Decode the case study

Project idea - To make an online agriculture product store to facilitate remote area farmers to buy agriculture products.

Current needs -
1.Through this online web/mobile application farmers and companies can communicate directly with each other.

2.The new application should be able to accept the product.

3.Whatever product farmers need should be deliver to farmer’s location.

4.Application should be user friendly.

Overview of the project - There is shortage of pesticides,fertilizers,and seeds and also availability. To solve this problem we have to make an online store.

Current problems - Farmers are facing some difficulties in procuring fertilizers and buying seeds and lack of pesticides.

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

- **Quarter 1 Audit report (Requirement gathering phase)**

STAGE	Requirement Gathering
Time frame	**Month 1 - Month 3**
Check list	Ensure all requirements are documented in FRD/NFRD.
	Participate in stakeholder meetings and record elicitation outcomes.
	Submit the Requirement Traceability Matrix (RTM).
	Present Use Cases, User Stories, and Client Sign-off documents.

Quarter 2 Design phase

STAGE	Design phase
Time frame	**Month 4 - Month 6**
Check list	Submit Business Process Models or Flowcharts.
	Ensure RTM is updated with design traceability.

	Participate in design validation meetings.

- **Quarter 3 Testing phase**

STAGE	Testing phase
Time frame	**Month 7 - Month 9**
Check list	Ensure BA supports the creation of Test Scenarios and Test Cases.
	Provide signed UAT Scenarios.
	Validate that all business rules and requirements are mapped in testing.
	Submit Defect Logs and ensure BA involvement in clarification.

- **Quarter 4 UAT & Project closure**

STAGE	UAT & Project closure
Time frame	**Month 10 - Month 12**
Check list	Participate in UAT sessions and collect feedback.
	Submit the UAT Sign-Off Form.
	Ensure all change requests are logged and documented.
	Submit Client Acceptance Form.

Question 2 – Write down the BA Approach Strategy?

BA approach strategy-

Project: Online Agriculture Product Store
Prepared by: Business Analyst (You)
Team: **PM** – Mr. Vandanam,

Sr. Java Dev – Ms. Juhi, Java Devs – Mr. Teyson, Ms. Lucie, Mr. Tucker, Mr. Bravo,

Testers – Mr. Jason & Ms. Alekya, DB Admin – Mr. John,

Network Admin – Mr. Mike

1. Project Understanding and Scope Finalization

- Study the client-provided vision and problem areas (fertilizer, seed, pesticide accessibility).

- Identify key business needs, goals, and high-level requirements.

2. Stakeholder Identification and Analysis

- List key stakeholders: Mr. Henry (Sponsor), Mr. Pandu, Mr. Dooku (Committee), farmers, manufacturers.

- Prepare **Stakeholder Matrix** and **RACI Chart**:

    - **Responsible (R)**: You (BA), Devs, Testers

- **Accountable (A)**: PM – Mr. Vandanam
- **Consulted (C)**: Mr. Pandu, Mr. Dooku, Farmers, Manufacturers
- **Informed (I)**: Sponsor (Mr. Henry), Committee

3. Elicitation Techniques

Use a combination of the following:

- **Interviews**: With Mr. Henry, Mr. Pandu, and remote farmers.
- **Workshops**: With dev team & stakeholders to finalize requirements.
- **Questionnaires**: For farmers/manufacturers to understand problems.
- **Document Analysis**: Review existing manuals, web apps, CSR guidelines.
- **Observation**: Understand farmers' purchase behavior and pain points.

4. Documentation Plan

Prepare and maintain:

- BRD (Business Requirements Document)
- FRD (Functional Requirements Document)
- Use Case Diagrams/User Stories
- RTM (Requirement Traceability Matrix)
- Process Flows (Swimlane/UML diagrams)
- Change Request Forms
- UAT Sign-Off Sheet
- Client Project Acceptance Form

5. Requirement Sign-off Process

- Conduct **requirement walkthrough** with stakeholders.
- Collect formal feedback.
- Lock final versions and send via email with tracking.
- Get **email/document-based sign-off** from client (Mr. Henry/Committee).

6. Communication & Approval Channels

- Daily standups with PM & dev team (Google Meet/Slack).
- Weekly status email to stakeholders.
- Monthly progress presentations to the committee.
- Document repository access via Google Drive/Zoho Docs.
- Change requests approved by Committee (CC Mr. Henry).

7. Handling Change Requests (CR)

- Record CRs in a dedicated log.
- Perform **impact analysis** on time, cost, scope.
- Review with PM (Mr. Vandanam) and committee.
- Update BRD/FRD if CR is approved and inform all impacted teams.

8. Progress Reporting

- Use tools like Jira/Zoho Projects or Excel to track BA task status.
- Weekly reporting of:
- Document status
- CRs handled
- Issues or blockers
- Share progress during team meetings and in email updates to Mr. Vandanam and Committee.

9. UAT and Project Closure

- Coordinate with Testers (Mr. Jason and Ms. Alekya) to prepare UAT test cases.
- Support UAT execution with farmers and stakeholders.
- Document UAT feedback, defects, and fixes.
- Collect **UAT Sign-off** and **Client Acceptance Form**.

- Handover documents to operations/support and archive.

Summary Table (Quick View)

STEP	ACTIVITY	OWNER
1	Stakeholder Analysis & RACI	BA
2	Elicitation (Interview, Workshop, etc.)	BA + PM
3	BRD/FRD/Use Cases/RTM	BA
4	Review & Sign-OffReview & Sign-Off	BA + Stakeholders
5	Weekly Communication Weekly Communication	BA + PM
6	CR Handling	BA + PM + Committee
7	UAT & Final Sign-off	BA + Testers + Client

Question 3 – 3-Tier Architecture, Explain and illustrate 3-tier architecture?

3-Tier Architecture is a software architecture model that divides the application into three logical layers, each with its own responsibility. It improves modularity, scalability, security, and maintenance.

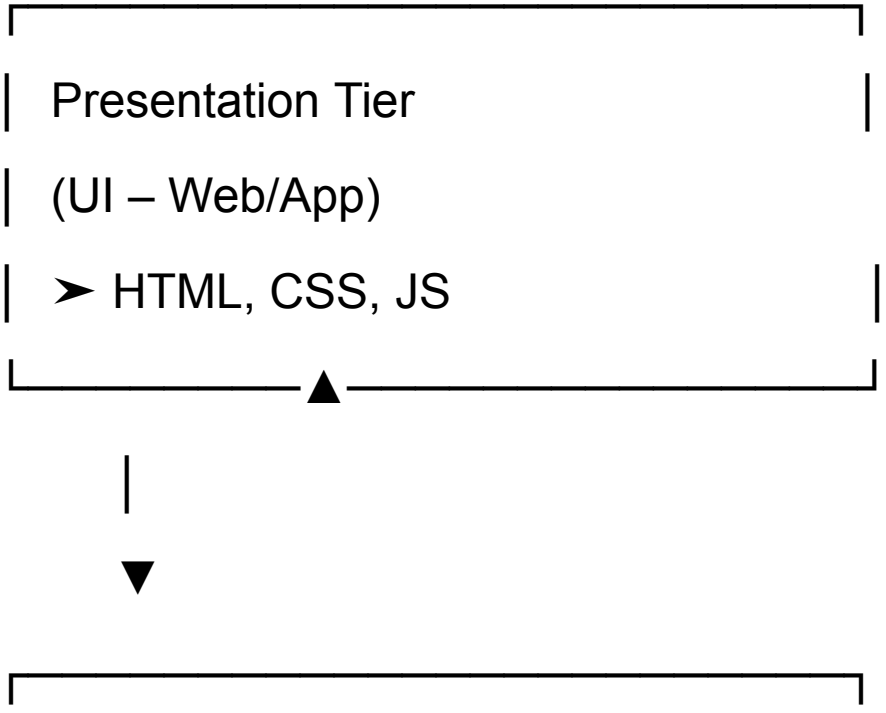
The Three Layers Are :

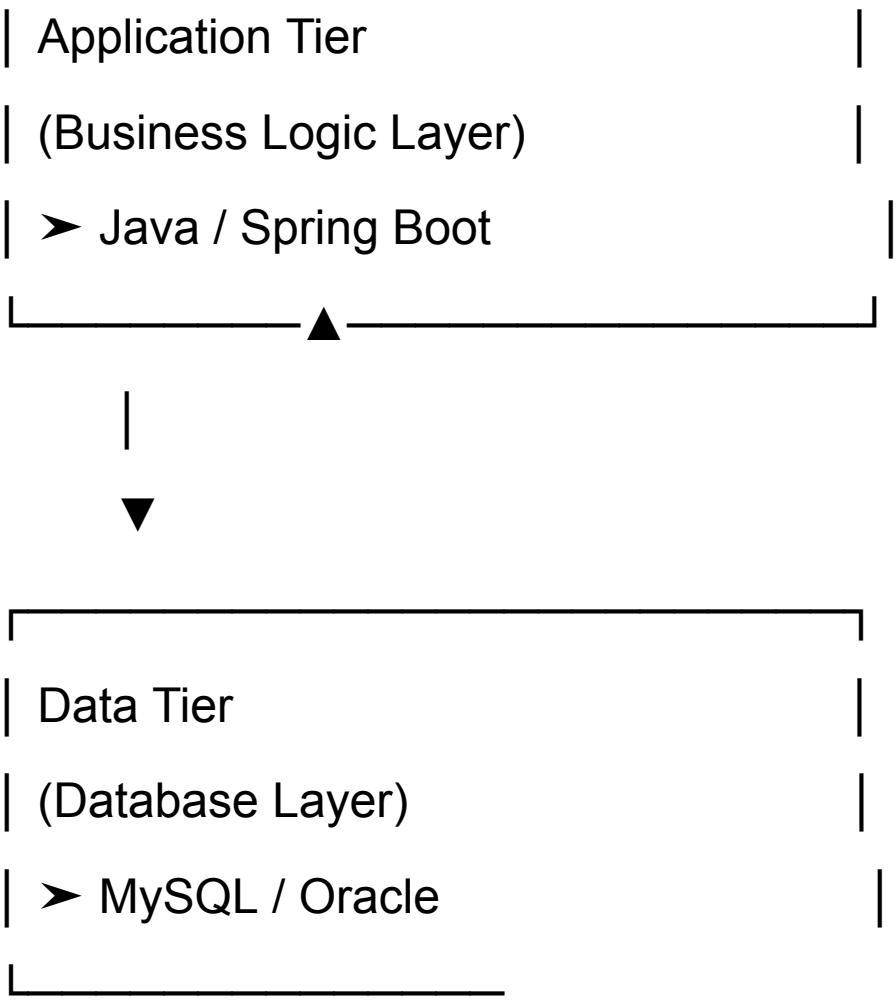
TIER	DESCRIPTION	EXAMPLE IN MY PROJECT
1. Presentation Tier	This is the user interface layer where users interact	Web portal/mobile app used by farmers

	with the application.	
2. Application (Logic) Tier	This is the business logic layer. It processes user inputs, makes decisions, and performs operations.	Java backend system processing orders, authentication, etc.
3. Data Tier	This layer is responsible for storing and retrieving data from databases.	MySQL/Oracle DB storing user info, products, orders, etc.

Advantages of 3-Tier Architecture:

- Security: Data is separated from the UI layer
- Scalability: Each tier can be scaled independently
- Maintainability: Easier to debug and update each layer
- Reusability: Business logic can be reused by multiple interfaces (web, mobile).





Question 4 – BA Approach Strategy for Framing Questions?

Before a Business Analyst (BA) frames questions for stakeholders, it is essential to follow a strategic thought process to ensure clarity, completeness, and relevance. The BA must ensure that the right information is gathered to build accurate, feasible, and value-driven solutions.

Below is the approach, integrating key frameworks like 5W1H, SMART, RACI, 3-Tier Architecture, and Use Case Models.

1. 5W 1H (Why, What, Who, Where, When, How)

Dimension	Purpose	Sample BA Questions
WHY	Understand purpose, pain points	Why do farmers face issues ordering products currently?
WHAT	Understand requirements, scope	What features do you expect in the online agriculture system?
WHO	Identify users, roles, and stakeholders	Who will manage product inventory? Who is the end user?
WHERE	Define location, access channels	Where will this app be accessed – rural kiosks, phones, etc.?
WHEN	Understand timing and frequency	When should the delivery be fulfilled after an order?
HOW	Understand the method and process	How do users currently purchase fertilizers offline?

2. SMART Framework (for well-defined questions/goals).

- Specific – Clear and to the point
- Measurable – Can be tracked or validated
- Achievable – Within project constraints
- Relevant – Related to business goals

- Time-bound – Deliverable in a specific phase

3. RACI Analysis Considerations.

- Who is Responsible for the process?
- Who is Accountable for final decisions?
- Who should be Consulted before asking technical or policy-related questions?
- Who should be Informed after decision-making?

4. 3-Tier Architecture Alignment.

Presentation Layer: What UI features do users expect?

Application Layer: What business rules and logic must be followed?

LayeDatar: What data is needed, and how should it be stored/retrieved?

5. Use Case Thinking & Modeling.

Use Cases: What are the daily tasks of the user?

Use Case Specifications: What is the goal, trigger, preconditions, and flow?

Activity Diagrams: What sequence of steps does the user follow?

6. BA's Internal Checklist Before Asking Questions

CHECKPOINT	EXAMPLE QUESTION
Is this question aligned to scope?	Yes → Ask about delivery timeline, not transport fees
Does this question reflect RACI roles?	Yes → Ask finance team about budget

Will the answer help model workflows?	Yes → Helps build use cases or activity diagrams
Is the question free from assumptions?	Yes → Open-ended and neutral wording

Question 5 – Elicitation Techniques - As a Business Analyst, What Elicitation Techniques you are aware of ?

This represents the 11 **(BDRFOWJIPQU)** common elicitation techniques that Business Analysts use to gather, validate, and refine requirements from stakeholders.

- **Elicitation Techniques (BDRFOWJIPQU).**

Letter	Technique	Explanation	Example (Agri Project)

B	Brainstorming	A group technique to generate ideas and solutions rapidly.	Brainstorm features with farmers and committee
D	Document Analysis	Review existing documents, manuals, reports, and policies.	Analyze fertilizer supply data, CSR guidelines
R	Reverse Engineering	Analyzing an existing system to understand functionality.	Review current manual order system or WhatsApp orders
F	Focus Groups	Interactive session with selected stakeholders to gather opinions and expectations.	Conduct with 5 farmers and 2 agri officers
O	Observation (Job Shadowing)	Watching users perform tasks to understand their workflows.	Observe a farmer buying pesticides from local store
W	Workshops	Structured sessions to discuss and finalize requirements collaboratively.	Workshop with developers, PM, and committee to finalize features
J	JAD (Joint Application Development)	Intense, structured workshop involving users and developers.	Use JAD to finalize screen flows and role access
I	Interviews	One-on-one or group sessions with stakeholders to gather detailed requirements.	Interview Mr. Henry and Mr. Pandu about delivery process
P	Prototyping	Creating mockups or wireframes to visualize and validate requirements.	Prepare a mock web page for seed catalog and get feedback
Q	Questionnaires/Surveys	Distribute structured forms to gather input from a large user base.	Survey 100 farmers on internet/mobile usage
U	User Task Analysis	Breakdown of the steps users take to complete their tasks.	Analyze how farmers place orders and pay

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 ?

- Elicitation Techniques Chosen for This Project.

1. Prototyping

- **Why Used?**
- The client (Mr. Henry) and stakeholders (Peter, Kevin, Ben) explained UI-related expectations like login, product catalog, search, and delivery tracking.

- Stakeholders may not fully express all requirements verbally — **visual prototypes** help refine and validate what users want.

Use In This Project:

- Create low-fidelity mockups/screens for:

- Login / Registration

- Product search page

- Payment page

- Delivery tracker screen

- Helps clarify UI layout, flow, and user experience before development.

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2. Use Case Specifications

- **Why Used?**
- Stakeholders like Peter and Ben described **functional behaviors**, e.g., account creation, product selection, payments.

- Use Cases help define **step-by-step actions** users take in the system.

Use In This Project:

- Define Use Cases like:

- “Login to the System”

- “Browse and Search Products”

- “Add to Cart”

- “Make a Payment”

- “Track Order”

3. Document Analysis

- **Why Used?**
- To extract product details and structure (fertilizers, seeds, pesticides) from **existing documents,**

manuals, product catalogs from manufacturers.

- Helps ensure accuracy in database structure and product taxonomy.

Use In This Project:

- Analyze:
- Manufacturer’s product lists
- Regulatory documents
- Past reports on farmer needs
- Extract data fields (e.g., product name, price, category, manufacturer, stock status).

4. Brainstorming

- **Why Used?**
- Useful for idea generation with stakeholders (Mr. Henry, Peter, Kevin, Ben).
- Encourages collaboration on **features**, **payment options**, **order status updates**, and **future enhancements**.

Use In This Project:

- Conduct sessions with business and tech teams to finalize:
- Payment methods (Ben’s suggestion: UPI, COD, Cards)
- Search filter options
- Account creation and user roles
- **Identified Business Requirements (from Stakeholder Inputs)**

BR ID	Requirement
BR001	Farmers should be able to search for available products (fertilizers, seeds, pesticides)
BR002	Manufacturers should be able to upload and display their products in the application
BR003	Users (Farmers) must be able to register and login using secure credentials
BR004	Farmers should be able to browse the catalog and add items to a buy-later list
BR005	Farmers should be able to make payments using UPI, COD, or Cards
BR006	Order status emails should be sent to farmers after purchase
BR007	A delivery tracking system must be provided to farmers

Question 7 – 10 Business Requirements- Make suitable Assumptions and identify at least 10 Business Requirements ?

Assumptions Made:

- Farmers and manufacturers are the primary users.
- The app should work on both web and mobile.
- CSR funds support free/subsidized products for certain farmers.
- There is internet connectivity in target areas.

- **Identified Business Requirements (BRs).**

BR ID	Business Requirement
BR001	Farmers should be able to register and login using email ID and password.
BR002	Registered farmers must be able to browse and search for products in categories like fertilizers, seeds, pesticides.
BR003	Product manufacturers should be able to upload and manage their product listings.
BR004	The system must allow farmers to add products to the cart or a "buy later" wishlist.
BR005	Farmers should be able to view detailed product information (price, quantity, usage instructions).
BR006	The system must support multiple payment methods (UPI, Credit/Debit Card, COD).
BR007	Users must receive confirmation emails and invoices upon successful order placement.
BR008	Farmers must be able to track the delivery status of their orders.
BR009	Admin must be able to manage users, manufacturers, orders, and payments from a central dashboard.
BR010	The system should support promotional discounts or CSR funding for selected farmers or products.

Question 8 –Assumptions- List your assumptions ?

- **List of Assumptions**

Assumption No.	Assumption Statement
A1	Farmers and manufacturers will have basic knowledge of using mobile phones or web apps.
A2	All users (farmers, manufacturers) will have access to a valid email ID and internet.
A3	The government/CSR program will provide funds to support subsidized pricing for farmers.
A4	The system will support English and at least one regional language (e.g., Hindi).
A5	Manufacturers will be responsible for uploading and maintaining accurate product details.
A6	Payment gateways (UPI, COD, Cards) will be integrated and functional from day one.
A7	Delivery services will be managed by a 3rd-party logistics partner.
A8	Admin users will be available to monitor and manage the platform 24x7.
A9	All orders will be delivered within a defined SLA (e.g., 5–7 days).
A10	Farmers will receive communication (order status, updates) via email notifications.

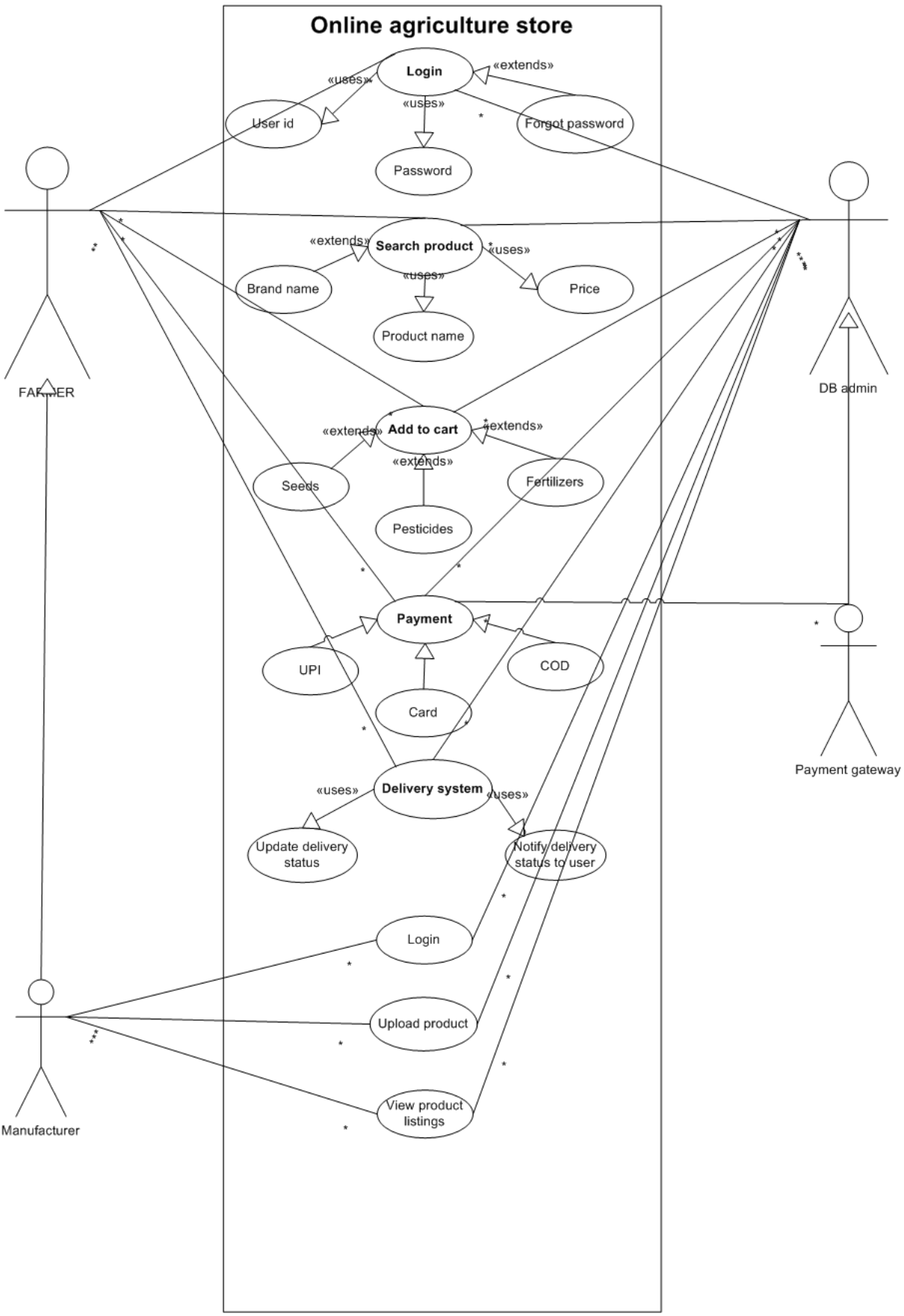
Question 9 – This project Requirements Priority ?

Requirements Priority Table -:

Requirement ID	Requirement Name	Requirent Description	Priority (1–10)	Justification
BR001	Farmer Search for Products	Farmers should be able to search for available products in fertilizers, seeds, pesticides	8	High priority – core feature for farmer usability and product discovery
BR002	Manufacturer	Manufacturers should be able to	8	Essential – without product uploads,

	Product Upload	upload and display their products in the application		catalog remains empty
BR003	Farmer Login & Registration	Users must be able to register/login via email and password	10	Very high – mandatory for personalization, order, and cart management
BR004	Add to Buy Later List	Farmers can add products to a “buy later” wishlist	5	Medium – good for user experience, but not essential for MVP
BR005	View Product Details	Farmers should view detailed info (price, quantity, description) before purchase	9	High – needed to make informed purchase decisions
BR006	Payment Integration	App must allow payments via UPI, COD, Cards	9	Critical for transaction completion
BR007	Order Confirmation via Email	Farmers should get email confirmation after order placement	7	Important for user trust and tracking
BR008	Delivery Tracking	Farmers must be able to track order status post-purchase	6	Helpful for transparency but can be phase 2
BR009	Admin Dashboard	Admin to manage users, products, orders, and payments	9	Needed for operational control and backend monitoring
BR010	CSR Discount Integration	Selected farmers/products should reflect CSR discounts or offers	6	Useful but depends on CSR policy details; not core for MVP

Question 10 – Use Case Diagram - Draw use case diagram ?


Online agriculture store
Login
«uses»
«extends»
«uses»
User id
Forgot password
Password
«extends»
Search product
«uses»
«uses»
Brand name
Price
Product name
FAR...ER
DB admin
«extends»
Add to cart
«extends»
«extends»
«extends»
Seeds
Fertilizers
Pesticides
Payment
UPI
COD
Card
Payment gateway
«uses»
Delivery system
«uses»
Update delivery status
Notify delivery status to user
Login
Upload product
View product listings
Manufacturer

Question 11 – (minimum 5) Use Case Specs ,Prepare use case specs for all use cases ?

Use Case 1: Login

Field	Details
Use Case ID	UC001
Use Case Name	Login
Actor(s)	Farmer, Manufacturer, Admin
Preconditions	User must be registered
Main Flow	1. User enters email and password 2. System verifies credentials 3. Redirects to dashboard
Alternate Flow	If login fails → error message is shown
Postconditions	User is logged into the system

Use Case 2: Search Products

Field	Details
Use Case ID	UC002
Use Case Name	Search Products
Actor(s)	Farmer
Preconditions	User is logged in
Main Flow	1. User enters product name/category 2. System fetches matching products 3. Results displayed
Alternate Flow	No results found → show message
Postconditions	Products are shown to the user

Use Case 3: Upload Product

Field	Details
Use Case ID	UC003
Use Case Name	Upload Product
Actor(s)	Manufacturer
Preconditions	Manufacturer is logged in
Main Flow	1. Fill product form 2. Upload image & price 3. Click submit 4. Product saved
Alternate Flow	If fields missing → show error
Postconditions	Product appears in catalog

Use Case 4: Make Payment

Field	Details
Use Case ID	UC004
Use Case Name	Make Payment
Actor(s)	Farmer
Preconditions	Items are added to cart
Main Flow	1. User selects payment method 2. Payment processed 3. Confirmation message shown
Alternate Flow	Payment failure → show retry option
Postconditions	Order placed & payment receipt sent

Use Case 5: Track Order

Field	Details

Use Case ID	UC005
Use Case Name	Track Order
Actor(s)	Farmer
Preconditions	Order is placed
Main Flow	1. User clicks "Track Order" 2. System shows live order status
Alternate Flow	If order not found → error message
Postconditions	Order status shown

Question 12 – (minimum 5) Activity Diagrams - Activity diagrams ?