

Question 1 – Audits

An audit is a systematic process of examining, reviewing, and evaluating records, processes, systems, or operations to check whether they are accurate, reliable, and compliant with established standards, laws, or objectives.

Q1 Audit (Initiation & Requirements Phase)

- BA ensures **Business Requirements Document (BRD)**, **Stakeholder Register**, and **Requirement Gathering Notes** are complete.
- Auditors will check:
 - Were all stakeholders (farmers, manufacturers, committee members) consulted?
 - Are requirements documented, reviewed, and signed-off?

BA's Role: Present requirement gathering methods, validate traceability of business needs to project scope.

Q2 Audit (Analysis & Design Phase)

- BA ensures **Functional Requirement Specification (FRS) / Use Cases / Process Models (BPMN, workflows)** are properly documented.
- Auditors will check:
 - Are requirements traceable to design elements?
 - Is there a gap analysis document?
- BA's Role: Show how requirements are translated into design, confirm no missing functionality, support the audit team with requirement-to-design mapping.

Q3 Audit (Development & Testing Phase)

- BA validates **Requirement Traceability Matrix (RTM)** is up-to-date.
- Auditors will check:
 - Are requirements mapped to test cases?
 - Are change requests properly logged & approved?
- BA's Role: Work with testers (Jason, Alekya) to confirm requirements are testable, ensure acceptance criteria are measurable, and demonstrate coverage in RTM.

Q4 Audit (Deployment & Closure Phase)

- BA ensures **UAT Sign-off, Lessons Learned, and Project Closure Reports** are maintained.
- Auditors will check:
 - Was UAT done with farmers & companies?
 - Did final solution meet requirements?
 - Is documentation updated for handover?
- BA's Role: Provide evidence of requirement fulfillment, collect stakeholder feedback, and assist in sign-off process.

Question 2 – BA Approach Strategy

1. Requirement Elicitation

I will begin by collecting requirements from all stakeholders (Committee, Farmers, Manufacturers, Project Team):

- Elicitation Techniques Applied:
 - Interviews → with Mr. Henry, Mr. Pandu, Mr. Dooku, farmers (Peter, Kevin, Ben) & manufacturers.
 - Workshops / JAD sessions → group discussions with committee & technical team.
 - Surveys & Questionnaires → for farmers in remote areas to collect large-scale inputs.
 - Observation / Contextual Inquiry → understanding how farmers currently procure seeds/pesticides.
 - Document Analysis → reviewing existing agriculture product ordering systems/market practices.
 - Brainstorming → with developers & testers for feasibility and innovation.

2. Stakeholder Analysis

- Identify Stakeholders:
 - Committee (Henry, Pandu, Dooku) – Business Owners

- Farmers (Peter, Kevin, Ben, etc.) – End Users
- Manufacturers – Product Providers
- APT IT Solutions team – Project Delivery Team

- **RACI Matrix:**

Activity	Responsible (R)	Accountable (A)	Consulted (C)	Informed (I)
Requirements Gathering	BA	Project Manager	Committee, Farmers, Manufacturers	Delivery Head
Technical Design	Developers, DB Admin, Network Admin	Project Manager	BA, Senior Developer	Committee
Testing	Testers	Project Manager	BA, Developers	Committee
UAT	Farmers, Committee	Committee	BA, Testers	All Stakeholders

3. Documentation Plan

- Business Requirement Document (BRD) → Business goals, objectives, scope.
- Functional Requirement Specification (FRS) → Detailed system requirements, use cases.
- System Requirement Specification (SRS) → Technical details (3-tier architecture, DB, network).
- Use Case Diagrams, Process Flow (BPMN), Data Flow Diagrams (DFD).
- Requirement Traceability Matrix (RTM) → Map requirements → design → test cases.
- Change Request Log → to track CRs formally.
- Test Scenarios & UAT Document → prepared with testers.

4. Sign-off & Approval Process

- After drafting each document (BRD, FRS, SRS), circulate to Committee & PM.
- Conduct review meetings → capture feedback.
- Incorporate changes → finalize document.
- Obtain formal sign-off via email / digital signature (Client Approval Form).

5. Communication Strategy

- Weekly Status Meetings → with Committee & PM.
- Daily Stand-ups → with Development & Testing team.
- Communication Channels:
 - Email → Formal approvals & escalations.
 - MS Teams / Zoom → Meetings & workshops.
 - Project Management Tool (like JIRA / MS Project) → Task tracking & progress.
- Progress Updates:
 - Weekly dashboard → shared with Committee (milestones, risks, issues).
 - Monthly Steering Committee Report → budget, timeline, scope status.

6. Change Request (CR) Management

- Any CR raised by Committee / Farmers / Manufacturers logged in Change Request Log.
- Impact Analysis (Time, Cost, Scope) done by BA + PM + Technical team.
- Submit Change Impact Document → Committee reviews.
- On approval, CR added to backlog and updated in RTM.

7. Progress Tracking & Reporting

- Maintain RTM for requirement coverage.
- Track deliverables against Gantt Chart (shared by PM).
- Provide Committee with:
 - Weekly Requirement Status Report.
 - Monthly Project Progress Report.

Highlight risks, dependencies, blockers.

8. UAT & Client Project Acceptance

- Prepare UAT Test Scenarios mapped to requirements.
- Coordinate UAT with Farmers, Manufacturers, and Committee.
- Collect feedback, log UAT issues, resolve defects.
- Once UAT is successful → Obtain Formal UAT Sign-off & Client Project Acceptance Form from Committee.

Question 3 – 3-Tier Architecture

The 3-Tier Architecture is a well-structured software architecture model that separates the system into three independent layers:

1. Presentation Layer (UI Layer)

This is the top-most layer and is what the user directly interacts with. It includes the user interface (UI), such as a web browser or a mobile application. Its primary function is to display information to the user and collect input from them. In the online agriculture store, this would be the website or mobile app interface that farmers and manufacturers use.

2. Application Layer (Business Logic Layer / Middle Tier)

This middle layer contains the core business logic of the application. It processes user requests, performs calculations, and makes decisions based on the rules of the application. It acts as an intermediary between the Presentation and Data tiers. For the online store, this layer would handle tasks like processing login requests, managing the product catalog, handling search queries, and processing payment transactions.

3. Data Layer (Database Layer)

This is the bottom layer, and it stores and retrieves data. It includes the database server and the database management system (DBMS). The logic tier sends requests to this layer to store or retrieve data. In this project, the data tier would hold information about users (farmers, manufacturers), products (fertilizers, seeds, pesticides), orders, and payment details.

Question 4 – BA Approach Strategy for Framing Questions

Before framing a question for a stakeholder, a Business Analyst should keep the following key points in mind to ensure the questions are effective and yield valuable information:

1. Apply 5W 1H Technique

Every requirement/question should answer at least one of:

- What – What product do you want (fertilizers, seeds, pesticides)?
- Why – Why is this product important (reduce pests, increase yield)?
- Who – Who will use this feature (farmers, manufacturers, committee)?
- When – When do you need this feature (season, delivery timelines)?

- Where – Where will this be used (remote areas, warehouses)?
- How – How should it work (mobile app, website, offline mode)?

2. Frame SMART Questions

Questions should be:

- Specific – Clear and to the point (e.g., “Do you want delivery tracking feature?”).
- Measurable – Can the requirement be tested (e.g., “Within how many days should orders be delivered?”).
- Achievable – Technically and financially possible.
- Relevant – Related to project goals (not irrelevant to farmers’ needs).
- Time-bound – Define timelines (e.g., “By what season should system go live?”).

3. Consider RACI Matrix

- Consider the stakeholder's role based on the RACI chart.
 - For a stakeholder who is **Accountable**, questions should focus on the overall business goals and metrics.
 - For someone who is **Responsible**, questions should be about the specific tasks and details of their role.
 - For a person being **Consulted**, questions should seek their expert opinion and input.

For someone who is merely **Informed**, questions are generally not necessary during elicitation

4. Keep 3-Tier Architecture in Mind

While asking, map your questions to the correct layer:

- Presentation Layer (UI/UX): “How should the mobile app look for farmers?”
- Application Layer (Business Rules): “Should farmers be able to place bulk orders?”

Data Layer (Database): “What product details must be stored (price, expiry, manufacturer)?”

5. UML Diagrams and Models (Use Cases, Activity Diagrams, etc.): Use these as a basis for your questions.

Use Cases: Ask questions to define the "actor" and the "goal." "What is the primary goal of a farmer when they use the search function?"

Activity Diagrams: Frame questions to understand the flow of events and decision points. "What is the step-by-step process a farmer follows from finding a product to completing a purchase? What are the possible exceptions to this flow?"

Page Designs/Models: Use visual aids to get specific feedback. "Looking at this mock-up of the product page, is there any information missing that a farmer would need to make a purchase decision?"

Question 5 – Elicitation Techniques

1. B – Brainstorming

- Conducted with stakeholders/team to generate new ideas and possible solutions.
- Example: Brainstorm with farmers & developers on “features needed in mobile app.”

2. D – Document Analysis

- Reviewing existing documents, reports, manuals, policies.
- Example: Studying government agriculture subsidy guidelines before defining requirements.

3. R – Requirements Workshop (JAD Sessions)

- Structured workshops bringing together stakeholders and technical team.
- Example: Committee + Farmers + Developers in one session to finalize ordering workflow.

4. F – Focus Groups

- A group of selected stakeholders share opinions/feedback.
- Example: Farmers from 2–3 villages giving feedback on prototype screens.

5. O – Observation (Job Shadowing)

- Watching end-users in their environment to understand real processes.
- Example: Observing how farmers currently buy seeds in local shops.

6. W – Workshops

- Broader interactive sessions (could overlap with Requirements Workshop) for requirement discussion.

7. J – Joint Application Development (JAD)

- Special type of workshop where business users and IT work together to define requirements quickly.

8. I – Interviews

- One-to-one or group interviews with stakeholders to gather detailed requirements.
- Example: Interviewing Mr. Pandu (Financial Head) about payment process.

9. P – Prototyping

- Creating mockups/wireframes/screens to gather feedback.
- Example: Showing farmers a sample “product catalog” screen.

10. Q – Questionnaires/Surveys

- Useful when there are many stakeholders.
- Example: Sending surveys to farmers in different districts to capture product buying needs.

11. U – User Stories / Use Cases

- Writing user-centric requirements in “As a ... I want ... So that ...” format or use case diagrams/specs.
- Example: “As a farmer, I want to search seeds by crop type so that I can quickly find suitable products.”

Question 6 – This project Elicitation Techniques

Elicitation Techniques for Online Agriculture Products Store

As a Business Analyst, I would use a **combination of elicitation techniques** to ensure requirements from all stakeholders (Committee, Farmers, Manufacturers, Technical Team) are gathered accurately and completely.

1. Document Analysis

- **Justification:**
 - Review existing documents like agriculture product catalogs, order invoices, farmer subsidies, and online retail platforms.

- Helps understand existing processes and avoid missing critical requirements.
- **Application in Project:**
 - Study existing fertilizer/seed/pesticide catalogs to design the **Product Master Data**.
 - Refer to similar online marketplace workflows for login, catalog, and payment.

2. Brainstorming

- **Justification:**
 - Useful when multiple stakeholders (farmers, manufacturers, committee) need to generate new ideas quickly.
- **Application in Project:**
 - Brainstorm with farmers (Peter, Kevin, Ben) to finalize required features (search, payment gateway, delivery tracking).

Brainstorm with committee (Henry, Pandu, Dooku) on CSR alignment, budget, and priority features.

3. Interviews

- **Justification:**
 - One-to-one discussions to understand specific needs in detail.
- **Application in Project:**
 - Interview Mr. Henry for **business vision** (CSR initiative, target farmers).
 - Interview farmers for **user-level requirements** (easy login, COD, UPI, order confirmation emails).
 - Interview manufacturers for **product upload process**.

4. Prototyping

- **Justification:**
 - Farmers are new to digital platforms, so showing prototypes helps validate requirements early.
- **Application in Project:**
 - Create wireframes/screens for:
 - Login/Registration (with email & password).

- Product Catalog with Search Option.
- Payment Gateway (COD, Debit/Credit, UPI).
- Delivery Tracker screen.

Farmers & committee review → feedback incorporated

5. Workshops / Joint Application Development (JAD)

- **Justification:**
 - Collaborative sessions to bring business (Committee, Farmers) and technical team together.
- **Application in Project:**
 - Workshop with Mr. Vandanam (PM), Developers, Testers + Farmers to finalize **end-to-end workflow**:
 - Login → Browse Products → Add to Cart → Payment → Order Tracking.

6. Questionnaires / Surveys

- **Justification:**
 - To capture inputs from a large group of farmers across multiple villages.
- **Application in Project:**
 - Distribute simple surveys asking farmers:
 - Preferred payment methods?
 - Language preferences for UI?
 - Most critical features (Search, Delivery Tracking, Order History.)

Question 7 – 10 Business Requirements

BR001 – User Registration & Login

System should allow **farmers and manufacturers** to register and login using **email ID and secure password**.

BR002 – Role-based Access

System should provide **separate access rights** for:

- Farmers (Buy products)

- Manufacturers (Upload & manage products)
- Admin/Committee (Monitor and approve activities).

BR003 – Product Catalog

System should provide a **catalog of fertilizers, seeds, and pesticides** uploaded by manufacturers, with images, price, and details.

BR004 – Product Search & Filter

System should allow farmers to **search products** (by name, category, crop type) and **apply filters** (price, manufacturer, availability).

BR005 – Shopping Cart & Buy-Later List

Farmers should be able to **add products to cart** or move them to a **buy-later list** before placing an order.

BR006 – Secure Payment Gateway

System should provide **multiple payment options** – Cash on Delivery (COD), Debit/Credit Card, and UPI.

BR007 – Order Confirmation & Notifications

System should send **order confirmation emails/SMS** and notify farmers about **order status updates** (processing, shipped, delivered).

BR008 – Delivery Tracking

System should provide farmers with **real-time delivery tracking** of their orders.

BR009 – Product Upload by Manufacturers

Manufacturers should be able to **upload, update, and manage product details** (name, price, stock availability, expiry date).

BR010 – Reports & Monitoring (Admin/Committee)

System should provide reports for the **Committee/Admin** to track:

- Number of farmers registered.
- Orders placed and delivered.
- Manufacturer participation.

Question 8 –Assumptions

General Assumptions

1. Farmers and manufacturers will have **basic internet connectivity** in remote areas to access the application.
2. Farmers are **not highly tech-savvy**, so the application should be **simple, multilingual, and mobile-friendly**.
3. Both **Web and Mobile versions** of the application will be developed within the given budget and timeline.
4. The project will strictly follow the **CSR budget of 2 Crores INR and 18 months delivery timeline**.
5. The **3-tier architecture** (Presentation, Business Logic, Database) finalized by the technical team will be used.

User & Access Assumptions

6. Farmers and manufacturers will have to **register and login** before accessing advanced features (buy/upload products).
7. The system will support **role-based access control**: Farmers, Manufacturers, and Admin/Committee.
8. User authentication will be through **email ID and password**, with **future scope for OTP/biometric login**.

Functional Assumptions

9. Farmers can search, filter, and add products to a **shopping cart or buy-later list**.
10. Payment gateway will support **COD, Debit/Credit cards, and UPI**.
11. Delivery tracking will be **integrated with third-party courier services**.
12. Notifications (order status, confirmations) will be sent via **email and SMS**.
13. Manufacturers can upload products with **name, price, stock, image, and description**.
14. Admin/Committee will have access to **reports and dashboards** to monitor transactions and usage.

Non-Functional Assumptions

15. The application will support **minimum 5000 concurrent users** initially, scalable later.
16. System should ensure **data security** with encryption for payments and personal details.

17. Application will support **at least 3 languages (English, Hindi, Telugu as an assumption)** for farmers in rural areas.

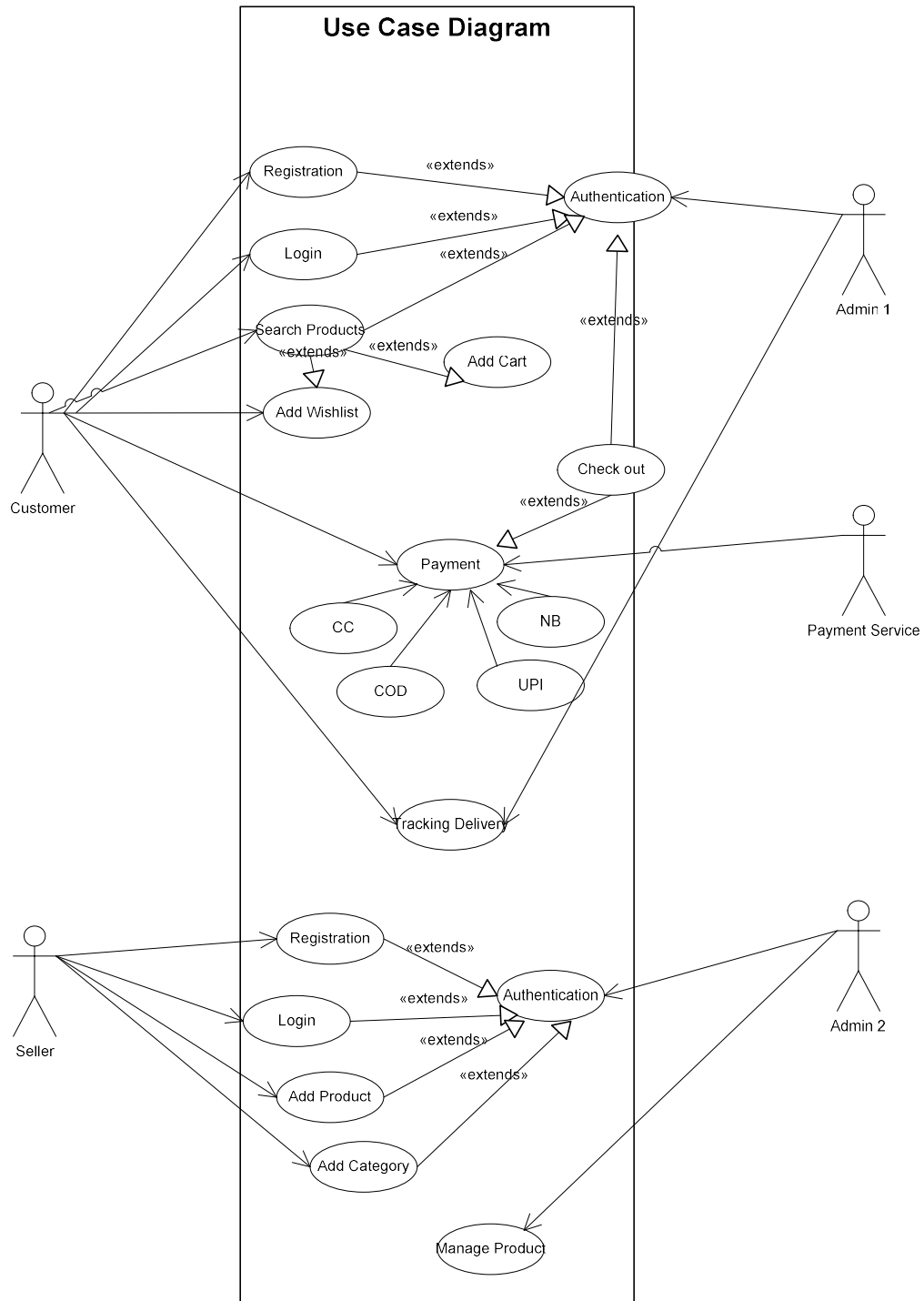
18. The system should be **responsive** and work across devices (desktop, tablet, smartphone).

Question 9 – This project Requirements Priority

1. Prioritization of Requirements

Req ID	Req Name	Description	Proposed Priority (1–10)
BR001	Farmer Search for Products	Farmers should be able to search for fertilizers, seeds, pesticides	10
BR002	Manufacturers Upload Products	Manufacturers should upload & display their products	9
BR003	User Registration & Login	Farmers & manufacturers must create accounts	10
BR004	Product Catalog Display	Farmers should be able to browse the catalog	9
BR005	Shopping Cart & Buy-Later List	Farmers can add products to cart or buy later	7
BR006	Secure Payment Gateway	COD, Debit/Credit, UPI payments	10
BR007	Order Confirmation & Notifications	Send email/SMS updates for order status	8
BR008	Delivery Tracking	Farmers should track their product delivery	7
BR009	Reports & Monitoring (Admin)	Committee/Admin should see usage reports	6
BR010	Multi-language Support	App should support local languages	6

Question 10 – Use Case Diagram



Question 11 – (minimum 5) Use Case Specs

1. Use Case: Create Farmer Account

Use Case ID	UC001
Use Case Name	Create Farmer Account
Actor	Farmer
Description	To allow a new farmer to register on the platform
Preconditions	The farmer has not previously registered. The farmer has a valid email address
Postconditions	A new user account for the farmer is created. The farmer is logged in or receives a confirmation email
Main Success Scenario	The farmer selects the "Create Account" option. The system displays the registration form. The farmer enters a valid email address and a secure password. The system validates the input. The system creates a new user account and stores the details. The system logs the farmer in or sends a confirmation email.
Alternative Flows	Invalid Email: If the email is already in use, the system displays an error message. Invalid Password: If the password does not meet security requirements, the system displays an error message.

2. Use Case: Search for Products

Use Case ID	UC002
Use Case Name	Search for Products
Actor	Farmer
Description	To allow a farmer to find specific products by name or type.
Preconditions	None (can be performed as a guest).
Postconditions	The system displays a list of products matching the search query.
Main Success Scenario	The farmer enters a search query (e.g., "urea fertilizer") in the search bar. The farmer submits the query. The system searches its product database. The system displays a list of matching products with basic details (name, price, manufacturer).

Alternative Flows	No Results: If no products match the query, the system displays a "No results found" message and may suggest related items.
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3. Use Case: Place Order

Use Case ID	UC003
Use Case Name	Place Order
Actor	Farmer
Description	To allow a logged-in farmer to purchase items from their shopping cart.
Preconditions	The farmer is logged in. The shopping cart contains at least one item.
Postconditions	An order is created in the system. The farmer's cart is emptied. The payment process is initiated.
Main Success Scenario	The farmer navigates to the shopping cart. The farmer reviews the items and selects "Proceed to Checkout." The system displays the shipping and payment options. The farmer enters or confirms their shipping address and selects a payment method. The farmer confirms the order. The system creates a new order, deducting the products from inventory (logically or physically), and initiates the payment process.
Alternative Flows	Insufficient Stock: If an item is out of stock, the system notifies the farmer and allows them to remove it before checkout

4. Use Case: Make Payment

Use Case ID	UC004
Use Case Name	Make Payment
Actor	Farmer
Description	To allow the farmer to complete the payment for their order.
Preconditions	An order has been placed. The farmer has selected a payment method.
Postconditions	The payment is processed. The order status is updated to "Paid."
Main Success Scenario	The farmer selects a payment method (e.g., Credit Card). The system redirects the farmer to the secure payment gateway. The farmer enters their payment details. The payment gateway processes the transaction and confirms it with the system.

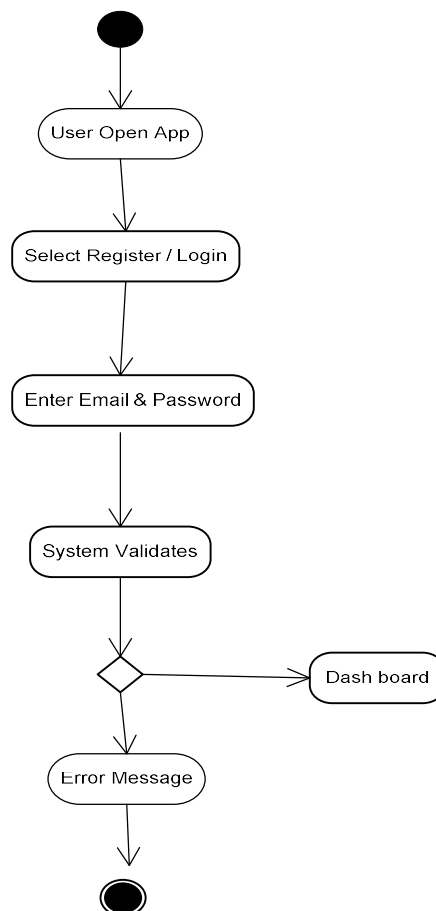
	The system updates the order status to "Paid" and sends an order confirmation email.
Alternative Flows	Payment Failure: If the payment fails, the system displays an error message and allows the farmer to try again or select a different payment method.

5. Use Case: Upload Product Details

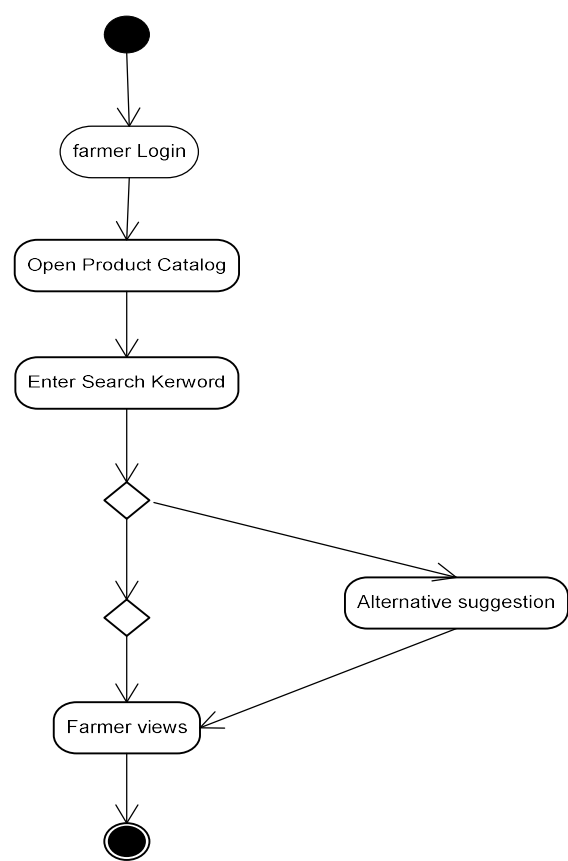
Use Case ID	UC005
Use Case Name	Upload Product Details
Actor	Manufacturer
Description	To allow a manufacturer to add a new product to the store's catalog
Preconditions	The manufacturer is logged in.
Postconditions	The new product is listed in the application's catalog.
Main Success Scenario	The manufacturer navigates to the "Upload Product" section. The system displays a form for product details. The manufacturer enters all required information (name, category, price, description, images). The manufacturer submits the form. The system validates the data and adds the new product to the database.
Alternative Flows	Invalid Data: If the manufacturer enters invalid data (e.g., non-numeric price), the system displays an error message

Question 12 – (minimum 5) Activity Diagrams

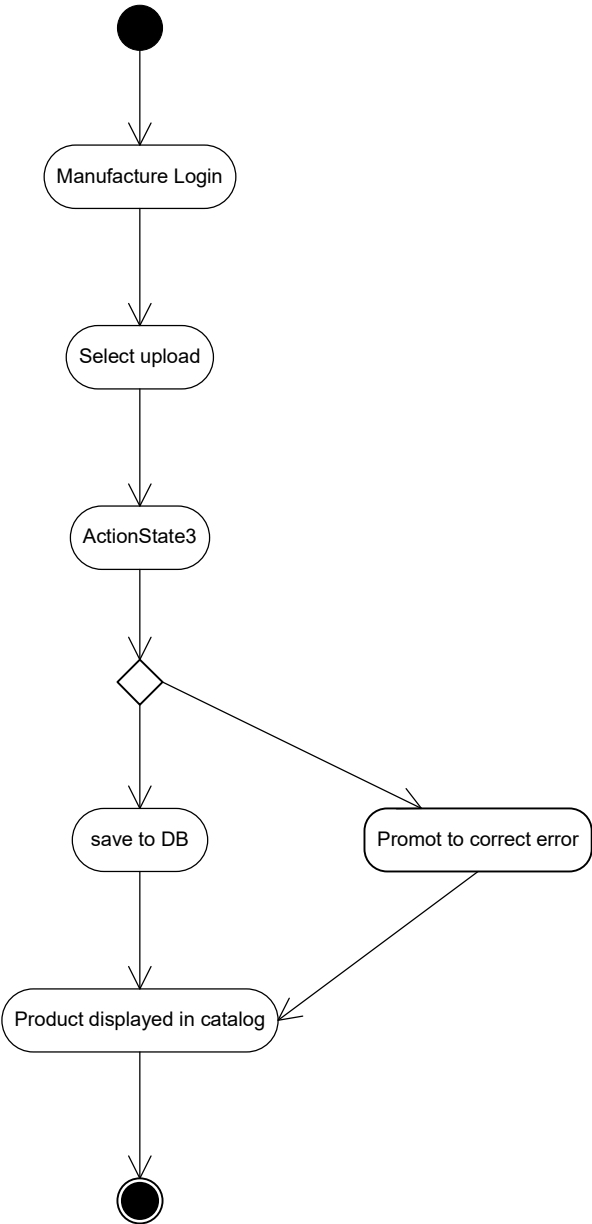
Activity Diagram 1: User Registration/Login



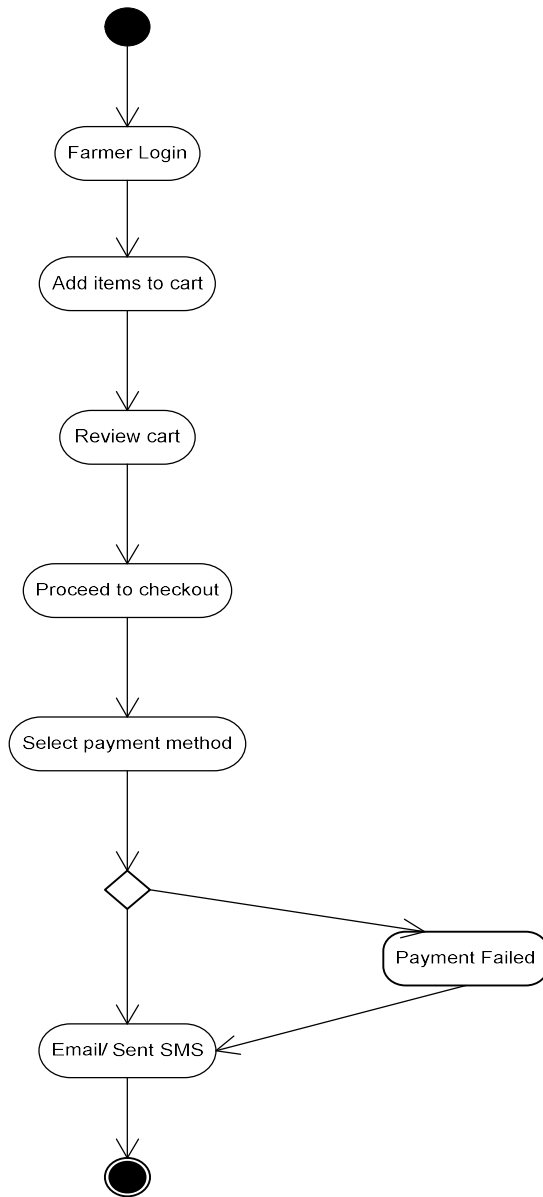
Activity Diagram 2: Search for Products



Activity Diagram 3: Upload Products (Manufacturer)



Activity Diagram 4: Place Order



Activity Diagram 5: Track Order

