should be secured with encrypted data | 9 |
| BR003 | Functionality | Application should allow farmers and sellers to register | 8 |
| BR004 | Functionality | Application should allow farmers t place order for seeds, pesticides or fertilizers | 7 |
| BR005 | Functionality | Application should allow farmers to make payment online | 6 |
| BR006 | Functionality | Application should allow farmers to track their orders | 5 |
| BR007 | Integration | Application should get integrated with payment gateway | 4 |
| BR008 | Performance | Application should be fast with minimal data usage | 3 |
| BR009 | Reporting | Application should be able to generate sales report for stakeholders | 2 |
| BR010 | Scalability | Application should be able to handle large number of user registration and orders | 1 |

***Question 10 – Use Case Diagram***

**Ans:**



**Question 11 – (minimum 5) Use Case Specs**

**Ans:**

This use case describes how this website will help farmers to buy fertilizer& another item online.

**Actors**

Farmers (Buyers)

Seller (Manufacturer)

Delivery Agencies

**Pre conditions**

Internet Connection

Smartphone/Laptop/Desktop

Mobile number/Email ID

Pin code for Delivery

**Use Case Specs Basic Flow**

1. The use case begins when the farmers start searching for fertilizers, pesticides, and seeds online on the portal.
2. Then the site will display the product as per the search along with all product details like price, quantity & others.
3. The site will prompt action to enter the pin code to check the availability of the product & expected delivery date.
4. If the entered pin code is not serviceable then it will inform that this product cannot be delivered to this location
5. Then farmers will have the option of adding to the cart for the selected prod & quantity they want to purchase at the selected pin code.
6. After adding to the cart, it will ask for the full address to enter and proceed to complete the order.
7. Before completing the order and moving to the payment page it will ask the user to log in with a valid mobile number with OPT.
8. Selecting the complete order button will take the user to the payment page displaying the final amount to pay on the screen.
9. Payment page will show different payment modes available like COD, Debit /credit card, UPI, Net Banking and ask the user to enter correct payment details like pin, CVV, card number,
10. Once the payment is done, it will generate a pop-up message whether the payment is successful or not if successful then the real-time order id will be generated, and if the payment is not successful then it will move back to the payment completion page showing the payment not received try again.
11. Once an order is placed successfully then it will ask the user to go to the ordertab to check the dispatch status and at the same time, it will send an order confirmation or failure mgs on the mobile no. entered at the time of login.
12. After the dispatch of the product on the order page it will show shipment tracking details with a link to track the same.
13. The farmers receive the placed product.
14. The use case ends successfully.

**Post Conditions**

1. Then the user can download the invoice from that page in PDF, PNG, JPG file.
2. After the delivery of the product users will have the option of replacement or return of the product if the product delivered does not match the quality as per the description on the website.
3. User can contact the customer help desk to place a return or replacement.
4. And it will ask for confirmation regarding the return or replacement.
5. If a return is selected, then the payment made will be returned to the source but if payment was done with COD then the user will have to enter valid bank details to receive a refund.
6. If replacement is selected, then the new product will be delivered & will be exchanged with the old one.

**Basic Flow:**

1. Farmer logs into the platform.
2. Navigates to the "Fertilizers" category and browses through available products.
3. Selects the required fertilizer and quantity.
4. Adds items to the cart and proceeds to checkout.
5. Enters shipping details and selects a payment method.
6. Confirms the order and receives a confirmation email/SMS with the order details.

**Alternate Flow:**

1. **Payment Issues:**
   * If the payment fails, the system displays an error message and redirects the user to retry or select a different payment method.
2. **Out of Stock:**
   * If the selected item is out of stock, the system suggests alternative products.
3. **Forgot Login Credentials:**
   * If the farmer cannot log in, they can reset their password or contact support.

**Exceptional Flow:**

1. Server is down or website crashes → Display a "Service Unavailable" message and provide a retry option.
2. Incorrect or incomplete shipping details → Prompt the user to re-enter details before proceeding.
3. Internet interruption during payment → Notify the user to verify payment status.

**Assumptions:**

* Farmers are familiar with basic online shopping workflows.
* Farmers have access to a smartphone or computer with internet connectivity.

**Constraints:**

* Payment gateway must support rural-friendly options like UPI and Cash on Delivery.
* The platform must support regional languages for better accessibility.

**Dependencies:**

* Database must update product availability in real-time.
* Integrated delivery tracking system should be active.
* Payment gateway must be operational to complete transactions.

**Input-Outputs:**

* **Inputs:** User login details, selected fertilizer, quantity, shipping address, payment method.
* **Outputs:** Order confirmation number, payment receipt, delivery tracking details.

**Business Rules:**

1. Farmers can only purchase products available in their region (based on shipping address).
2. Minimum and maximum order quantities are defined for bulk purchases.
3. Orders must be prepaid unless COD is explicitly available.

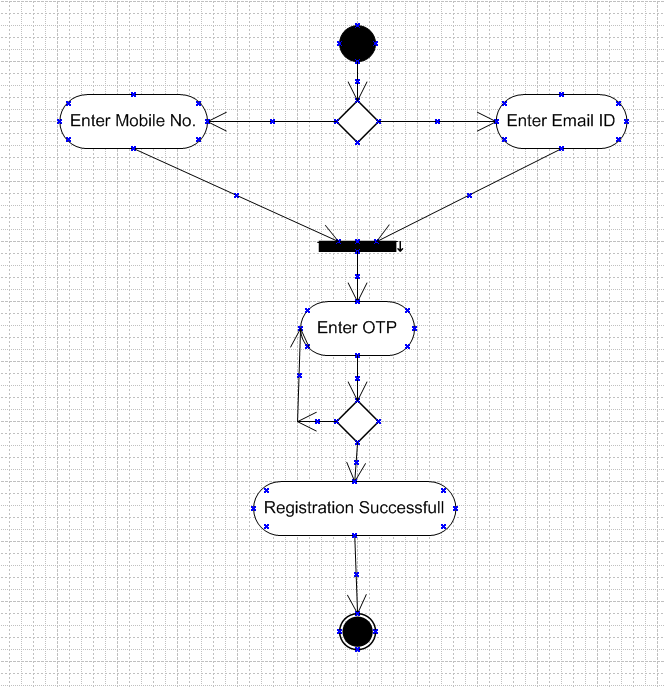
**Misinfo:**

* The platform does not guarantee delivery timelines due to unforeseen delays like weather or logistics issues.
* Farmers must verify their input details (address, payment) before order confirmation.

**Additional Notes:**

* The website is optimized for low bandwidth to support rural areas with limited internet speed.
* Customer support is available via phone and WhatsApp for any queries.
* Farmers can download an invoice for their purchase for subsidy claims or record-keeping.

**Question 12 – (minimum 5) Activity Diagrams  
  
New Registration Successful**

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Resend OTP

Wrong OTP

**Add to Cart**



**Payment**



**Delivery**



**Order Return**





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I am Tarang and I came across your job invite on Naukri. I am currently looking out for opportunity as a category manager. I have 6+ years of experience, I am sharing my CV for your reference.