**Question 1 – 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:**

**As a Business Analyst (BA), I will be involved in audits at different phases of the project. Here is how the audits will happen for me:**

 **Requirement Gathering Phase– (Week 1 - Week 15)**

* I will ensure that all requirements from farmers, manufacturers, and stakeholders are properly documented.
* Auditors will check whether the requirements are complete, clear, and aligned with business goals.
* The audit will verify if stakeholder meetings, surveys, and documentation are properly maintained.
* Any missing or unclear requirements will be flagged for correction.

 **Requirement Analysis Phase– (Week 16 - Week 29)**

* I will analyse and refine the requirements gathered.
* Auditors will review if the requirements are correctly categorized and validated with stakeholders.
* They will check if any conflicts in requirements have been resolved.
* Traceability matrices and requirement documentation will be audited for completeness.

 **Design Phase– (Week 30 - Week 40)**

* I will work with the design team to ensure that UI/UX and system design align with requirements.
* Auditors will check whether functional and non-functional requirements are correctly implemented in design.
* They will verify whether the design documents are aligned with approved requirements.
* Any gaps between the requirements and design will be identified.

 **Development Phase-(Week 40 - Week 70)**

* I will assist in validating the developed features against requirements.
* Auditors will check if the application is being developed as per documented requirements.
* They will verify traceability between requirements and developed modules.
* Any deviations or missing functionalities will be flagged for correction.

Throughout these audits, my responsibility will be to ensure that all requirements are well-documented, analysed, and implemented correctly.

**Question 2 –Before the Project is going to Kick Start, The Committee asked Mr Karthik to submit BA Approach Strategy Write BA Approach strategy (As a business analyst, what are the steps that you would need to follow to complete a project – What Elicitation Techniques to apply, how to do Stakeholder Analysis RACI/ILS, What Documents to Write, What process to follow to Sign off on the Documents, How to take Approvals from the Client, What Communication Channels to establish n implement, How to Handle Change Requests, How to update the progress of the project to the Stakeholders, How to take signoff on the UAT- Client Project Acceptance Form ) Your Team Project Manager - Mr Vandanam Senior Java Developer - Ms. Juhi Java Developers - Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo Network Admin - Mr Mike DB Admin - Mr John.**

**Testers - Mr Jason and Ms Alekya BA - You Technical Team have assembled to discuss on the Project approach and have finalised to follow 3-tier architecture for this project.**

**Ans:**

The Business Analyst follows a structured approach to ensure that the project is completed successfully. The key steps include:

**1. Requirement Elicitation**

* **Techniques Used:** Interviews, brainstorming, document analysis, prototyping.
* **Why Needed?** Helps in gathering requirements from farmers, manufacturers, and stakeholders.

**2. Stakeholder Analysis**

* **Technique Used:** RACI Matrix (Responsible, Accountable, Consulted, Informed)
* **Why Needed?** Helps identify key people responsible for decisions.

**3. Documentation**

* **Documents Created:** BRD (Business Requirement Document), SRS (Software Requirement Specification), Use Cases.
* **Why Needed?** These documents act as a reference for developers and testers.

**4. Approval Process**

* **Process:** Review the documents with stakeholders and get their sign-off.
* **Why Needed?** Ensures alignment between stakeholders and the development team.

**5. Communication Channels**

* **Tools Used:** Emails, meetings, reporting tools.
* **Why Needed?** Keeps all stakeholders informed about project progress.

**6. Change Request Handling**

* **Process:** Change Request (CR) process to manage modifications.
* **Why Needed?** Helps track and manage requirement changes.

**7. Project Progress Updates**

* **Process:** Regular reporting and meetings.
* **Why Needed?** Ensures that stakeholders are aware of the project status.

**8. UAT & Client Signoff**

* **Process:** Validate requirements, perform testing, and obtain final approval from the client.
* **Why Needed?** Ensures the final product meets business needs.

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

**Ans:**

A **3-Tier Architecture** is used to structure the project in a scalable and secure way. It consists of:

1. **Client Layer (UI):** The front-end where farmers and manufacturers interact with the system (Web/Mobile App).
2. **Business Logic Layer (BLL):** The backend that processes user requests (Java Backend API).
3. **Data Layer (DAL):** The database that stores product and order information (SQL Server).

**Why is 3-Tier Architecture Needed?**

* **Scalability:** Each layer can be modified independently.
* **Security:** Data is processed separately, reducing risk.
* **Performance:** Efficient processing of user requests.

**Question 4 – Business Analyst should keep What points in his/her mind before he frames a Question to ask to the Stakeholder (5W 1H – SMART – RACI – 3 Tier Architecture – Use Cases, Use case Specs, Activity Diagrams, Models, Page designs).**

**Ans:**

Before asking stakeholders questions, a BA should consider:

* **Requirements Gathering (5W 1H)**
1. What are the key features and functionalities you expect in the online agriculture product store?
2. Why do you think this platform is necessary, and how will it benefit farmers and manufacturers?
3. Who will be the end users of this application (Farmers, Manufacturers, Delivery Partners, etc.)?
4. When should this application be ready for launch to start serving farmers?
5. Where will this application be used (Is it nationwide or for a specific region)?
6. How will farmers place orders, track them, and receive deliveries?
* **SMART Goals (Specific, Measurable, Achievable, Relevant, Time-bound0)**
1. What is the expected number of farmers and manufacturers who will use this application in the first year? (Measurable)
2. What are the specific challenges farmers face when buying products online, and how can this platform address them? (Relevant)
3. What is the timeline for different phases of development, testing, and deployment? (Time-bound)
4. What is the budget allocation for various project components like development, testing, and marketing? (Achievable)

**RACI Matrix (Roles & Responsibilities)**

1. Who will be responsible for approving the final product catalogue and pricing?
2. What will be the role of Peter, Kevin, and Ben in the requirement-gathering process?
3. Who will handle customer support and resolve issues faced by farmers?
4. Who will be accountable for data security and transaction safety?

**3-Tier Architecture (Presentation, Business Logic, Data Layer)**

1. How should the user interface (UI) be designed to make it simple for farmers to browse products and place orders?
2. What business rules should be implemented to prevent fraudulent transactions?
3. How should the database be structured to store product details, farmer orders, and transaction history securely?
4. Will the application have offline functionality for farmers in areas with weak internet connectivity?

**Use Cases & User Flow**

1. What are the main actions that a farmer should be able to perform in the app? (e.g., search products, compare prices, place orders)
2. How will manufacturers upload and update their product details in the system?
3. Will there be a cart & checkout system, or will orders be placed directly?
4. How will delivery tracking be managed, and will farmers receive real-time updates?

**Activity Diagrams, Models, and Page Design**

1. Can you provide a sample workflow of how a farmer orders products from selecting to receiving the delivery?
2. What key information should be displayed on the home page, product listing page, and order confirmation page?
3. Will the application support multiple languages for better usability by farmers?
4. What kind of reports & analytics should be available for manufacturers and the SOONY company to track sales and performance?

**Question 5 – As a Business Analyst, What Elicitation Techniques you are aware of? (BDRFOWJIPQU)**

**Ans:**

As a Business Analyst, elicitation techniques are used to gather information from stakeholders to understand their business needs, requirements, and expectations. These techniques help in collecting the right information to create solutions that meet business goals.

Here are some commonly used elicitation techniques in simple language:

**1. Brainstorming (B)**

It is a group activity where different stakeholders share their ideas, opinions, and solutions about a specific topic. This technique helps to generate many ideas quickly.
 Useful when you need new ideas or solutions.

**2. Document Analysis (D)**

It involves studying existing documents like business reports, process manuals, or system designs to gather information about the current system or process.
\* Helpful when you need to understand the existing system or project history.

**3. Research (R)**

It involves gathering information from external sources like websites, articles, or industry reports to understand market trends or competitor solutions.
\* Useful for understanding market standards and improving business solutions.

**4. Focus Groups (F)**

A group of selected people (usually end-users or stakeholders) discuss their needs, expectations, and feedback about a product or service.
\* Helpful for understanding customer preferences and expectations.

**5. Observation (O)**

The Business Analyst observes how users perform their daily tasks in their working environment to understand the current process.
\* Useful when users cannot explain their tasks in detail but can show how they work.

**6. Workshops (W)**

It is a group meeting where stakeholders and Business Analysts discuss requirements, challenges, and possible solutions.
 \*Best when multiple stakeholders are involved, and quick decisions are needed.

**7. Interviews (I)**

A one-on-one conversation between the Business Analyst and the stakeholder to gather information directly.
\* Useful for understanding detailed requirements or personal opinions.

**8. Prototyping (P)**

It involves creating a basic version of the product or system to help stakeholders understand how the final product will look and work.
\* Helpful to get early feedback and improve the system design.

**9. Questionnaires/Surveys (Q)**

A set of predefined questions is shared with stakeholders to gather information from many people quickly.
\* Useful for collecting feedback from multiple stakeholders at once.

**10. User Stories (U)**

It is a short, simple description of a feature or requirement written from the user's point of view.
\* Helps to understand what users want and why they need it.

**11. Joint Application Development (JAD) Sessions (J)**

A structured meeting where Business Analysts, Developers, and Stakeholders collaborate to finalize requirements.
\* Useful for gathering detailed requirements and making quick decisions.

**12. Interface Analysis (I)**

It involves studying how different systems or applications interact with each other to gather technical requirements.
\* Helps to understand data flow between systems.

**13. Peer Review (P)**

It is the process of reviewing requirements documents or other deliverables with team members to identify errors or missing information.
 \*Helps to improve the quality of requirements.

**Question 6 – 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 (fertilizers, seeds, pesticides manufacturers and Farmers), a product catalogue 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 catalogue 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 whereabouts 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:**

**To gather requirements for the online agriculture product store, the following elicitation techniques are as follows.**

**1. Prototyping**

* A simple model (prototype) of the application can be created to show how the website or mobile app will function.
* Farmers and manufacturers can give feedback on the design and features.
* Helps in understanding user expectations and making improvements before development starts.

**2. Use Case Specification**

* Use cases describe how users (farmers and manufacturers) will interact with the application.
* Helps in identifying different user actions, such as searching for products, placing orders, and making payments.
* Makes it easier for developers to understand what needs to be built.

**3. Document Analysis**

* Reviewing existing documents, such as farming product catalogs and company policies, to understand the requirements.
* Helps in identifying important details about fertilizers, seeds, and pesticides that need to be displayed on the platform.

**4. Brainstorming**

* A discussion session with stakeholders (Mr. Henry, Peter, Kevin, Ben, and the development team) to gather ideas and potential solutions.
* Helps in identifying challenges faced by farmers and manufacturers and how the application can solve them.

**By using these techniques, the project team can effectively gather and refine the business requirements to ensure a smooth development process.**

**Question 7 – Make suitable Assumptions and identify at least 10 Business Requirements.**

**Ans:**

**Business Requirements for the Online Agriculture Product Store**

1. User-Friendly Application – The application should have a simple and easy-to-use interface for farmers, even those with minimal technical knowledge.
2. Product Listing – The platform should allow manufacturers to list their products (fertilizers, seeds, pesticides) with clear descriptions, prices, and availability.
3. Search & Filter Options – Farmers should be able to search and filter products based on categories, prices, brand names, and other relevant factors.
4. Ordering & Purchase System – Farmers should be able to add products to a cart, place orders, and make payments online.
5. Delivery Management – The system should allow farmers to enter their delivery addresses and track their orders until they are delivered.
6. Communication System – There should be a feature for direct communication between farmers and manufacturers for inquiries and support.
7. Payment Integration – The platform should support multiple payment options like UPI, credit/debit cards, and cash on delivery.
8. Multi-Language Support – The application should support multiple languages to help farmers who are not fluent in English.
9. Customer Support & Help Desk – A support system should be available for farmers and manufacturers to resolve issues related to orders, payments, or technical problems.
10. Reports & Analytics – The system should generate reports on sales, customer feedback, and product demand to help improve services and supply chain management.

**Question 8 – Marks List your assumptions.**

**Ans:**

1. Internet Connectivity – Farmers in remote areas have access to the internet to use the online platform.

2. Delivery System – A delivery system will be in place to ensure products reach farmers on time.

3. User Training – Since many farmers may not be familiar with online platforms, basic training or support will be provided.

4. Payment Options – The application will support multiple payment methods like online banking, UPI, and cash on delivery.

5. Regulatory Compliance – The platform will follow government rules and regulations for selling agricultural products.

**Question 9 – Give Priority 1 to 10 numbers ( 1 being low priority – 10 being high priority) to these Requirements after discussions with the stakeholders Req ID Req Name Req Description Priority BR001 Farmer Search for Products Farmers should be able to search for available products in fertilizers, seeds, pesticides 8 BR002 Manufacturers upload their Products Manufacturers should be able to upload and display their products in the application 8 Once the requirements are finalized, as a business analyst, one of the major roles is to act as a liaison between the client and the project team. To gather the requirements correctly from the client side and then to deliver those requirements to the project team in a way they understand.**

**To make the project team understand the requirements, you need to convert those requirements into UML diagrams and screen mock-ups.**

**Ans:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Requirement ID** | **Requirement Name** | **Requirement Description** | **Priority** |
| BR001 | Farmer Search for Products | Farmers should be able to search for available products in fertilizers, seeds, pesticides. | 8 |
| BR002 | Manufacturers Upload Products | Manufacturers should be able to upload and display their products in the application. | 8 |
| BR003 | Product Purchase & Checkout | Farmers should be able to select and buy products with an easy checkout process. | 10 |
| BR004 | Delivery Tracking | Farmers should be able to track the delivery status of their purchased products. | 7 |
| BR005 | Secure Payment System | The system should provide a secure online payment method for transactions. | 9 |
| BR006 | User Registration & Login | Farmers and manufacturers should have their own accounts for managing activities. | 9 |
| BR007 | Customer Support | Farmers should be able to contact support for any issues or questions. | 6 |
| BR008 | Reviews & Ratings | Farmers should be able to review and rate the products they purchase. | 5 |
| BR009 | Multilingual Support | The application should support multiple languages to help farmers from different regions. | 4 |
| BR010 | Data Analytics for Admin | The system should provide reports and analytics for better decision-making. | 3 |

* High Priority (9-10): Critical functions such as product purchase, secure payment, and user registration are essential for the system's operation.
* Medium Priority (6-8): Important but can be developed after the core functions, like searching products, uploading products, and delivery tracking.
* Low Priority (3-5): Additional features like reviews, multilingual support, and analytics can be added later for better user experience.

**Question 10- Draw use case diagram.**

**Ans: Use Case Diagram for Online Agricultural Product Store.**





**Question 11: Prepare use case specs for all use cases.**

**Ans:**

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| **Use Case 1: Product Listing by Manufacturer****Use Case ID:** UC001**Use Case Name:** Product Listing by Manufacturer**Created By:** Roshan Thakur**Date Created:** 27/02/2025**Actor:** Manufacturer**Precondition:** Manufacturer should be a registered user and logged into the system.**Post Condition:** Product details are listed and visible to farmers.**Basic Flow:**1. Manufacturer logs into the system.
2. Manufacturer navigates to "Add Product" section.
3. Manufacturer enters product details (Name, Type, Price, Quantity, Description).
4. Manufacturer uploads product images.
5. Manufacturer submits product for approval.
6. System validates product details.
7. System lists the product under the appropriate category.

**Alternative Flow:*** If product details are incomplete, the system prompts the manufacturer to fill in the missing information.
* If image upload fails, the system asks the manufacturer to re-upload.

**Frequency of Use:** Daily**Assumption:** Manufacturer has stable internet connectivity. |

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| **Use Case 2: Farmer Browsing Products****Use Case ID:** UC002**Use Case Name:** Farmer Browsing Products**Created By:** Roshan Thakur**Date Created:** 27/02/2025**Actor:** Farmer**Precondition:** Farmer must be registered and logged into the system.**Post Condition:** Farmer views the product details and decides whether to purchase.**Basic Flow:**1. Farmer logs into the system.
2. Farmer navigates to "Browse Products" section.
3. System displays product categories.
4. Farmer selects a category.
5. System displays products under the selected category.
6. Farmer views product details.

**Alternative Flow:*** If no products are available in the selected category, the system displays a message.

**Frequency of Use:** Daily**Assumption:** Farmer has basic knowledge of using the application. |

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| **Use Case 3: Product Purchase by Farmer****Use Case ID:** UC003**Use Case Name:** Product Purchase by Farmer**Created By:** Roshan Thakur**Date Created:** 27/02/2025**Actor:** Farmer**Precondition:** Farmer must be logged in and have sufficient balance/payment method.**Post Condition:** Purchase request is submitted successfully.**Basic Flow:**1. Farmer selects product.
2. Farmer adds product to cart.
3. Farmer proceeds to checkout.
4. Farmer enters delivery address.
5. Farmer selects payment method.
6. Farmer confirms the order.
7. System generates order confirmation.

**Alternative Flow:*** If payment fails, the system notifies the farmer and asks to retry.
* If stock is unavailable, the system notifies the farmer.

**Frequency of Use:** Weekly**Assumption:** Payment gateway is functional. |

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| **Use Case 4: Order Tracking by Farmer****Use Case ID:** UC004**Use Case Name:** Order Tracking by Farmer**Created By:** Roshan Thakur**Date Created:** 27/02/2025**Actor:** Farmer**Precondition:** Farmer must be logged in with a placed order.**Post Condition:** Farmer views order status.**Basic Flow:**1. Farmer logs into the system.
2. Farmer navigates to "My Orders" section.
3. System displays list of placed orders.
4. Farmer selects an order.
5. System displays order status.

**Alternative Flow:*** If no orders are found, the system displays a message.

**Frequency of Use:** Daily**Assumption:** System updates order status regularly. |

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| **Use Case 5: Product Delivery Confirmation****Use Case ID:** UC005**Use Case Name:** Product Delivery Confirmation**Created By:** Roshan Thakur**Date Created:** 27/02/2025**Actor:** Farmer**Precondition:** Product must be delivered to the farmer.**Post Condition:** Order marked as delivered and closed.**Basic Flow:**1. Farmer logs into the system.
2. Farmer navigates to "My Orders" section.
3. Farmer selects delivered order.
4. Farmer confirms delivery.
5. System marks order as delivered.

**Alternative Flow:*** If the product is not delivered, the farmer raises a dispute.

**Frequency of Use:** Weekly**Assumption:** Delivery partner updates the system with delivery status. |

**Question 12: Activity Diagram**

**Ans: Activity Diagram for Farmer Registration**



**Ans: Activity Diagram for Farmer Enter in Portal and Order the Products.**



**Ans: Activity Diagram for Order Placement and Confirm Order**

