**Capstone Project1 – Part -2/3**

**Question 1: Audits- 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?**

**Answer:** As a Business Analyst (BA) involved in a project with planned quarterly audits (Q1, Q2, Q3, Q4), my role in ensuring the audits is smooth and successful is multifaceted. Below is an outline of how these audits typically happen and the BA's role in each phase:

* Purpose of Audits –

Audits in a project are conducted to:

* Ensure compliance with project objectives, scope, timelines, and budget.
* Verify adherence to organizational processes, standards, and regulations.
* Assess the quality of deliverables and progress against milestones.
* Identify risks, issues, and areas of improvement.
* Types of Audits in the Context of this Project –
* Process Audit: Ensures that all processes (requirements gathering, documentation, communication, etc.) align with standards and best practices.
* Compliance Audit: Checks adherence to company policies, industry standards, and CSR requirements.
* Performance Audit: Evaluates project progress, delivery milestones, and stakeholder satisfaction.
* Financial Audit: Validates if the financial aspects of the project, such as budget utilization, are on track.
* **BA's Role in Each Quarterly Audit** –
* **Q1 - Initial Audit: Planning & Setup**
* Focus: Review initial project setup, requirements gathering, and alignment with business goals.
* BA's Contribution:
* Provide the finalized Business Requirements Document (BRD) and other requirement artifacts.
* Ensure traceability of requirements to project objectives.
* Validate that stakeholder inputs (e.g., from farmers and manufacturers) are documented and agreed upon.
* Showcase progress in building foundational elements (use ++++cases, user stories, process flows).
* **Q2 - Midway Audit: Progress Check**
* Focus: Monitor progress in development, risk mitigation, and compliance with timelines.
* BA's Contribution:
* Present updated artifacts like Functional Specification Documents (FSDs) and workflow diagrams.
* Verify alignment of development output with requirements.
* Highlight any changes in requirements or scope, supported by a Change Request Log.
* Showcase stakeholder feedback cycles and resolutions.
* **Q3 - Pre-Implementation Audit: Readiness Check**
* Focus: Assess deliverable quality and readiness for testing and deployment.
* BA's Contribution:
* Validate that requirements are fully implemented and accounted for in the system.
* Demonstrate progress on test cases prepared with testers (requirements traceability matrix).
* Provide records of user acceptance testing (UAT) plans and preparation for feedback collection.
* Ensure all stakeholder concerns are addressed.
* **Q4 - Final Audit: Post-Implementation Review**
* Focus: Evaluate final deliverables, project success, and lessons learned.
* BA's Contribution:
* Present evidence of successful delivery of requirements and stakeholder satisfaction.
* Provide reports on post-deployment feedback and issue resolution.
* Highlight measurable outcomes (e.g., farmer adoption rates, feedback from manufacturers).
* Assist in preparing the Project Closure Report with lessons **learned.**
* **General BA Responsibilities in Audits –**
* Documentation:
* Ensure all documentation (BRD, FSD, user stories, meeting minutes) is up-to-date and accessible.
* Provide detailed audit trails for requirement changes, approvals, and test results.
* Stakeholder Communication:
* Act as a liaison between stakeholders and auditors to clarify objectives and resolve discrepancies.
* Ensure stakeholder feedback is reflected in audit discussions.
* Risk Identification:
* Highlight risks identified during requirement gathering or development phases.
* Document and present mitigation strategies.
* Compliance Monitoring:
* Ensure the project adheres to regulatory and CSR guidelines.
* Verify that farmer needs are prioritized as per the CSR goals.
* Audit Support:
* Assist in preparing reports and responses to audit queries.
* Help resolve any gaps identified by auditors.

By actively contributing to each phase of the audits, a BA ensures the project's alignment with business goals, compliance requirements, and successful delivery.

**Question 2:** BA Approach Strategy- 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.

**Answer:** Business Analyst Approach Strategy for the Agriculture Product Store Project is as follows:

**1. Understanding the Project Objectives**

* **Objective:** To create an online agriculture product store that facilitates farmers in remote areas to purchase fertilizers, seeds, and pesticides. The platform will enable direct communication between farmers and manufacturing companies.
* **Key Stakeholders:** Mr. Henry, Mr. Pandu, Mr. Doku, Peter, Kevin, Ben, SUNY committee, and APT IT Solutions’ delivery team.

**2. Steps for Project Completion**

**2.1 Elicitation Techniques**

* **Workshops**: Conduct joint workshops with stakeholders (committee members and farmers) to gather detailed requirements.
* **Interviews**: Conduct one-on-one interviews with key stakeholders, including Peter, Kevin, Ben, and manufacturers.
* **Surveys/Questionnaires**: Distribute surveys to farmers to understand their preferences and technical challenges.
* **Observation**: Observe farmers’ day-to-day processes to identify pain points.
* **Document Analysis**: Review existing systems or similar platforms to identify best practices and gaps.

**2.2 Stakeholder Analysis**

Perform a RACI Analysis:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role/Task** | **Responsible** | **Accountable** | **Consulted** | **Informed** |
| Requirements Gathering | BA | Mr. Vandanam | Peter, Kevin, Ben | Committee |
| Budget Management | Mr. Pandu | Committee | BA, Mr. Vandanam | APT IT Team |
| Design & Development | Ms. Juhi & Developers | Mr. Vandanam | Farmers, Committee | Committee |
| Testing | Testers | Mr. Vandanam | Farmers, Committee | Committee |
| Deployment | Mr. Mike, Mr. John | Mr. Vandanam | BA, Committee | Farmers |

**2.3 Documents to Write**

* **Business Requirements Document (BRD)**: Captures all business objectives and requirements.
* **Functional Requirements Specification (FRS)**: Defines detailed functionalities of the platform.
* **Technical Specification Document (TSD)**: Outlines technical details, including the 3-tier architecture.
* **User Stories and Use Cases**: Describes user interactions with the system.
* **Requirements Traceability Matrix (RTM)**: Tracks all requirements throughout the project lifecycle.
* **Test Plan and Test Cases**: Created in collaboration with testers.

**2.4 Process for Document Sign-Off**

1. Share drafts with stakeholders for review.
2. Conduct review meetings to clarify doubts.
3. Incorporate feedback and finalize documents.
4. Obtain formal sign-off via email or digital signature.

**2.5 Approvals from the Client**

* Present milestone-based deliverables.
* Schedule periodic review meetings with Mr. Henry and the committee.
* Use collaborative tools (e.g., email or project management software) to document approvals.

**2.6 Communication Channels**

* **Meetings**: Weekly status meetings with the core team and bi-weekly meetings with the committee.
* **Email**: For formal communication and updates.
* **Project Management Tool**: Use tools like Jira or Trello for task tracking.
* **Instant Messaging**: Establish a group chat for quick updates.

**2.7 Handling Change Requests**

* Implement a **Change Control Process**:
  1. Document the change request.
  2. Analyse the impact on scope, timeline, and budget.
  3. Present the analysis to the committee.
  4. Obtain formal approval or rejection.
  5. Update the project plan if approved.

**2.8 Updating Progress to Stakeholders**

* **Weekly Status Reports**: Share progress, risks, and mitigations.
* **Milestone Reviews**: Present achievements at key project phases.
* **Dashboard**: Use a dashboard for real-time project tracking.

**2.9 UAT and Client Sign-Off**

1. Prepare a UAT Plan with test scenarios and expected results.
2. Train farmers and stakeholders on system usage.
3. Facilitate UAT sessions and collect feedback.
4. Resolve identified issues.
5. Obtain sign-off on the Client Project Acceptance Form.

**3. Implementation Plan**

**3.1 Technical Architecture**

* **3-Tier Architecture:**
  1. Presentation Layer: Web and mobile application interface.
  2. Application Layer: Handles business logic, developed in Java.
  3. Data Layer: Database management with secure storage.

**3.2 Testing Strategy**

* Conduct unit testing, integration testing, and system testing.
* Perform load testing and security testing.
* Involve farmers in beta testing for feedback.

**3.3 Training and Support**

* Develop user manuals and video tutorials.
* Provide helpline support for initial months post-deployment.

This BA approach ensures comprehensive requirement gathering, stakeholder involvement, and a streamlined process for approvals, communication, and delivery. The structured methodology aligns with the project’s objectives and ensures successful execution within the defined budget and timeline.

**Question 3 – 3-Tier Architecture**

**Answer:** The 3-tier architecture is a software architecture design pattern that divides an application into three logical and physical layers. This approach separates concerns, enhances scalability, simplifies maintenance, and improves application performance.

**Layers in a 3-tier Architecture**

* Presentation Layer (User Interface Layer)
* **Purpose**: This layer interacts directly with the user. It provides the graphical user interface (GUI) or command-line interface (CLI) for the user to interact with the application.
* **Responsibilities**:
* Display data to users.
* Collect input from users and send it to the business logic layer.
* **Example**: Web browsers, mobile applications, or desktop applications.
* Business Logic Layer (Application Layer)
* **Purpose**: This layer contains the application's core logic and rules. It processes user requests and determines how data should be managed and transferred between the layers.
* **Responsibilities**:
* Validate user inputs.
* Perform computations, enforce business rules, and execute workflows.
* Interact with the database layer to fetch or store data.
* **Example**: APIs, microservices, or application servers that process requests.
* Data Layer (Database Layer)
* **Purpose**: This layer manages the storage, retrieval, and manipulation of data. It interacts with the database to perform operations such as querying, updating, or deleting records.
* **Responsibilities**:
* Store data persistently.
* Ensure data integrity and security.
* Provide an interface for the application layer to access the data.
* **Example**: SQL or NoSQL databases, data warehouses.

**Illustration of 3-Tier Architecture**

Here is how the 3-tier architecture would function in the context of Mr. Henry's online agricultural product store:

* **Presentation Layer**:
* User interfaces like a web browser or mobile app.
* Farmers and manufacturers access the system to browse, upload, or purchase agricultural products.
* **Business Logic Layer**:
* Manages the logic for farmers to register, search for products, add items to their cart, and place orders.
* Handles manufacturer uploads and ensures data consistency.
* Executes payment processing and order tracking.
* **Data Layer**:
* Stores details of products, manufacturers, farmers, orders, and transactions.
* Ensures that the system can retrieve product details, order histories, and other essential data.

**Benefits of 3-Tier Architecture**

* **Scalability:** Each layer can be scaled independently.
* **Modularity:** Code is more organized, making it easier to maintain and update.
* **Security:** Sensitive data is stored in the data layer, isolated from direct user access.
* **Reusability:** The business logic layer can be reused across multiple interfaces (e.g., web and mobile apps).
* **Flexibility:** Changes in one layer do not significantly impact others.

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

Approach Strategy for Framing Question

**1. 5WI1 Framework**

**Who**: Who is involved or impacted? Who will be responsible for this task or decision?

**What**: What is the problem, solution, or task? What do we need to achieve, and what resources are required?

**When**: When does this need to happen? What is the timeline for each part of the task or project?

**Where**: Where will this happen? Are there specific locations or platforms involved?

**Why**: Why is this important? Why is it necessary to address this situation or complete this task?

**How**: How will we achieve this goal? What is the method or process to get there?

By using this framework, you can ensure you cover all angles of a situation, identifying all critical elements that affect a decision or task.

**2. SMART Technique**

The SMART Technique can help you create clear, focused, and actionable questions. The SMART criteria ensure that questions are well-structured:

**S (Specific):** The question should be clear and focused. Ask for precise details to avoid ambiguity.

Example: What specific features do you want in the online store for farmers?

**M (Measurable):** The question should involve metrics or ways to measure success.

Example: How will we measure the success of the product delivery system?

**A (Achievable):** The question should focus on what is realistic and attainable within the given constraints.

Example: What resources do we need to implement the online store within the next 6 months?

**R (Relevant):** Ensure the question aligns with the goals or objectives of the project or situation.

Example: How does this feature align with our goal to improve the experience for remote farmers?

**T (Time-Bound):** The question should have a clear timeline or deadline.

Example: By when do we need to finalize the product list for the online store?

3. **RACI Matrix**

RACI chars help define and clarify roles and responsibilities within a team by outlining who is responsible, accountable, consulted, and informed for each task,

**4. UML (Unified Modelling Language)**

UML, or Unified Modelling Language, is a standardized way of diagramming and modelling software systems to aid in design, development, and communication between team members.

**Question 5 – Elicitation Techniques**

**Answer:** As a Business Analyst, elicitation techniques are essential tools to gather requirements, understand stakeholder needs, and ensure project success. Below are some key elicitation techniques, represented by the mnemonic **BDRFOWJIPQU**:

* B - Brainstorming: A collaborative technique used to generate creative ideas and solutions from a group of stakeholders. It is effective in identifying requirements, risks, or innovative features for the project.
* D - Document Analysis: Reviewing existing documentation such as business processes, user manuals, or contracts to gather information about the current system and derive relevant requirements.
* R - Requirements Workshops: Structured meetings involving stakeholders to discuss and finalize requirements collaboratively. This technique promotes consensus and addresses conflicts early.
* F - Focus Groups: A group of selected individuals (e.g., farmers, manufacturers, or other stakeholders) provide feedback on their needs, challenges, and expectations. This is particularly useful for understanding user perspectives.
* O – Observation: Observing stakeholders in their natural work environment to understand their processes and challenges. For example, visiting farms to see how farmers use fertilizers, seeds, and pesticides.
* W - Wireframes/Prototyping: Creating visual models or mock-ups of the application to elicit feedback from stakeholders about the design and functionality of the system.
* J - Job Shadowing: Accompanying stakeholders during their daily activities to gain first-hand insights into their challenges and workflows. For example, observing how farmers currently procure agricultural products.
* I - Interviews: One-on-one or group discussions with stakeholders to gather detailed insights into their needs, challenges, and expectations. This is especially useful for direct communication with farmers and manufacturers.
* P - Process Mapping: Analysing and documenting current business processes to identify gaps, inefficiencies, and areas for improvement that the new system can address.
* Q - Questionnaires/Surveys: Distributing structured forms to a broader audience to gather input on requirements, preferences, or concerns. This is useful for collecting data from farmers and manufacturers in remote areas.
* U - Use Cases/Scenarios: Defining specific interactions between users and the system to understand functional requirements. For example, detailing how a farmer would browse products, place an order, and track delivery.

These techniques can be used independently or in combination, depending on the project's complexity and the stakeholders involved. As a Business Analyst, selecting the right elicitation technique for each scenario ensures a thorough understanding of requirements and aligns the solution with stakeholder needs.

**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**

**Answer:** Here are the suitable elicitation techniques for this project and the justification for their selection:

* **Prototyping**:
* Prototyping involves creating a mock-up or visual representation of the application to help stakeholders understand how the final system will look and work.
* It helps validate the requirements related to user interface (UI) and user experience (UX) for farmers and manufacturers.
* Since the application involves various features (login, product catalog, search, payment gateway, delivery tracker), a prototype can clarify the visual structure and functionality.
* Farmers and manufacturers, who may not be technically inclined, can better express their expectations through feedback on the prototype.
* **Use Case Specification:**
* Use cases describe the interactions between the users (farmers, manufacturers, admin) and the system to achieve specific goals (e.g., searching products, placing orders).
* This clearly outlines functional requirements by focusing on user actions and system responses.
* Use cases are ideal for capturing the details of workflows like login, product browsing, order placement, and payment processing.
* They help ensure all user interactions are mapped and can serve as a reference for developers and testers.
* **Document Analysis:**
* Document analysis involves reviewing existing materials such as reports, policies, or similar systems to gather relevant information.
* It helps understand industry best practices for agricultural product e-commerce platforms.
* It can identify regulatory and compliance requirements for the sale of fertilizers, seeds, and pesticides.
* Provides insight into common challenges and solutions in similar online platforms, ensuring the project aligns with user needs.
* **Brainstorming:**
* Brainstorming sessions involve stakeholders collaboratively generating ideas to address specific challenges or define features.
* It encourages input from diverse stakeholders, including farmers, manufacturers, and the project team, to identify innovative solutions.
* It is useful for discussing features like delivery tracking, payment gateways, and product catalog search options.
* Promotes collaborative ownership of the project, increasing the likelihood of meeting stakeholder expectations.
* **Approach to Requirements Gathering**
* Prototyping: Develop initial wireframes and mock-ups of the application and gather feedback.
* Use Case Specification: Define use cases for user registration, product search, payment processing, and delivery tracking.
* Document Analysis: Analyse existing agricultural e-commerce platforms for inspiration and compliance.
* Brainstorming: Conduct sessions with stakeholders to finalize feature details and address any additional challenges.

**Identified Business Requirements (stakeholder requirements):**

* BR001: Farmers should be able to search for available products in fertilizers, seeds, and pesticides.
* BR002: Manufacturers should be able to upload and display their products in the application.
* BR003: Farmers should be able to browse through the product catalog without logging in.
* BR004: Farmers should be able to create accounts and log in securely.
* BR005: A secure and user-friendly payment gateway should support multiple payment modes (COD, credit/debit cards, UPI).
* BR006: Farmers should receive email notifications regarding their order status.

BR007: A delivery tracker should provide real-time updates on order location.

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

**Answer:** Based on the provided scenario, here are 10 Business Requirements derived from the information shared and additional assumptions made:

* **Online Marketplace for Agricultural Products:** The platform must serve as an online marketplace where manufacturers of fertilizers, seeds, and pesticides can list their products, and farmers can browse and purchase them.
* **User Registration and Authentication:** The system must allow manufacturers and farmers to register and create accounts. Authentication mechanisms should ensure secure access to user accounts.
* **Product Management for Manufacturers:** Manufacturers must be able to upload details of their products, including name, type (fertilizer, seed, pesticide), quantity, price, and specifications.
* **Product Search and Filtering:** Farmers should be able to search for products by categories, price range, type (fertilizer, seed, pesticide), and availability.
* **Order Placement and Tracking:** Farmers must be able to place orders for products, make payments, and track the delivery status of their orders.
* **Payment Integration**: The platform must integrate secure payment gateways, supporting multiple payment modes like credit/debit cards, UPI, mobile wallets, and net banking.
* **Multi-Lingual Support:** Considering the target audience includes farmers from remote areas, the platform must support multiple languages for ease of use.
* **Delivery Logistics Integration:** The system must have an integrated delivery logistics module to ensure the products are shipped to farmers' locations efficiently.
* **Customer Support and Chat Assistance:** A customer support feature, including FAQs, live chat, and ticketing systems, must be available for both manufacturers and farmers.
* **Reports and Analytics:** The system must generate reports and analytics for manufacturers (sales trends, product performance) and the SUNY committee (overall impact of the platform).

**Assumptions:**

* Internet connectivity is reasonably accessible in target remote areas.
* Farmers may need assistance with using the platform, so user-friendly design is essential.
* The platform will comply with legal and regulatory requirements for agricultural product transactions.
* Initial launch will focus on fertilizers, seeds, and pesticides, with potential for expansion into other agricultural products.

**Question 8:** Assumptions: List your assumptions

**Answer:** Here are the assumptions for the project based on the provided scenario:

* **Internet Accessibility:** Farmers in remote areas have sufficient internet connectivity to access the online store application.
* **Device Availability:** Farmers have access to internet-enabled devices such as smartphones or computers to use the application.
* **Digital Literacy:** Farmers have basic digital literacy to navigate the application or can easily be guided to use it.
* **Product Catalog Completeness:** Manufacturers will provide comprehensive and accurate details for all their products, including fertilizers, seeds, and pesticides.
* **Logistics Support:** There are sufficient logistics and delivery mechanisms in place to transport agricultural products to remote areas in a timely manner.
* **Payment Gateway Integration:** The application will support multiple payment options (e.g., digital payments, bank transfers, cash-on-delivery) suitable for farmers in rural areas.
* **Compliance and Regulations:** The project complies with all local laws and regulations regarding the sale and transportation of agricultural products.
* **Maintenance and Support:** The application will have ongoing technical support for any issues faced by farmers or manufacturers.
* **Language Support:** The application will support multiple regional languages to cater to farmers across diverse locations.
* **Stakeholder Commitment:** All stakeholders (farmers, manufacturers, and the committee members) will actively participate in sharing feedback and requirements throughout the project lifecycle.
* **Training and Awareness:** Adequate training or help features (such as tutorials or a helpline) will be provided to guide farmers and manufacturers in using the application.
* **Security and Privacy:** The application will have robust security features to protect users' data, including payment and personal information.
* **Budget and Timeline:** The project will be completed within the allocated budget of 2 crores INR and the stipulated 18-month timeline.
* **Scalability:** The application will be designed to handle future scalability, such as an increase in users or product offerings.
* **Feedback Mechanism:** The application will include a feedback mechanism to continuously improve the system based on user inputs.
* **Availability of Resources:** The required talent and technical resources will be consistently available throughout the project duration.

These assumptions ensure clarity in project requirements and identify areas that need validation or additional considerations during planning and execution.

**Question 9:** This project Requirements Priority: Give Priority 1 to 10 numbers ( 1 being low priority – 10 being high priority) to these Requirements after discussions with the stakeholders

**Answer:** To address this project systematically, the requirements can be prioritized after discussion with stakeholders, ensuring the features critical to the business and technical success are identified. Below is the detailed priority list based on the requirements mentioned:

|  |  |  |  |
| --- | --- | --- | --- |
| **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 |
| BR003 | Product Details Display | Products should have detailed descriptions, including price, usage instructions, and availability. | 9 |
| BR004 | Ordering System | Farmers should be able to add products to a cart and place orders for delivery to their location. | 10 |
| BR005 | Secure Payment Gateway | The application should support secure online payment options for the farmers. | 9 |
| BR006 | User-Friendly Interface | The application should have an intuitive and simple interface for easy usage by farmers and manufacturers. | 10 |
| BR007 | Registration and Authentication | Farmers and manufacturers should have a registration and login system for accessing services. | 8 |
| BR008 | Notifications | Notify farmers and manufacturers about order status, new product availability, or other updates. | 7 |
| BR009 | Multilingual Support | The application should support multiple languages to cater to farmers in remote regions. | 6 |
| BR010 | Technical Support System | Provide a help desk or technical support feature for users in case of issues. | 5 |

**Approach for Requirement Gathering and Communication**

As a Business Analyst, translating these requirements into actionable formats for the project team involves:

* **Use Case Diagram**:
* Visualize how farmers, manufacturers, and the admin interact with the system.
* Identify core functionalities like product search, upload, ordering, and notifications.
* **Activity Diagram**:
* Detail workflows such as product search, order placement, and payment processes.
* Show the sequence of actions for key operations.
* **Screen Mock-ups**:
* Design intuitive mock-ups for core screens such as:
* Home page (product browsing and search).
* Registration/Login pages.
* Product upload and detailed view.
* Cart and checkout process.
* **Sequence Diagrams**:
* Map out interactions between users and the system for processes like ordering or uploading products.
* **Communication Plan**:
* Regular stakeholder meetings to refine requirements.
* Weekly updates to the project team through documentation and walkthroughs.

**Question 10:** Use Case Diagram: Draw use case diagram

**Answer:** The key components for use case diagram are:

**Actors**

* **Farmers:** Browse products, place orders, and track deliveries.
* **Manufacturers:** Add products (fertilizers, seeds, pesticides) and manage inventory.
* **Admin (SOONY Team):** Monitor the platform, manage disputes, and oversee operations.

**Use Cases**

* **Farmers:**
* Browse products.
* Place an order.
* Track order delivery.
* Provide feedback or ratings.
* **Manufacturers:**
* Add products.
* Update product details (price, availability).
* View order requests.
* **Admin:**
* Approve/reject manufacturer registrations.
* Monitor orders.
* Resolve disputes.
* Generate reports.



**Relationships**

* **Farmers** are linked to the use cases of browsing, ordering, and tracking products.
* **Manufacturers** are associated with product management and order handling.
* **Admin** oversees the entire workflow and ensures smooth platform operations.

**Question 11:** (minimum 5) Use Case Specs: Prepare use case specs for all use cases

**Answer: Use Case 1: Search Agricultural Products**

| **Use Case ID** | **UC001** |
| --- | --- |
| **Use Case Name** | **Search for Agricultural Products** |
| **Created By** | **BA ,myself** |
| **Last Updated By** | **BA ,myself** |
| **Date Created** | **January 27, 2025** |
| **Last Revision Date** | **January 27, 2025** |
| **Actor** | **Customer** |
| **Description** | **This use case describes how a customer searches for fertilizers, seeds, and pesticides in the application.** |
| **Pre-condition** | **The customer must be registered and logged into the application.** |
| **Post-condition** | **The customer successfully views the desired agricultural products.** |
| **Normal Flow of Events (Happy Path)** | **Step 1: The customer logs in. Step 2: The system look into the product catalog Step 3: The customer enters the wanted product name or category in the search bar. Step 4: The system displays products Step 5: The customer clicks on a product to view its details.** |
| **Alternative Flow** | **If no products match the query, the system displays a “No products found” message with suggestions.** |
| **Exceptions** | **If the system is unavailable, an error message is displayed: “Service currently unavailable.”** |
| **Frequency of Use** | **High** |

**Use Case 2: Add Products to Cart**

| **Use Case ID** | **UC002** |
| --- | --- |
| **Use Case Name** | **Add Agricultural Products to Cart** |
| **Created By** | **BA ,myself** |
| **Last Updated By** | **BA ,myself** |
| **Date Created** | **January 27, 2025** |
| **Last Revision Date** | **January 27, 2025** |
| **Actor** | **Customer** |
| **Description** | **This use case describes how a customer adds products to their cart for purchase.** |
| **Pre-condition** | **The customer must be logged in and viewing product details.** |
| **Post-condition** | **Products are successfully added to the cart.** |
| **Normal Flow of Events (Happy Path)** | **Step 1: The customer views the product details. Step 2: The customer clicks the Add to Cart button. Step 3: The system adds the product to the cart.** |
| **Alternative Flow** | **If the product is out of stock, the system displays an “Out of Stock” message.** |
| **Exceptions** | **If the system crashes, the cart data is retained for the customer’s next login session.** |
| **Frequency of Use** | **High** |

**Use Case 3: Place an Order**

| **Use Case ID** | **UC003** |
| --- | --- |
| **Use Case Name** | **Place an Order** |
| **Created By** | **BA ,myself** |
| **Last Updated By** | **BA ,myself** |
| **Date Created** | **January 27, 2025** |
| **Last Revision Date** | **January 27, 2025** |
| **Actor** | **Customer** |
| **Description** | **This use case describes how customers place orders for products in their cart.** |
| **Pre-condition** | **The customer must have products in their cart and must be logged in.** |
| **Post-condition** | **The order is successfully placed, and the customer receives a confirmation.** |
| **Normal Flow of Events (Happy Path)** | **Step 1: The customer navigates to their cart. Step 2: The customer reviews items and clicks Proceed to Checkout. Step 3: The system prompts the customer to confirm delivery details Step 4: The customer selects a payment method and confirms payment. Step 5: The system processes the payment and displays an order confirmation page.** |
| **Alternative Flow** | **If the payment fails, the customer is prompted to try a different payment method.** |
| **Exceptions** | **If the system encounters a processing error, the order remains in the cart for retry.** |
| **Frequency of Use** | **High** |

**Use Case 4: Update Product Inventory**

| **Use Case ID** | **UC004** |
| --- | --- |
| **Use Case Name** | **Update Product Inventory** |
| **Created By** | **BA ,myself** |
| **Last Updated By** | **BA ,myself** |
| **Date Created** | **January 27, 2025** |
| **Last Revision Date** | **January 27, 2025** |
| **Actor** | **Admin** |
| **Description** | **This use case describes how the admin updates product inventory details.** |
| **Pre-condition** | **The admin must be logged into the system.** |
| **Post-condition** | **Inventory updates are successfully saved and reflected in the system.** |
| **Normal Flow of Events (Happy Path)** | **Step 1: The admin logs in. Step 2: The admin navigates to the “Inventory Management” section. Step 3: The admin updates stock levels, prices, or availability. Step 4: The admin submits the changes. Step 5: The system confirms the updates.** |
| **Alternative Flow** | **If mandatory fields are left empty, the system prompts the admin to complete them.** |
| **Exceptions** | **If the internet is down, changes are saved locally and synced when the system reconnects.** |
| **Frequency of Use** | **Medium** |

**Use Case 5: Track Order Delivery**

| **Use Case ID** | **UC005** |
| --- | --- |
| **Use Case Name** | **Track Order Delivery** |
| **Created By** | **BA ,myself** |
| **Last Updated By** | **BA ,myself** |
| **Date Created** | **January 27, 2025** |
| **Last Revision Date** | **January 27, 2025** |
| **Actor** | **Customer, Delivery Personnel** |
| **Description** | **This use case describes how customers track the status of their orders.** |
| **Pre-condition** | **The customer must have placed an order and must be logged in.** |
| **Post-condition** | **The customer successfully views the current status of their order.** |
| **Normal Flow of Events (Happy Path)** | **Step 1: The customer logs in. Step 2: The customer navigates to the “Track Orders” section. Step 3: The system displays the list of orders with their current status Step 4: The customer selects an order to view detailed tracking information.** |
| **Alternative Flow** | **If the tracking data is unavailable, the system displays an appropriate message: “Tracking details currently unavailable.”** |
| **Exceptions** | **If the order is delayed, the system notifies the customer with an estimated delivery date.** |
| **Frequency of Use** | **High** |

**Question 12:** (minimum 5) Activity diagram: Draw activity diagram

**Answer:** An activity diagram is used to visualize the flow of control in a system or process, typically representing workflows, actions, and decisions that occur in a particular scenario. Here, we can create an activity diagram for the process where a farmer browses products (seeds, fertilizers, pesticides) through the online platform and places an order for them.

**Activity diagrams**









