**Nurturing Process - Capstone Project1 – Part -2/3**

**Question 1 – Audits - 5 Marks**

**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 :**

In this project, quarterly audits (Q1, Q2, Q3, Q4) will be conducted to ensure compliance, efficiency, and alignment with project goals. As a Business Analyst (BA), my role in these audits involves evaluating project progress, ensuring documentation accuracy, verifying requirements alignment, and assessing risk mitigation strategies. Below is a breakdown of how these audits typically take place:

Stage 1 : Quarter 1 audit report : Requirement gathering and analysis :

Completed : 17 weeks

Check list :

Ensuring that business requirements are clearly documented and aligned with stakeholder expectations.

Reviewing Business Requirement Document (BRD) and Functional Requirement Document (FRD).

Ensuring traceability of requirements using a Requirements Traceability Matrix (RTM).

Validating that all key stakeholders’ inputs are captured and approved.

UML Diagrams

Review of requirement-gathering sessions, stakeholder interviews, and workshops.

Identification of requirement changes and their impact on project scope.

Clint sign off documents

Email communications - To , CC, BCC

Stage 2 : Q2 Audit report – Design & Development Phase Audit

Completed - 27 weeks

Check list :

Utilization of tools

Documented evidence on clint communication

Stakeholder MOM (minutes of meetings)

email communications

Identify Potential logistics partners

Checking whether the designed solution aligns with documented requirements.

JAD session report

Ensuring that business logic is correctly implemented in the development phase

Reviewing change requests and their impact on project scope.

End user mannual preparation docs

Stage 3 : Q3 Audit – Testing & UAT Phase Audit :

Completed : 20 weeks

Check list :

Ensuring test cases and test scripts are aligned with the BRD and FRD.

Validating defect tracking reports and ensuring issues are addressed on time.

Confirming that business requirements are met without deviations.

Lession learnt document

Test case summary

Email communications

Stage 4 : Q4 Audit Report – Deployment & Post-Implementation Review

Completed : 10 weeks

Check list :

Ensuring all compliance and regulatory checks are completed.

Reviewing deployment strategies and risk assessment reports.

Conducting post-implementation feedback sessions with end-users.

Documenting lessons learned and areas for improvement for future projects.

so as a BA, I play a crucial role in these audits by ensuring that project deliverables align with business objectives. By actively participating in requirement validation, stakeholder discussions, and documentation reviews, I help maintain transparency and project success.

**Question 2 – BA Approach Strategy - 6 Marks**

**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 :**

**BA Approach strategy :**

The BA Approach Strategy outlines the structured methodology that will be followed to ensure the successful completion of the Online Agriculture Products Store project. This document details the Business Analyst’s (BA) role in requirement gathering, stakeholder management, documentation, approvals, communication, change management, and project progress tracking.

Business Analyst Approach Strategy

1. What Elicitation techniques to apply : we have many elicitation techniques to apply used to gather requirement . some of them are :

Brainstorming - to generate new ideas with development team and stackholders ,

Document analysis - to review existing business process and review legal and compliance documents like gov policies on seeds and pestisides ,

Reverse engg - It is the process used to extract requirement from existing system when documentation is incomplete or unavailable its process of analyzing existing system .

focus groups - To gain collective feedback from a targeted groups like organize discussion with farmers or manufacturers capture main pain points and expectations.

observation - To understand real world workflow like observe current process of buying agriculture products.

prototyping - Visualization of system requirements

2 . stakekholder analysis RACI : Stakeholder ananlysis can be done by using RACI Matrix involves identifying stakeholder and defining their roles and responsibilities within the project . Identify stakeholder , define roles and resposibilities ,create the RACI matrix , assingn RACI roles. as

R - Responsible ,A - Accountable,C -Consulted ,I- informed . according to RACI matrix in this pojects roles will as follows:

Stakeholder Name RACI Role Role

Mr. Henry A Client

Mr. Pandu C Financial Head Mr. Dooku R Project Coordinator

Peter, Kevin, Ben, C Farmers/End Users

Mr. Karthik A Delivery Head

Mr. Vandanam R Project Manager

Development Team R Java Developers

Tester R QA Team

Network & DB Admins C Infrastructure Support

3 . What documents to write :

Business Requirement Document (BRD),Captures business needs & objectives,Client, BA, Project Manager

Functional Requirement Document (FRD),Defines system behavior & features,Client, Development Team

Use Case Document,Specifies user interactions,Development & Testing Teams

Process Flow Diagrams,Graphical representation of workflows,Project Team

Data Flow Diagram (DFD),Showcases data movement within the system,Database & Network Admins

Requirements Traceability Matrix (RTM),Maps requirements to deliverables,BA, Testers

4. Approval & Sign-off Process

Sign off to be taken on SRS as this is the primary and important document. sign off can be taken by using E- Mail confirmation from clint

5 . Approval from client :

Establish a formal meeting with the clients to keep them informed and get continuous feedback.

6. Communication channels to establish and impliment :   
Regular meetings , weekly status meetings, biweekly status sprint reviews, and monthly stakeholder updates,Email Updates,Share MOM, progress reports,Weekly,All stakeholders

7 . Handling of Change Request : Objective: Handle scope changes efficiently to avoid project delays.

Process:

Change Request Form (CRF) is submitted by the requesting stakeholder.

BA analyzes the impact on cost, timeline, and system functionality.

The Project Manager & Client review the impact and approve/reject the change.

Approved changes are documented in the Change Log and RTM.

8 . Update the progress of the project to the stakeholders :

Weekly status report ,monthly reviews meetings

9. Take sign off on the UAT -Client project acceptance form :

Prepare UAT Test Cases , conduct UAT , fix issues(Identified defects are fixed by developers.), Acceptance form ,final review meeting ,Obtain sing off(Client approves the Project Acceptance Form after successful testing.)

**Question 3 – 3-Tier Architecture - 5 Marks**

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

**Answer :** 3-Tier Architecture Explanation with Three Layers

The 3-Tier Architecture ensures modularity, security, and scalability by separating the Client Tier, Business Logic Tier, and Database Tier. This structured approach helps in maintaining large-scale applications, such as the Online Agriculture Store, while keeping the system efficient and manageable.

The 3-Tier Architecture is a software design pattern that divides an application into three logical layers:

1. Client tier (Presentation Layer)

2. Business Logic Tier (Application Layer)

3. Database Tier (Data Layer)

Each tier is responsible for specific tasks and interacts with the other layers to process and deliver information efficiently.

1. Client Tier (Presentation Layer)

Definition:

• The Client Tier is the user-facing part of the application where users interact with the system.

• It consists of web applications, mobile apps, or desktop applications that send requests to the server.

Responsibilities:

• Displays UI elements (buttons, forms, product catalogs).

• Sends user inputs to the Business Logic Tier.

• Receives and presents data from the Business Logic Tier.

Example in an Online Agriculture Store:

• A farmer logs into the website or mobile app.

• The farmer searches for fertilizers and adds them to the cart.

• The UI sends the purchase request to the Business Logic Tier.

2. Business Logic Tier (Application Layer)

Definition:

• The Business Logic Tier processes user requests, applies business rules, and communicates with the Database Tier.

• It ensures that the data sent to and from the database is handled correctly.

Responsibilities:

• Processes requests from the Client Tier.

• Applies business rules (e.g., checking product availability, applying discounts).

• Communicates with the Database Tier to retrieve or store data.

Example in an Online Agriculture Store:

• The server validates user login credentials when a farmer logs in.

• When a farmer selects products, the business logic checks inventory availability before confirming the order.

• The system calculates the total cost and applies any discounts.

3. Database Tier (Data Layer)

Definition:

• The Database Tier stores, manages, and retrieves data for the application.

• It ensures data integrity, security, and efficient querying.

Responsibilities:

• Stores user data, product details, orders, and transactions.

• Executes queries based on requests from the Business Logic Tier.

• Ensures data security and backup.

Example in an Online Agriculture Store:

• When a farmer registers, their information is stored in the database.

• When a farmer places an order, the order details are saved in the database.

• The system retrieves previous orders when a farmer checks order history.

**Question 4 – BA Approach Strategy for Framing Questions – 10 Marks**

**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)**

**Answer :**

BA Approach Strategy for Framing Questions

A Business Analyst (BA) plays a crucial role in gathering requirements and ensuring clear communication with stakeholders. Before framing a question, a BA should consider multiple aspects, including 5W 1H, SMART criteria, RACI model, 3-Tier Architecture, and documentation techniques.

1. 5W 1H Approach for Question Framing

The 5W 1H method helps ensure that questions are comprehensive and meaningful by covering all critical aspects of the requirement. The 5W 1H framework is a useful tool for gathering information and understanding a situation by answering question about who ,what,when,where,why,and how

Example in Online Agriculture Product Store :

What,Defines the requirement.,What features do you want in the online store?

Why,Understands the purpose.,Why do farmers need an online platform?

Who,Identifies stakeholders.,Who will use this system (farmers, manufacturers, admins)?

When,Determines timelines.,When should the order tracking feature be implemented?

Where,Identifies scope/location.,Where will this system be accessible (web, mobile)?

How,Finds implementation details.,How will the system notify farmers about product updates?

2. SMART Criteria for Question Framing

A BA should ensure that the requirements gathered from stakeholders are SMART . SMART technique helps in creating question (Specific, Measurable, Achievable, Relevant, and Time-bound) to avoid ambiguity

SMART Factor,How to Frame Questions,Example in Online Agriculture Product Store

Specific,Ensure the question is focused.,What specific details should be included in the product catalog?

Measurable,Quantify the requirement.,How many product categories should be available?

Achievable,Ensure feasibility.,Can farmers track orders in real-time?

Relevant,Align with business needs.,Should the platform support multiple languages for rural farmers?

Time-bound,Set deadlines.,By when should the system go live?

3. RACI Model for Stakeholder Engagement

Before framing questions, a BA should identify who is responsible, accountable, consulted, and informed (RACI model) to direct questions to the right stakeholders.

Farmer(end user)-Consulted

Manufacturers - Responsible

Project manager - Accountable

Testers - Informed

4. Considering 3-Tier Architecture in Questions

A BA should frame questions for all three layers to ensure complete requirements gathering.

The 3-Tier Architecture is a software design pattern that divides an application into three logical layers:

1. Client tier (Presentation Layer)

2. Business Logic Tier (Application Layer)

3. Database Tier (Data Layer)

5 . Use Case- use cases Describes user interactions,How should a farmer place an order on the platform

6 . Use Case Specification- Use Case Specifications,Details system responses,What should happen if an order payment fails?

7 . Activity Diagram - Activity Diagrams,Shows workflows,What are the steps for processing an order request?

8. Data Models - Data Models,Defines database structure,What fields should be included in the farmer’s profile?

9 . Page Designs (Wireframes)- Page Designs (Wireframes),Defines UI layout,How should the checkout page be structured?

**Question 5 – Elicitation Techniques - 6 Marks**

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

**Answer -**

Elicitation Techniques in Business Analysis (BDRFOWJIPQU)

Elicitation is the process of gathering requirements from stakeholders to define the project scope. As a Business Analyst (BA), various techniques can be applied based on the project and stakeholder needs. Below are some commonly used elicitation techniques, following the acronym BDRFOWJIPQU:

1. B – Brainstorming

• Purpose: Generate innovative ideas and solutions in a group discussion.

• When to Use: When exploring multiple options for system features or business processes.

• Example: Brainstorming with farmers and manufacturers to identify key features of the Online Agriculture Product Store.

2. D – Document Analysis

• Purpose: Review existing documentation to understand current processes and systems.

• When to Use: When similar projects exist or when enhancing an existing system.

• Example: Analyzing previous e-commerce platform designs to understand product listing and checkout features.

3. R – Reverse Engineering

• Purpose: Analyze an existing system to extract requirements.

• When to Use: When documentation is unavailable or outdated.

• Example: Examining competitor agriculture e-commerce platforms to identify best practices.

4. F – Focus Groups

• Purpose: Gather insights from a group of stakeholders with similar interests.

• When to Use: When direct feedback is needed from end-users or industry experts.

• Example: Organizing a session with farmers to discuss challenges in accessing agricultural products online.

5. O – Observation

• Purpose: Study users in their natural environment to understand their challenges.

• When to Use: When actual user behavior needs to be captured instead of verbal feedback.

• Example: Observing farmers’ current procurement process to identify pain points.

6. W – Workshops

• Purpose: Conduct collaborative sessions to gather detailed requirements and validate findings.

• When to Use: When multiple stakeholders need to align on requirements.

• Example: Conducting a workshop with farmers, suppliers, and developers to finalize the order placement workflow.

7. J – Joint Application Development (JAD)

• Purpose: Engage business and technical teams in structured sessions to define requirements.

• When to Use: When real-time collaboration between stakeholders and developers is required.

• Example: A JAD session with Java developers and farmers to define the user experience for the online store.

8. I – Interviews

• Purpose: Conduct one-on-one discussions with stakeholders to collect detailed information.

• When to Use: When personal insights are needed from key decision-makers.

• Example: Interviewing manufacturers to understand their expectations for listing fertilizers and pesticides.

9. P – Prototyping

• Purpose: Create wireframes or mock-ups to visualize requirements before full development.

• When to Use: When stakeholders need a visual representation of the system.

• Example: Developing a prototype of the product catalog for farmers to review and provide feedback.

10. Q – Questionnaires & Surveys

• Purpose: Collect structured responses from a large group.

• When to Use: When broad stakeholder feedback is needed.

• Example: Sending surveys to farmers to identify preferred payment methods.

11. U – User Stories

• Purpose: Capture functional requirements from an end-user perspective.

• When to Use: When defining system functionalities in Agile environments.

• Example: Writing a user story: “As a farmer, I want to browse fertilizers based on crop type so that I can choose the best product.”

Each elicitation technique serves a unique purpose. By combining multiple approaches (BDRFOWJIPQU), a Business Analyst can gather comprehensive, clear, and accurate requirements for the Online Agriculture Product Store, ensuring project success.

**Question 6 – This project Elicitation Techniques - 5 Marks**

**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 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 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**

**Answer :**

Elicitation Techniques for Online Agriculture Product Store Project

For gathering business requirements and stakeholder requirements, the following elicitation techniques have been selected for this project:

1. Prototyping

Justification:

• Helps visualize the application before development begins.

• Provides a tangible interface for stakeholders to review and suggest improvements.

• Useful in validating user experience and identifying usability issues early.

• Application to Project:

• Create mock-ups of the login screen, product catalog, search feature, payment gateway, and order tracking system.

• Farmers, manufacturers, and key stakeholders can review and provide feedback on the UI/UX.

2. Use Case Specifications

Justification:

• Clearly defines user interactions with the system.

• Helps developers and testers understand business needs through structured use cases.

• Ensures end-to-end system flow is documented.

• Application to Project:

• Use cases will describe how farmers browse products, how manufacturers upload listings, and how the payment system works.

• Example Use Case: A farmer logs in, searches for seeds, adds items to the cart, makes a payment, and tracks delivery.

3. Document Analysis

Justification:

• Reviews existing systems and similar platforms to identify best practices.

• Helps extract requirements that might have been missed during stakeholder discussions.

• Application to Project:

• Analyzing existing e-commerce agriculture platforms to understand features like login, search, payment, and tracking.

• Reviewing legal and compliance documents related to online agricultural transactions.

4. Brainstorming

Justification:

• Encourages stakeholders to discuss and refine requirements.

• Helps in identifying innovative solutions that might not be obvious initially.

• Application to Project:

• Conducting brainstorming sessions with Peter, Kevin, and Ben to finalize the payment options and order tracking features.

• Engaging Mr. Henry and manufacturers to define how products should be displayed and categorized.

Identified Business Requirements (Stakeholder Requirements):

|  |  |  |  |
| --- | --- | --- | --- |
| BR ID | Business Requirement | Stakeholder, | Related Elicitation Technique |
| BR001 | Farmers should be able to search for available products (fertilizers, seeds, pesticides) | Farmers (Peter, Kevin, Ben) | Use Case Specs, Brainstorming |
| BR002 | Manufacturers should be able to upload and display their products in the application, | Manufacturers, | Prototyping, Document Analysis |
| BR003 | Farmers should be able to create an account and log in, | Farmers , | Use Case Specs, Prototyping |
| BR004 | A secure payment gateway with COD, Debit/Credit card, and UPI should be available | Farmers, | Brainstorming, Document Analysis |
| BR005 | Farmers should receive email confirmations and be able to track deliveries, | Farmers,Prototyping, Brainstorming | Prototyping, Brainstorming |

Conclusion

The combination of Prototyping, Use Case Specifications, Document Analysis, and Brainstorming will ensure a comprehensive and structured requirement gathering process for the Online Agriculture Product Store. This will help in better system design, improved user experience, and smoother project execution.

**Question 7 – 10 Business Requirements- 10 Marks**

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

**Answer :**

Business Requirements for Online Agriculture Product Store

Assumptions:

1. The platform will be a web and mobile-based application for farmers and manufacturers.

2. The application will support multiple languages for better accessibility.

3. A secure login and authentication system will be implemented.

4. Farmers will have access to a product catalog with search and filter options.

5. Manufacturers will be able to list and manage their products.

6. A secure payment gateway will be integrated with multiple payment options.

7. Users will receive notifications and email confirmations for their orders.

8. A delivery tracking system will be available for farmers.

9. Customer support will be provided via chat, email, and phone.

10. The system should comply with agricultural trade regulations and data privacy laws.

Identified Business Requirements (BRs):

|  |  |  |
| --- | --- | --- |
| BR ID | Business Requirement | Stakeholder, |
| BR001 | Farmers should be able to search for available products (fertilizers, seeds, pesticides) | Farmers (Peter, Kevin, Ben) |
| BR002 | Manufacturers should be able to upload and display their products in the application, | Manufacturers, |
| BR003 | Farmers should be able to create an account and log in,securely using email and password | Farmers ,Manufacturers, |
| BR004 | A secure payment gateway with COD, Debit/Credit card, and UPI should be available | Farmers,,Manufacturers, |
| BR005 | Farmers should receive email confirmations and be able to track deliveries, | Farmers |
| BR006 | Farmers should receive email/SMS confirmations for successful orders and payment transactions | Farmers |
| BR007 | A delivery tracking system should allow farmers to track their order status in real-time | Farmers |
| BR008 | The platform should provide a customer support system with chat, email, and call support | Farmers, Manufacturers |
| BR009 | The application should be mobile-friendly and support multiple languages for accessibility in rural areas | Farmers |
| BR010 | The system should follow agricultural regulations and data privacy laws to protect user information and ensure compliance | OONY Company, Regulatory Authorities |

**Question 8 –Assumptions- 5 Marks**

**List your assumptions**

**Answer :**

Assumptions for Online Agriculture Product Store Project

1. Internet Accessibility: Farmers and manufacturers will have internet access to use the platform effectively.

2. User Literacy: Farmers will have basic digital literacy to navigate the web or mobile application.

3. Product Availability: Manufacturers will regularly update their product listings with accurate stock details.

4. Delivery Network: A logistics provider will handle order deliveries to rural areas.

5. Payment Security: The system will use secure payment gateways to protect user transactions.

6. User Authentication: Farmers and manufacturers will register and log in using email and password.

7. Multilingual Support: The platform will offer multiple languages to accommodate farmers from different regions.

8. Regulatory Compliance: The platform will comply with government regulations on e-commerce and agricultural product sales.

9. Scalability: The system will be designed to handle increased users and transactions as demand grows.

10. Technical Support: A customer support team will be available to assist users with any issues.

These assumptions help in defining the project scope and ensuring smooth execution.

**Question 9 – This project Requirements Priority - 8 Marks**

**Give Priority 1 to 10 numbers ( 1 being low priority – 10 being high priority) to these Requirements**

**after discussions with the stakeholders**

**Answer :**

Requirements Prioritization for Online Agriculture Product Store

After discussions with stakeholders, the following priority levels (1–10, with 10 being the highest priority) have been assigned to each business requirement:

|  |  |  |  |
| --- | --- | --- | --- |
| Req ID | Req Name | Req Description | Priority (1-10) |
| BR001 | Farmer Search for Products | Farmers should be able to search for available products in fertilizers, seeds, and pesticides | 8 |
| BR002 | Manufacturers Upload Their Products | ,Manufacturers should be able to upload and display their products in the application | 8 |
| BR003 | User Registration & Login,Farmers | Farmers and manufacturers should be able to register and log in securely. | 10 |
| BR004 | Product Ordering & Checkout | Farmers should be able to add products to the cart and complete the purchase | 9 |
| BR005 | Payment Gateway Integration | Secure payment methods including COD, Credit/Debit Card, and UPI should be available | 10 |
| BR006 | Order Confirmation Notifications | Farmers should receive email/SMS confirmations for orders and payments. | 7 |
| BR007 | Delivery Tracking System | Farmers should be able to track the status of their orders | 9 |
| BR008 | Customer Support | A customer support system with chat, email, and call options should be available | 6 |
| BR009 | Multilingual Support | The platform should support multiple languages to improve accessibility | 5 |
| BR010 | Compliance & Data Security | The system should follow government regulations and data privacy laws | 9 |

Justification for Prioritization:

• High Priority (9-10): Essential features like user login, payment gateway, product ordering, and delivery tracking must be implemented first for the platform to function.

• Medium Priority (7-8): Important but not critical features like product search, manufacturer uploads, and notifications improve usability and efficiency.

• Low Priority (5-6): Features like multilingual support and customer service enhance user experience but can be implemented in later phases.

Next Steps:

Once the requirements are finalized, the Business Analyst (BA) will:

1. Create UML Diagrams such as Use Case Diagrams, Activity Diagrams, and Sequence Diagrams to help the project team understand workflows.

2. Develop Screen Mock-ups to visually represent the search, login, checkout, and tracking features.

3. Communicate with Developers & Testers to ensure a shared understanding of requirements and priorities.

This prioritization ensures efficient development, faster go-to-market, and better user experience.

**Question 10 – Use Case Diagram - 10 Marks**

**Draw use case diagram**

**Answer :**

A use case diagram is a visual reprentation of of the interaction between users (actors) and a system.

A use case is a high level of diagram

The main purpose of the diagram is to identify the requirement.

A use case diagrams are designed to explain how external user are interacting with the system.



**Question 11 – (minimum 5) Use Case Specs - 15 Marks**

**Prepare use case specs for all use cases**

**Answer:**

Use Case 1: User Registration and Login

Actors

• Farmer (End user)

• Manufacturer (Company selling fertilizers, seeds, and pesticides)

• Admin (System Administrator)

Preconditions

• The user must have internet access.

• The user should have a valid email or phone number for registration.

Postconditions

• The user is successfully registered or logged into the system.

• The user gains access to the application’s features based on their role.

Main Flow

1. The user opens the application.

2. They choose between “Register” and “Login.”

3. If registering:

• They enter their details (Name, Email, Mobile Number, Password, and Role - Farmer/Manufacturer).

• The system validates the details and creates an account.

4. If logging in:

• They enter their registered email/phone number and password and system verifies the credentials

5. If successful, the user is redirected to the dashboard.

Alternative Flow

• Invalid Credentials: If login fails due to incorrect credentials, an error message is displayed.

• Forgot Password: Users can reset their password via OTP verification.

Use Case 2: Adding Agricultural Products (For Manufacturers)

Actors

• Manufacturer

• Admin (For approval, if required)

Preconditions

• The manufacturer must be logged in.

• The manufacturer must be verified and approved by the admin.

Postconditions

• The product details are saved and displayed for farmers to browse.

Main Flow

1. The manufacturer logs in.

2. They navigate to “Add Product.”

3. They fill in product details (Name, Category - Fertilizer/Seed/Pesticide, Price, Quantity, Description, Images, etc.).

4. The system saves the product details.

5. If approval is required, the admin reviews and approves the product.

6. Once approved, the product is displayed for farmers.

Alternative Flow

• Incomplete Details: If mandatory details are missing, the system prompts the manufacturer to complete them.

• Approval Rejection: If the admin rejects the product, the manufacturer is notified with reasons.

Use Case 3: Browsing and Searching for Products (For Farmers)

Actors

• Farmer

Preconditions

• The farmer must be logged in.

• Products must be available in the system.

Postconditions

• The farmer can view and select the required product.

Main Flow

1. The farmer logs in.

2. They navigate to the “Browse Products” section.

3. They can search for products using keywords or filter by category (Fertilizers, Seeds, Pesticides).

4. The system displays relevant products with details.

5. The farmer selects a product to view more details.

Alternative Flow

• No Products Available: If no matching product is found, the system displays an appropriate message.

Use Case 4: Placing an Order

Actors

• Farmer

• Manufacturer

• Admin (For overseeing transactions if needed)

Preconditions

• The farmer must be logged in.

• The selected product must be in stock.

Postconditions

• The order is successfully placed.

• The manufacturer is notified.

Main Flow

1. The farmer selects a product.

2. They enter the quantity required.

3. They provide delivery details.

4. They choose a payment method (Online Payment / Cash on Delivery).

5. The system processes the order and notifies the manufacturer.

6. The manufacturer confirms the order and prepares for delivery.

Alternative Flow

• Out of Stock: If the product is not available, an error message is displayed.

• Payment Failure: If an online payment fails, the system prompts the user to retry or choose another method.

Use Case 5: Order Tracking and Delivery

Actors

• Farmer

• Manufacturer

• Delivery Personnel

Preconditions

• An order must be placed and confirmed.

• The manufacturer must have initiated the delivery process.

Postconditions

• The farmer receives the product.

• The order status is updated.

Main Flow

1. The manufacturer ships the product.

2. The system updates the order status to “Shipped.”

3. The farmer receives tracking details.

4. The delivery personnel delivers the product.

5. The farmer marks the order as “Received.”

Alternative Flow

• Delayed Shipment: If there is a delay, the system notifies the farmer.

• Order Cancellation: The farmer can cancel the order before it is shipped.

**Question 12 – (minimum 5) Activity Diagrams - 15 Marks**

**Activity diagrams**

**Answer :**

The activity diagram is a type of diagram in the unified modeling language (UML)that Visually represents the flow of activities within a system

Activity diagrams on

1. User Registration

2. Search product

3. Add products in the cart

4. making payment

5. Delivery

1 .User Registration



2. Search product –



3. Add products in the cart :



4. making payment :



5. Delivery :

