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?

- As the Business Analyst (BA) on the APT IT SOLUTIONS team, my knowledge of the four planned **Quarterly Audits (Q1, Q2, Q3, Q4)** centres on the review of the **requirements artifacts, processes, and documentation** to ensure quality, alignment with business goals, and traceability.

1. Key Areas of Audit Focus for the BA

- Audit Area- Requirements Quality
- What the BA Presents/Defends- **Completeness, clarity, and non-ambiguity** of requirements documentation (User Stories, Use Cases, Specifications).
- Project Context- Ensuring the features like product browsing, product details from manufacturers, and order requests are clearly defined.

- Audit Area- Traceability
- What the BA Presents/Defends- **Links between requirements, business objectives, and test cases.** Verification that every requirement can be traced back to a specific stakeholder need.
- Project Context- Demonstrating that features requested by Peter, Kevin, and Ben are documented and traceable to Mr. Henry's goal of facilitating farmers.

- Audit Area- Scope Management
- What the BA Presents/Defends- Reviewing the process for handling **change requests** to ensure they are formally logged, assessed, and approved by the appropriate authority (the Committee: Mr. Henry, Mr. Pandu, and Mr. Dooku).
- Project Context- Confirming that the project remains within the initial scope of the **online agriculture product store/app**.

- Audit Area- Stakeholder Management
- What the BA Presents/Defends- Documentation of **communication, approval, and sign-off records** from key stakeholders.

- Project Context- Evidence of requirements sign-off from the Committee and the farmer stakeholders (Peter, Kevin, and Ben).

2. How the Audit Process Works for the BA

- **Notification & Scope Definition:** I will receive a schedule and a list of specific documents to prepare (e.g., Requirements Traceability Matrix, Change Request Log, latest set of User Stories).
- **Preparation (BA's Task):** I will gather and review all relevant artifacts to ensure they are up-to-date and stored correctly, including any documentation related to the **user-friendly interface** requirement.
- **The Audit Session:** The auditor(s) will interview me and review the documentation. They might ask me to **walk through a critical requirement** (like the process for manufacturers submitting product details) and show the associated acceptance criteria and sign-off.
- **Findings & Rectification:** The audit will result in a formal report detailing **findings** (non-compliance) and **recommendations**. I will be responsible for addressing any findings related to my documentation or processes within a specified timeframe.

These regular, quarterly audits help the project maintain its alignment with the **Budget (2 Crores INR)** and **18 months Duration** and ensures the final product meets the needs of the stakeholders, particularly the remote area farmers.

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)

Business Analysis Approach Strategy

Project: Online Agriculture Product Store (SOONY CSR Initiative) **Company:** APT IT SOLUTIONS **BA Lead:** [Your Name/Placeholder] **Date:** October 2025

1. Project Overview and BA Scope

This strategy defines the methodology for business analysis activities over the 18-month project duration, ensuring the delivered application facilitates remote farmers in purchasing seeds, pesticides, and fertilizers directly from manufacturers. The core objective is to deliver a **user-friendly** and highly functional application that meets the vision of Mr. Henry and the requirements of the primary user group (Peter, Kevin, and Ben).

2. Business Analysis Process Steps

The BA workflow will follow a structured, iterative approach, ensuring requirements are captured, validated, and managed throughout the project lifecycle:

1. **Plan:** Define the scope and approach, conduct initial stakeholder analysis, and establish the communication and change management processes.
2. **Elicit:** Gather, capture, and confirm detailed product and feature requirements from all stakeholders.

3. **Analyse & Document:** Model and structure the requirements into formal documentation (User Stories, Specifications) and ensure non-functional requirements (user-friendliness, security) are defined.
4. **Validate & Verify:** Review documented requirements with the stakeholders (especially the farmers) and the development team to secure approval and technical feasibility.
5. **Manage & Govern:** Handle change requests, maintain the Requirements Traceability Matrix (RTM), and support UAT and deployment.

3. Stakeholder Analysis and RACI Matrix

Stakeholder analysis will be conducted using the **RACI** (Responsible, Accountable, Consulted, Informed) matrix to clearly define roles, and the **Influence, Liking, Strategy (ILS)** mapping to manage expectations

- Stakeholder Group- **Project Sponsor**
- Key Individuals- Mr. Henry (SOONY)
- Role in Project- Visionary, Ultimate Authority
- Primary RACI Level- **A** (Accountable)

- Stakeholder Group- **The Committee**
- Key Individuals- Mr. Pandu (Financial Head), Mr. Dooku (Project Coordinator)
- Role in Project- Approval, Budget/Scope Control
- Primary RACI Level- **A/C** (Accountable/Consulted)

- Stakeholder Group- **Project Manager**
- Key Individuals- Mr. Vandanam (APT IT)
- Role in Project- Executing the BA Plan
- Primary RACI Level- **R** (Responsible)

- Stakeholder Group- **Primary users/Experts**
- Key Individuals- Peter, Kevin, Ben (Farmers)
- Role in Project- Requirement Definition, Validation
- Primary RACI Level- **C** (Consulted)

- Stakeholder Group- **Development Team**
- Key Individuals- Ms. Juhi, Mr. Teyson, Ms Lucie, etc.
- Role in Project- Requirement Implementation
- Primary RACI Level- **R** (Responsible)

- Stakeholder Group- **Vendor Management**
- Key Individuals- Mr. Karthik (Delivery Head)
- Role in Project- project commitment
- Primary RACI level - **I** (Informed)

4. Elicitation Techniques: -

Given the involvement of remote farmers, elicitation will combine structured workshops with user-centric techniques: -

- Technique- **Interviews**
- Purpose- Detailed capture of specific pain points (fertilizers, seeds, pesticides) and daily workflow.
- Stakeholders Involved- Peter, Kevin, Ben (on-site if required)

- Technique- **Prototyping/Wireframing**
- Purpose- Visualizing the "user-friendly" application interface and flow (browsing, selection, request). **Mandatory for early farmer feedback.**
- Stakeholders Involved- Peter, Kevin, Ben, The Committee

- Technique- **Workshops/JAD Sessions**
- Purpose- Defining product data models (inputs from manufacturers) and securing joint sign-off on the scope.
- Stakeholders Involved- The Committee, Mr. Vandanam, Ms. Juhi

- Technique- **Document Analysis**
- Purpose- Reviewing existing product catalogues or competitor websites to benchmark features and product data fields.
- Stakeholders Involved- APT IT Team, Manufacturers (as needed)

5. BA Documentation and Artifacts

- Document- **Business Requirements Document (BRD)**
- Purpose- High-level business needs, objectives, and scope statement.
- Audience- The Committee, Mr. Karthik

- Document- **Requirements Specification Document (RSD)**
- Purpose- Detailed functional requirements, non-functional requirements (security, performance, user-friendliness).
- Audience- Development Team (Java Developers), Testers (Mr. Jason, Ms. Alekya)

- Document- **User Stories & Acceptance Criteria**
- Purpose- Defining small, testable chunks of functionality (e.g., *As a Farmer, I want to browse products by crop type, so I can find relevant seeds.*)
- Audience- Development Team, Mr. Jason, Ms. Alekya

- Document- **Requirements Traceability Matrix (RTM)**
- Purpose- Linking requirements to business goals, design components, and test cases. **Used heavily during Quarterly Audits (Q1, Q2, Q3, Q4).**
- Audience- Mr. Vandanam, Mr. Dooku, Auditors

6. Document Sign-off and Client Approval Process

- **Document Sign-off Process (Internal)**
  - **Draft: BA (Myself) creates the document (e.g., RSD).**
  - **Internal Review: Document is reviewed by the Project Manager (Mr. Vandanam) and Senior Java Developer (Ms. Juhi) for feasibility.**
  - **Stakeholder Consultation: Document is shared with Peter, Kevin, and Ben for functional confirmation.**

- **B. Client Approval Process (Formal)**
  - **Submission:** The finalized document is sent to Mr. Dooku (Project Coordinator) for formal review.
  - **Committee Review:** The Committee (Mr. Henry, Mr. Pandu, Mr. Dooku) reviews and provides feedback within a defined SLA.

- **Formal Approval: Mr. Henry (Accountable)** provides the final approval/sign-off, authorizing the development team to proceed. This approval is documented and stored centrally.

7.Communication Channels

- Channel- **Weekly Progress Report**
- Frequency- Weekly
- Audience- Mr. Vandanam, Mr. Karthik
- Purpose- detailed project status, BA activities, risks.

- Channel- **Executive Steering Summary**
- Frequency- Monthly
- Audience- The Committee (Henry, Pandu, Dooku)
- Purpose- High-level status, budget consumption, milestone progress, and key decisions required.

- Channel- **Instant Messaging/Email**
- Frequency- Daily/As-needed
- Audience- Developers, DB Admin (John), Network Admin (Mike), Testers (Jason, Alekya)
- Purpose- Urgent clarifications on requirements and testing support.

- Channel- **Scheduled Meetings**
- Frequency- Bi-weekly
- Audience- Peter, Kevin, Ben
- Purpose- Requirement validation and user feedback sessions

8. Handling Change Requests (CR)

A formal Change Control Process is mandatory to protect the scope, budget, and 18-month timeline.

- **CR Submission:** Any stakeholder (including the farmers) submits a formal Change Request detailing the proposed modification.
- **CR Analysis (BA's Role):** I will analyze the request, determining the impact on existing requirements, effort (by consulting developers), schedule, and cost.

- **CR Review & Decision:** The impact analysis is presented to **The Committee**. Since Mr. Pandu is the Financial Head, cost and budget impact are critical. The Committee will issue a **Go/No-Go** decision.
- **Implementation:** If approved, I update the relevant documentation (RSD, RTM) and the Project Manager (Mr. Vandanam) schedules the task for development.

9. Progress Update to Stakeholders

Progress is updated via the defined channels (Section 7), focusing on different metrics for different audiences:

- **APT IT Internal (Mr. Vandanam, Mr. Karthik):** Focus on percentage completion of requirements, testing coverage, and technical milestones.
- **The Committee (Mr. Henry, Mr. Pandu, Mr. Dooku):** Focus on the business value delivered and comparison against the baseline schedule and budget (2 Crores INR). Reports will include a 'traffic light' status (Red/Amber/Green) for easy consumption.

10. UAT and Client Project Acceptance Form Sign-of

User Acceptance Testing (UAT)

- Participants: The farmer stakeholders (Peter, Kevin, and Ben) are the primary UAT testers.
- Process: UAT is performed on the final, integrated application to ensure it meets the initial requirements (e.g., farmers can successfully browse, select, and request products).
- Exit Criteria: All critical test cases (defined by the BA and Testers) must pass, and the application must be deemed "user-friendly" by the farmers.

Client Project Acceptance Form Sign-of

- Final Authority: The form must be signed by Mr. Henry (Project Sponsor), confirming that SOONY accepts the final delivered product as meeting the stated business objectives and requirements.
- Confirmation: The document will be countersigned by Mr. Dooku (Project Coordinator) and Mr. Karthik (Delivery Head) to formally close the project phase.

Question 3 – 3-Tier Architecture - 5 Marks

Explain and illustrate 3-tier architecture?

Detailed Explanation of 3-Tier Architecture

Project: Online Agriculture Product Store (SOONY CSR Initiative)

1. Definition and Rationale

- The **3-Tier Architecture** is a well-established and highly recommended pattern for designing software applications, particularly those requiring high scalability, security, and maintainability, such as the proposed online agriculture product store. It achieves this by logically and often physically separating the application into three interconnected tiers: the Presentation Tier, the Application (or Business Logic) Tier, and the Data Tier.
- The fundamental rationale for using this architecture is the **separation of concerns (SoC)**. By ensuring that each tier is dedicated to a specific function, we isolate changes, manage resource utilization efficiently, and prevent functional dependencies that often lead to complexity and instability in monolithic systems.

2. Detailed Breakdown of Each Tier

A. Tier 1: The Presentation Tier (Client Layer)

- This is the topmost layer of the application, serving as the user interface (UI) and user experience (UX). Its primary function is to render information to the user and translate user actions (like clicks or input) into logical requests for the Application Tier.
- **Technology Focus:** Web (HTML, CSS, JavaScript) or Mobile application frontends.
- **Role in SOONY Project:** This tier is the direct interface used by the **remote area farmers** like Peter, Kevin, and Ben. It must be highly **user-friendly**, as specified in the case study. It handles:
    - Displaying the list of products (seeds, fertilizers, pesticides).
    - Accepting search and filter criteria.
    - Gathering farmer credentials during login.
    - Collecting the final purchase request and delivery location details.

B. Tier 2: The Application / Business Logic Tier (Middle Layer)

- This is the core functional brain of the application, housing the business logic, rules, and workflows. It sits between the Presentation Tier and the Data Tier, acting as the mediator and controller. This tier ensures that data integrity is maintained and business policies are enforced.

- **Technology Focus:** Server-side programming languages (Java, handled by Ms. Juhi, Mr. Teyson, and team), application servers, and APIs.
- **Role in SOONY Project:** This is the most complex layer, responsible for implementing the key functionality defined by the project requirements:
    - **Manufacturer Interaction:** Handling the logic for **manufacturers** to submit, validate, and update product details.
    - **Order Processing:** Validating farmer order requests, checking product availability (by querying Tier 3), and calculating final costs.
    - **Communication Logic:** Managing the direct communication channel and transaction processes between farmers and companies.
    - **Security Enforcement:** Authenticating users and enforcing access control rules before allowing requests to proceed to the Data Tier.

C. Tier 3: The Data Tier (Database Layer)

- This layer includes the physical storage mechanisms, such as database servers and file storage, managed by the **DB Admin, John**. It is responsible for data persistence, storage, retrieval, and manipulation.
- **Communication Rule:** Critically, this tier **only communicates with the Application Tier (Tier 2)**. It never communicates directly with the Presentation Tier (Tier 1), which is a key security feature.
- **Technology Focus:** Database Management Systems (DBMS) like SQL or NoSQL databases.
- **Role in SOONY Project:** This tier is the secure repository for all persistent data:
    - Storing product catalogues, inventory levels, and specifications for fertilizers, seeds, and pesticides.
    - Maintaining records of all farmer accounts, manufacturer accounts, and sales transactions.
    - Storing project configuration data necessary for the Application Tier to function.

3. Benefits Justification for the Project

The 3-Tier Architecture is specifically chosen to address the project's complexity, budget constraints, and long-term vision:

- Benefit- **High Scalability**
- Description and Impact on SOONY Project- Each tier can be scaled independently of the others. If the application becomes highly popular among remote farmers, only the **Application Tier (Tier 2)** needs to be reinforced or clustered, efficiently managing the **18 months Duration** and preventing unnecessary infrastructure costs across all layers.

- Benefit- **Enhanced Security**
- Description and Impact on SOONY Project- The physical separation provides a robust security layer. By preventing direct public access to the **Data Tier (Tier 3)**, we minimize the risk of data breaches, securing sensitive manufacturer and farmer transaction data. This addresses Mr. Henry's need for a stable, professional application.

- Benefit- **Increased Flexibility & Maintainability**
- Description and Impact on SOONY Project- Changes in one layer do not require changes in the others. For example, if a developer needs to refactor the **Java business logic (Tier 2)**, the farmer's **Presentation Tier (Tier 1)** interface remains unaffected. This speeds up maintenance and reduces the risk during deployment, keeping the project within budget.

- Benefit- **Improved Performance**
- Description and Impact on SOONY Project- Processing load is distributed across servers (Tiers 2 and 3). The Application Tier manages connection pooling and data validation, which results in faster response times for farmers browsing products or placing orders, thereby improving the perceived **user-friendliness**.

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)

1. Introduction: The Strategic Role of Question Framing

- Effective question framing is the most critical activity for a Business Analyst. For the SOONY online store, where requirements must reconcile the high-level vision of Mr. Henry's Committee with the practical needs of remote farmers (Peter, Kevin, Ben), a systematic strategy is mandatory. The goal is to move beyond mere information gathering to **elicitation that validates existing assumptions, resolves conflicts, and generates requirements that are SMART and architecturally sound.**

2. Pre-Question Analysis and Contextualization

Before framing a single question, the BA must first analyse the project landscape using established frameworks:

Stakeholder Analysis (RACI)

- Questions must be tailored to the individual's role and decision-making authority as defined in the **RACI Matrix**.
- **Accountable (A) & Responsible (R):** Questions directed at **Mr. Henry** (A) or the **Development Team** (R) must seek decisions or confirmation of execution feasibility (e.g., "Do we proceed with this feature?").
- **Consulted (C):** Questions for the end-users (Peter, Kevin, Ben) must focus on deep, functional details and pain points (e.g., "What specific data points are missing from your current seed procurement process?").
- **Informed (I):** Questions for stakeholders like **Mr. Karthik** are usually status-based or high-level (e.g., "Are there any external organizational policy changes we should be aware of?"). **Architectural Mapping (3-Tier Architecture)**

Architectural Mapping (3-Tier Architecture)

- The question must clearly indicate which of the three architectural tiers the answer pertains to, ensuring the correct domain expert is engaged and the requirement is documented appropriately.
- **Presentation Tier:** Questions focus on usability and UX. (e.g., "To satisfy the 'user-friendly' requirement, should the 'Request to Buy' option appear before or after product selection?")
- **Application/Logic Tier:** Questions focus on business rules. (e.g., "What validation logic must be applied when a manufacturer uploads pesticide details?")
- **Data Tier:** Questions target data structure, privacy, and storage requirements. (e.g., "DB Admin John, how should the relationship between a fertilizer product and its supplier be defined to optimize retrieval speed?")

3.Question Formulation Frameworks

The following frameworks are used simultaneously to construct comprehensive and actionable questions:

The 5W1H (Who, What, Where, When, why, How)

The 5W1H framework ensures the captured requirement is complete across all necessary dimensions:

- Element- **WHAT**
- Purpose in Framing Questions- To define the functional output or feature.
- Contextual Application (Online Store)- "Exactly **what** format must the manufacturer's product specification adhere to?"

- Element- **WHY**
- Purpose in Framing Questions- To establish the business value and justification.
- Contextual Application (Online Store)- "If we implement feature X, **why** does that solve Peter's difficulty in procuring fertilizers?"

- Element- **WHO**
- Purpose in Framing Questions- To identify actors, system roles, and permissions.
- Contextual Application (Online Store)- "**Who** has permission to change the delivery status from 'Requested' to 'Shipped'?"

- Element- **WHERE**
- Purpose in Framing Questions- To establish location, context, or interface placement.
- Contextual Application (Online Store)- "**Where** in the application workflow is the best place to present the estimated delivery date?"

- Element- **WHEN**
- Purpose in Framing Questions- To define timing, frequency, or sequencing.
- Contextual Application (Online Store)- "**When** is the earliest point a farmer can cancel a product request without penalty?"

- Element- **HOW**
- Purpose in Framing Questions- To capture non-functional needs or implementation method.

- Contextual Application (Online Store)- "**How** should the application notify the farmer of a price change (e.g., SMS, email, in-app)? **(Communication Channels)**"

4.SMART Criteria Validation

All questions should be framed to elicit answers that directly lead to **SMART** requirements. If the stakeholder provides a vague answer, the BA must use follow-up questions guided by SMART.

- **S**pecific: Eliciting exact details. (e.g., "You mentioned lack of pesticides. Can you specify the **top three** pest types you are trying to mitigate?")
- **M**easurable: Eliciting metrics for acceptance criteria. (e.g., "Mr. Dooku, to meet our performance goal, what is the **maximum acceptable time** for a product page to load?")
- **T**ime-bound: Eliciting timing constraints. (e.g., "Mr. Pandu, should we commit to a **Quarterly** progress update, or a monthly one?")

5.**Leveraging BA Artifacts in Questioning**

The BA must integrate existing or planned project documentation into questions to confirm and validate the artifacts themselves:

Artifact Type- **Use Cases / Use Case Specs**

Purpose of Questioning-To Walk through and validate the defined system boundaries and actor goals.

BA Activity during Elicitation- "Based on this 'Request Product' Use Case, is there a scenario where a farmer might select two different manufacturers in the same request?"

- Artifact Type- **Activity Diagrams / Models**
- Purpose of Questioning- To confirm the workflow logic and process flow defined by the BA.
- BA Activity during Elicitation- "Does this **Activity Diagram** accurately represent the sequence of events from submitting product details to the details appearing on the browsing screen?"

- Artifact Type- **Page Designs / Wireframes**
- Purpose of Questioning- Crucial for confirming the 'user-friendly' requirement before development.
- BA Activity during Elicitation- "Looking at this **Page Design** , would this button placement make it easy for you to complete a purchase on a mobile device?"

- Artifact Type- **Change Requests (CR)**
- Purpose of Questioning- To assess impact based on the input of the requestor.
- BA Activity during Elicitation- "If we approve this change, **Mr. Pandu**, what is the specific cost increase we should factor into the **2 Crore INR budget**?"

By consistently applying these frameworks, the Business Analyst ensures that every question asked to the stakeholders—from the technical experts like Ms. Juhi and Mr. Mike, to the business leaders like the Committee, and the end-users like Peter, Kevin, and Ben—yields concrete, verifiable, and project-aligned information, thereby reducing scope creep and risk.

Question 5 – Elicitation Techniques - 6 Marks

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

Comprehensive Explanation of Elicitation Techniques

- **Project:** Online Agriculture Product Store (SOONY CSR Initiative) **Marks:** 6 **Acronym Key:** B-Brainstorming, D-Document Analysis, R-Reviews, F-Focus Groups, O-Observation, W-Workshops, J-JAD, I-Interviews, P-Prototyping, Q-Questionnaires, U-User Stories

1. Introduction to Elicitation

- Elicitation is the systematic discovery and retrieval of information from stakeholders and other sources. For the online agriculture store, a blend of techniques is necessary to reconcile the high-level vision (Mr. Henry) with granular user needs (farmers Peter, Kevin, Ben) and technical constraints (Ms. Juhi's team).
- The selection of a technique is determined by the required depth, the stakeholder's availability, and the type of information being sought (functional vs. non-functional requirements).

2. Interactive and Collaborative Techniques (I, W, J)

These methods involve direct engagement with stakeholders to foster creativity, build consensus, and capture dynamic requirements.

I-Interviews

- **Definition:** A formal, structured, or informal one-on-one conversation between the BA and a stakeholder.
- **Application:** Essential for gathering detailed, subjective information and understanding the motivations (**Why**) behind a requirement. Used with primary users (Peter, Kevin, Ben) to deeply understand their current pain points in procuring fertilizers and seeds.

W-Workshops

- **Definition:** A structured, time-boxed session involving multiple stakeholders from different functional areas (cross-functional).
- **Application:** Effective for rapid decision-making, securing consensus, and defining high-level scope. Used with the **Committee** (Mr. Henry, Mr. Dooku) to approve the final list of product features and secure high-level sign-off on the **BRD (Business Requirements Document)**.

J-Joint Application Development (JAD)

- **Definition:** A highly intensive, accelerated type of workshop, typically lasting multiple days, designed to capture detailed requirements and design solutions collaboratively.
- **Application:** Ideal for complex areas, such as designing the data flow and security parameters. The BA would use this with **Ms. Juhi (Development Lead)** and **DB Admin John** to finalize the architecture for product data uploads and storage (Tier 3).

3. Investigative and Research Techniques (D, O, Q, F)

These methods focus on analysing existing documentation and studying user behaviour to uncover latent or existing requirements.

D-Document Analysis

- **Definition:** Reviewing and analysing existing business documents, forms, reports, policies, and regulations.
- **Application:** Used to establish baseline facts and technical requirements without engaging stakeholders. The BA would analyse existing **pesticide regulation documents** and manufacturer product catalogues to define the required fields for data submission.

O-Observation

- **Definition:** Directly watching a user perform their activities in their work environment (active or passive).
- **Application:** Valuable for understanding the 'As-Is' process and identifying undocumented workflow steps or hidden inefficiencies. Observing farmers attempting current procurement methods reveals pain points that drive the 'user-friendly' requirement.

Q-Questionnaires and Surveys

- **Definition:** Gathering quantitative or simple qualitative data from a large group of stakeholders.
- **Application:** Used for low-detail, high-volume data collection. For instance, surveying a broad sample of remote farmers about their preferred mobile device or internet connectivity speed to define **Non-Functional Requirements** (performance, compatibility).

F-Focus Groups

- **Definition:** Bringing together a representative sample of end-users or customers to discuss and debate specific topics or features.
- **Application:** Used to gauge collective sentiment on a new feature or design choice. The BA could host a Focus Group of manufacturers to discuss potential pricing models for the platform.

4. Modelling, Visualization, and Validation Techniques (P, B, R, U)

These techniques are used to confirm understanding, visualize concepts, and formalize the elicited information.

P-Prototyping

- **Definition:** Creating working models or visual mock-ups (wireframes/Page Designs) of the user interface.
- **Application: Crucial** for the 'user-friendly' requirement. Prototyping allows farmers to interact with a model of the **Presentation Tier** (Tier 1), confirming the usability and design before coding begins, preventing expensive rework.

B-Brainstorming

- **Definition:** A technique used to generate a large number of ideas rapidly from a group.
- **Application:** Used with the APT IT internal team (developers, network admin Mike) to generate unique solutions for complex problems, such as integrating payment systems or optimizing logistics for remote village delivery.

R-Requirements Reviews (Validation)

- **Definition:** A formal process where stakeholders inspect the documented requirements for errors, completeness, and clarity before approval.
- **Application:** The final step before development. The BA presents the **RSD (Requirements Specification Document)** to the Committee to secure formal sign-off, locking down the scope and managing the **Change Control Process**.

U-User Stories

- **Definition:** A specific format for writing a requirement from the end-user's perspective: As a [Role], I want [Goal], *so* that [Reason/Value].
- **Application:** While often seen as a documentation artifact, the *process* of framing the requirement as a User Story during elicitation ensures the BA always confirms the **business value** with the stakeholder. (e.g., As a Farmer, I want to filter seeds by yield per acre, so that I can maximize my crop productivity.)

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.

1. Introduction and Strategic Justification

- The selection of these four elicitation techniques is strategically tailored to address the core challenges of the SOONY project: ensuring the product is **user-friendly** (as required by Mr. Henry and Ben), managing factual **product data** (fertilizers, seeds, pesticides), and formalizing the **complex transaction process** (payment, delivery tracking). This combination ensures that requirements are gathered across all three architectural tiers—Presentation, Logic, and Data.

2. Prototyping

- **Justification:** Prototyping is essential for validating the **Presentation Tier** (Tier 1) and mitigating the significant risk associated with poor User Experience (UX). It directly addresses the requirement for an "easy-to-use" system, a priority for stakeholders like **Ben** and **Kevin**.

Application to Project:

- The Business Analyst will create low-fidelity **Page Designs (wireframes)** for the **login and account creation interface** (to satisfy Peter's requirement) and the **product catalogue/search feature** (satisfying Kevin and BR001).
- These prototypes will be tested with the key farmer stakeholders (**Peter, Kevin, Ben**). This process allows the BA to secure early visual confirmation on element placement and navigation flow, ensuring the design of the payment gateway options (COD, UPI, Credit/Debit) is intuitive, thereby reducing costly rework during the development phase.

3. Document Analysis

- **Justification:** This technique is selected for its efficiency in gathering non-subjective, factual, and regulatory information. It prevents wasting stakeholder time by asking for data that already exists in a structured format.

Application to Project:

- **Data Tier (Tier 3) Foundation:** Document Analysis will be used to review existing **manufacturer product catalogues, government regulatory forms, and industry standards** for fertilizers, seeds, and pesticides.
- The information gathered defines the **mandatory data fields and formats** that manufacturers must submit via their login (fulfilling BR002). This rigorous process ensures the integrity of the data stored and guarantees that the correct, legally required information is displayed to the farmers.

4. Brainstorming

- **Justification:** Brainstorming is necessary for solving the project's complex, interconnected problems that lack clear pre-defined solutions, specifically those impacting the **Application/Logic Tier** (Tier 2).

Application to Project:

- The BA will facilitate brainstorming sessions with the internal **APT IT team** (Development, Network, and DB teams).
- This technique will be used to generate and evaluate multiple technical options for complex requirements, such as integrating the secure **multiple payment options** (COD, Credit/Debit, UPI, as requested by Ben) and designing the **delivery tracking system** (Kevin's requirement). It accelerates problem-

solving and ensures the implementation solution is cost-effective and feasible within the project's technical constraints.

5. Use Case Specifications

- **Justification:** Use Case Specifications (UCS) represent the most formal and crucial technique for transitioning from requirement elicitation to development and testing. They are necessary to provide the development team with a clear, sequential blueprint for system execution.

Application to Project:

- The BA will translate all gathered stakeholder requirements into detailed **Use Case Specifications**. For example, the **'Farmer Places Order'** Use Case will be documented to formally detail every step, including: the basic flow (searching, selecting product), the alternative flow (login/account creation as required by Peter), and the exception flow (payment failure).
- **Final Acceptance Control:** Most critically, the UCS document serves as the **test script** for **User Acceptance Testing (UAT)**. Successful execution of these formalized steps by the farmers (**Peter, Kevin, Ben**) provides the evidence required for Mr. Henry to sign the final **Client Project Acceptance Form**.

Question 7 – 10 Business Requirements- 10 Marks

Make suitable Assumptions and identify at least 10 Business Requirements.

1. Project Assumptions

- To proceed with defining the functional scope and to provide a stable foundation for the Business Requirements (BRs), the following critical assumptions are established. These assumptions clarify constraints related to the budget, technology, and operational boundaries.
- **Assumption A1: Financial Currency.** It is assumed that all product pricing, order calculations, payment processing, and final invoicing within the application **must be conducted using INR (Indian Rupee)** as the base currency. This directly affects the complexity of the Application Tier (Tier 2).
- **Assumption A2: Data Maintenance Responsibility.** It is assumed that the **manufacturers are solely responsible** for the accuracy, compliance status, and real-time maintenance of their product specifications and inventory levels.

The system will provide the mechanism for input, but data integrity relies on the manufacturer's input (supporting BR002).

- **Assumption A3: Delivery Tracking Integration.** It is assumed that APT IT SOLUTIONS will be required to integrate with a **single, predefined third-party logistics provider (LSP)** to enable the multi-stage delivery tracking feature requested by Mr. Henry and Kevin (supporting BR009).
- **Assumption A4: Platform Accessibility.** Given the user base consists of remote farmers, it is assumed that the application **must be fully responsive and optimized for mobile devices**, though desktop access is also permitted. This informs the design of the Presentation Tier (Tier 1).
- **Assumption A5: Data Security Protocols.** Due to the handling of login credentials and financial transaction details (Peter's and Ben's requirements), it is assumed that **strong encryption, secure storage of user data, and compliance with standard data protection regulations** are Non-Functional Requirements of the highest priority.

2. Identified Business Requirements (BRs)

- The following requirements are derived from the overall project objective, the vision of Mr. Henry, and the specific needs articulated by the key farmer stakeholders (Peter, Kevin, Ben). These BRs define the **what** of the system.

User and Account Management

- **BR003: Secure Account Creation:** The system **must** enable new farmers to securely create individual user accounts by submitting a unique email address and creating a strong, system-verified password. This requirement, driven by Peter, ensures user identification and personalization.
- **BR004: Mandatory Authentication:** All system users, including both Farmers and Manufacturers, **must** be required to successfully log in before gaining access to product listing management, pricing information, transaction features, or private user dashboards. This aligns with Mr. Henry's vision for controlled access.
- **BR007: Account Management:** The system **must** provide a dedicated user interface allowing any logged-in user to securely update their registration details, manage their password, and view a summary of their account activity.

Product Catalogue and Search Functionality

- **BR001: Comprehensive Product Discovery:** Farmers **must** be able to browse the entire available product catalogue (fertilizers, seeds, pesticides) and utilize advanced search functionality to filter results based on keywords, product category, manufacturer name, and price range. This is a core requirement driven by Kevin and the overall project goal.
- **BR002: Manufacturer Product Management:** Manufacturers **must** be able to access a secure, dedicated portal to upload, edit, manage inventory levels, and

update the pricing for their specific product listings, ensuring the data displayed to farmers is current.

- **BR005: Detailed Product Specifications:** The system **must** display a dedicated product detail page for every item, which includes mandatory fields for pricing (per A1), current stock availability, detailed product specifications (chemical composition, application, yield data), and manufacturer contact information.
- **BR008: Buy Later Functionality (Wishlist):** The system **must** provide a feature allowing a logged-in farmer to save selected products to a persistent 'Buy Later' list (Wishlist) that remains available across multiple login sessions, as requested by Peter.

Transaction, Payment, and Logistics

- **BR006: Multi-Option Payment Gateway:** The application **must** support a secure multi-option payment gateway for order finalization, explicitly offering **Cash-on-Delivery (COD)**, **Credit/Debit Card processing**, and **UPI payment** methods to meet Ben's demand for an improved user payment experience.
- **BR009: Real-Time Delivery Tracking:** The application **must** provide a dedicated interface linked to the order detail page that displays the real-time status and whereabouts of a placed order, from the moment of shipment initiation through to final delivery completion, fulfilling Kevin's requirement (supported by A3).
- **BR010: Automated Order Confirmation:** Upon successful placement and payment confirmation of any order, the system **must** automatically trigger an email notification to the farmer containing a detailed order summary, a transaction receipt, and a link to the delivery tracking page.
- **BR012: Comprehensive Cost Calculation:** The system **must** be capable of dynamically calculating and displaying the total final order cost, including the product price, applicable taxes, and **variable delivery charges** based on the farmer’s registered location (pin code) and the total weight/volume of the products in the basket.
- **BR013: Order History and Records:** The system **must** allow a logged-in farmer to access a complete history of their finalized orders, detailing quantities purchased, payment method used, and the delivery date, enabling effective record-keeping.

Question 8 –Assumptions- 5 Marks

List your assumptions

1. Role and Rationale of Assumptions

- Assumptions are critical statements of fact that are believed to be true and stable for the duration of the project, allowing the Business Analyst to proceed with the definition of requirements and scope. Their primary purpose is **risk mitigation** and **scope control**. If an assumption proves false, it triggers a mandatory Change Request (CR) due to the resulting impact on the project schedule, budget, or technical architecture.
- For the SOONY project, these five assumptions are essential to solidify expectations across financial, technical, and operational domains.

2. Detailed List and Justification of Assumptions

A1: Financial Currency Constraint

- **Assumption Statement:** All product pricing, order calculations, and final transaction summaries **must be conducted exclusively using the Indian Rupee (INR)** as the base currency.
- **Justification:** This assumption is necessary to simplify the financial aspects of the **Application/Logic Tier (Tier 2)**. By standardizing the currency, we avoid the complexity of dynamic foreign exchange rate integration, ensuring seamless calculation of delivery charges (BR012) and enabling reliable implementation of the payment gateway (BR006) as per the expectations of Mr. Pandu.

A2: Data Ownership and Integrity

- **Assumption Statement:** The **manufacturers are solely responsible** for the accuracy, compliance, and real-time maintenance of their product specifications, inventory levels, and pricing data once uploaded to the platform.
- **Justification:** This defines the operational boundary for **Business Requirement BR002** (Manufacturer upload portal). The project scope limits APT IT SOLUTIONS to providing the secure storage mechanism in the **Data Tier (Tier 3)**. Assuming manufacturer ownership manages the risk of liability associated with incorrect product information (e.g., mislabelled pesticides) and simplifies the requirement for real-time inventory updates.

A3: Logistics Integration Model

- **Assumption Statement:** The required order **delivery tracking feature (BR009)** will be implemented through integration with a **single, predefined third-party logistics provider's (LSP) API**, rather than building a custom tracking solution.

- **Justification:** This is a crucial scope control mechanism. Building a custom tracking system would be extremely costly and time-consuming, violating the project's budget and timeline constraints. By assuming integration with an existing LSP, the project significantly reduces the complexity required in the **Application/Logic Tier (Tier 2)**, making Kevin's delivery tracker requirement feasible.

A4: Mobile-First Platform Accessibility

- **Assumption Statement:** The application **must be designed and optimized to be fully responsive for mobile devices** (smartphones) as the primary access method for remote farmers, while also supporting desktop access.
- **Justification:** This assumption directly addresses the "user-friendly" mandate and the context of the key stakeholders (**Peter, Kevin, Ben**). It dictates the design philosophy of the **Presentation Tier (Tier 1)**, ensuring that the **Page Designs** prioritize fluid layouts, touch target size, and simple navigation appropriate for a mobile-centric user base.

A5: Security as Highest Non-Functional Priority

- **Assumption Statement:** Strong **data security protocols**, including encryption, secure login mechanisms, and compliance with data privacy standards, are treated as the **highest priority Non-Functional Requirement (NFR)** throughout the project.
- **Justification:** This addresses the inherent risks associated with handling sensitive information gathered from users. Given that the system handles **Peter's login credentials** and **Ben's payment processing details** (Credit/Debit/UPI), this assumption ensures that security is factored into every phase of development and architecture, mitigating the risk of data breaches and preserving user trust.

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

Req ID	Req Name	Req Description	Priority
BR001	Farmer Search for Products	Farmers should be able to search for available products in fertilizers, seeds, pesticides	8
BR002	Manufacturers upload their Products	Manufacturers should be able to upload and display their products in the application	8

Once the requirements are finalized, as a business analyst, one of the major roles is to act as a liaison between the client and the project team. To gather the requirements correctly from the client side and then to deliver those requirements to the project team in a way they understand. To make the project team understand the requirements, you need to convert those requirements into UML diagrams and screen mock-ups.

1. Prioritization Methodology and Approach

- Requirements prioritization is a critical task for the Business Analyst (BA), acting as the liaison to manage the project roadmap and mitigate risk within the constrained **18-month duration** and **2 Crore INR budget**. For the SOONY project, a numerical scale of 1 to 10 is used, with **10 being the highest priority**. This approach is rooted in the MoSCoW methodology, ensuring we clearly define the Minimum Viable Product (MVP).

The priority ranking is consistently determined by three overarching factors:

- **Launch Criticality:** Can the business conduct its primary revenue-generating activity (selling products) without this feature?

- **Security & Compliance:** Does this feature address mandatory security protocols or legal requirements, such as payment compliance (referencing **A5 Security Assumption**)?
- **Core Stakeholder Satisfaction (CX):** How essential is the feature to the key users (Peter, Kevin, Ben) for basic usability and trust?

2. Priority Assignments and Justification by Tier

The full scale (1 to 10) is strategically utilized to manage stakeholder expectations and control scope creep by formally deferring low-value features.

A. Tier 1: Must-Have Requirements (Priority 9 & 10)

- These are the core, revenue-enabling features that are essential for the system to launch and function legally. Failure in any of these areas is considered a launch-blocking defect.
- **Priority 10:** The highest priority is assigned to requirements that involve **money and authentication**. **BR006 (Multi-Option Payment Gateway)** receives a 10 because without working payment options (COD, UPI, Card), the store cannot process sales. Similarly, **BR004 (Mandatory Login)** receives a 10 because controlled access is mandatory for security, order tracking, and enforcing the **A5 Security Assumption**.
- **Priority 9:** These are foundational features that enable the core business activity. **BR001 (Farmer Search for Products)** is a 9, as it is the primary method for product discovery (**Kevin's request**). **BR002 (Manufacturer Upload Portal)** is also a 9 because the store is empty without a mechanism for manufacturers to ingest product data. Furthermore, **BR003 (Secure Account Creation)** and **BR012 (Comprehensive Cost Calculation)** are rated 9, as they must function immediately before the Priority 10 features (Login and Payment) can operate.

B. Tier 2: Should-Have Requirements (Priority 7 & 8)

- These features are necessary to build immediate customer trust and provide reliable confirmation, without which the customer experience will be severely degraded, even if the transaction itself processes.
- **Priority 8:** These features focus on post-purchase trust. **BR009 (Real-Time Delivery Tracking)** is an 8 because it is essential for customer satisfaction (**Kevin's request**) and relies on successful integration under the **A3 Logistics Assumption**. **BR011 (Automated Order Confirmation)** also receives an 8, as providing an immediate receipt and tracking link is critical for managing customer anxiety.
- **Priority 7: BR005 (Detailed Product Specifications)** is rated 7. We need sufficient product information to inform the purchase, but the full, complex refinement of every non-critical data field can be staged slightly later than the core transaction features.

C. Tier 3: Could-Have / Deferred Requirements (Priority 1-6)

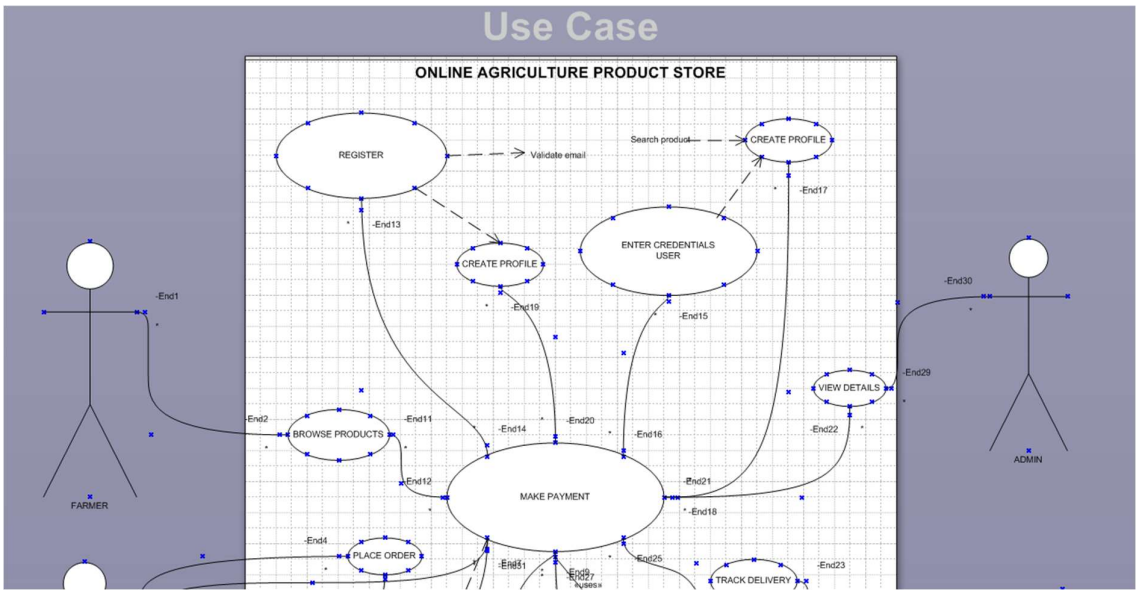
- These features enhance usability, support administrative tasks, or provide convenience. They are the first to be simplified or deferred if the project timeline is placed at risk.
- **Priority 6: BR007 (Account Management / Edit)** allows users to update personal information. While necessary, a basic functional interface is sufficient for V1.
- **Priority 5: BR013 (Order History View)** is essential for customer record-keeping, but the display can be a basic summary in the MVP and is not a transaction blocker.
- **Priority 4: BR008 (Buy Later List / Wishlist)** is a convenience feature (**Peter's request**). Since it generates no immediate revenue and does not block the core flow, it is a strong candidate for deferral if resource constraints arise.
- **Priority 3: BR010 (Manufacturer Certifications)** is important for compliance validation but is technically complex. The initial system can launch with basic data, allowing this verification layer to be implemented post-MVP.

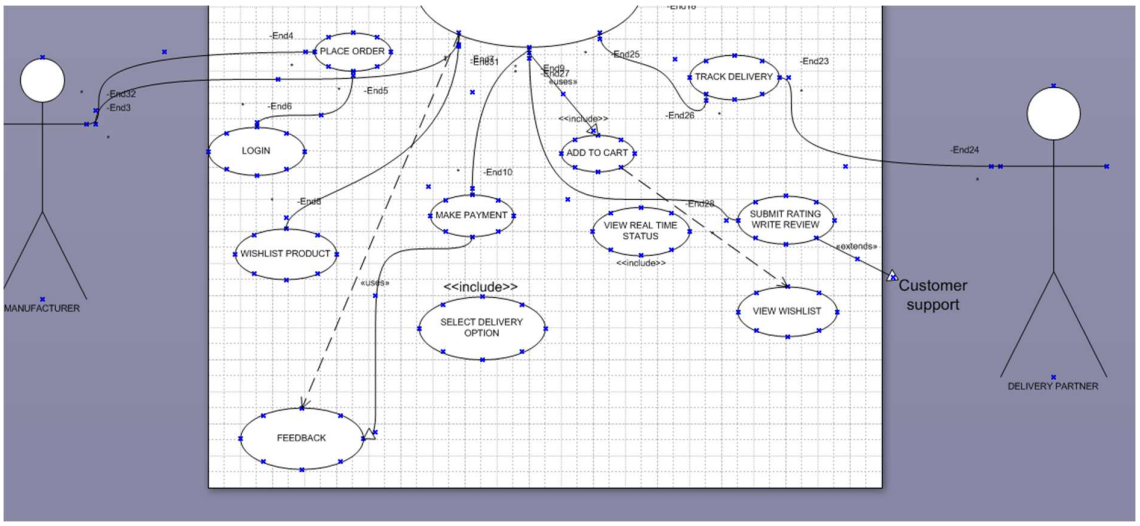
3. BA Role as Liaison and Deliverables

- Once these priorities are formally approved by Mr. Henry, the Business Analyst acts as the liaison, converting the abstract requirements into executable development artifacts. The **Priority 10 and 9 requirements** are immediately translated into two critical deliverables for the project team:
- **UML Diagrams:** This includes **Activity Diagrams** to show the step-by-step logic of the high-priority **BR006 Payment Process** and **Use Case Diagrams** to model the system boundaries for **BR001/BR003**.
- **Screen Mock-ups:** Detailed **Page Designs** (**Prototypes**) are created for the core user flows, such as the login page (**BR004**) and the catalog/search interface (**BR001**), providing the necessary blueprint for the **Presentation Tier** to the development team.

Question 10 – Use Case Diagram - 10 Marks

Draw use case diagram





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

Prepare use case specs for all use cases

UC-001: Search & Browse Catalogue (BR001)

- The **Goal** of this fundamental Use Case is to allow the **Farmer** (Peter, Kevin, Ben) to effectively navigate and filter the available products. The **Pre-Condition** simply requires the Actor to have access to the Presentation Tier interface. The **Main Success Scenario** begins with the System displaying all products, sorted by relevance. The Actor then applies keywords or filters, prompting the System to query the Data Tier (Tier 3) via the Application Tier (Tier 2). The results are refreshed, allowing the Actor to click through to detailed specifications. The **post-condition** confirms the successful display of product details and ensures the System captures search metrics for future analytics. This Use Case is **<<extended>>** by the **View Buy Later List (UC-007)**, allowing the Actor to optionally save items during their browsing session.

UC-002: Create Account (BR003)

- The **Goal** is to allow any new user (Farmer or Manufacturer) to securely register and obtain system credentials. The **Actor** must not be logged in and must be on the registration page (**Pre-Condition**). The **Main Success Scenario** requires the Actor to select a role type, enter required contact and address details, and submit the form. Crucially, the Application Tier performs **validation checks** on all entered fields. Upon successful validation, a new user record is created in the Data Tier (Tier 3), and a confirmation notification is sent. The

post-condition guarantees the existence of a new, unverified user record, leading the Actor back to the login screen. This process enforces **Business Rule BR003**, which mandates the capture of the user's role for access control.

UC-003: Login (BR004)

- The **Goal** is to securely authenticate the Actor and initiate a valid session for accessing transactional features. The **Actor** (Farmer or Manufacturer) is expected to be on the login page, ready to provide credentials (**Pre-Condition**). In the **Main Success Scenario**, the Actor enters their credentials, which are transmitted to the Application Tier (Tier 2). Tier 2 verifies these credentials against the Data Tier (Tier 3). If successful, a secure session token is generated, and the Actor is redirected to their personalized dashboard. The **post-condition** confirms that the Actor is authenticated, a valid session token exists, and the Actor's identity and role are available for authorization checks. This Use Case implements **Business Rule BR004**, which states that Login is mandatory for all sensitive system access.

UC-004: Place Order

- The **Goal** is to allow the Farmer to submit a formal request for products, initiating the fulfilment process. The **Pre-Conditions** require the Actor to be authenticated (UC-003 completed) and to have items in the shopping cart. The **Main Success Scenario** starts with the Actor proceeding to checkout, where the System calculates the final cost. The Actor confirms the order details. The flow then includes two mandatory dependencies: a security check via **<<includes>> Login (UC-003)** (if the session expired) and the initiation of **<<includes>> Make Payment (UC-005)**. Following successful payment, the System updates inventory, creates a unique Order ID in Tier 3, and presents the confirmation screen. The **post-condition** is the existence of a confirmed order record, deducted inventory, and notifications sent to both the Farmer and the Manufacturer.

UC-005: Make Payment (BR006)

- This Use Case is dedicated to processing the financial transaction required by the **Place Order (UC-004)** Use Case. The **Pre-Condition** is that the final order cost has been confirmed by the calling Use Case. The **Main Success Scenario** involves the System presenting payment options, the Actor entering details, and the Application Tier interfacing with the external Payment Gateway. Upon the Payment Gateway returning a success code, the System records the transaction ID and status within the order record. The **post-condition** is that the payment status is updated to 'Paid', and control is returned to the **Place Order** Use Case. This enforces **Business Rule BR006**, which requires payment to be secured before final inventory changes occur.

UC-006: Upload & Manage Products (BR002)

- The **Goal** is to enable the **Manufacturer** to submit new product details and maintain existing inventory/pricing data. The **Pre-Conditions** require the Actor to be authenticated (UC-003 completed) and possess the 'Manufacturer' role. The **Main Success Scenario** involves the Actor accessing the Product Management dashboard and selecting to add or edit a product. After filling out the form, the flow again **<<includes>> Login (UC-003)** for a security check. The System performs **mandatory validation (BR002)** on all input fields (e.g., price format, stock count) before updating or inserting the product record into the Data Tier (Tier 3). The **post-condition** is that the product catalogue data is successfully updated and made visible to Farmers.

UC-007: View Buy Later List (BR008)

- The **Goal** is to provide the Farmer with an optional mechanism to save products for later review. This Use Case **<<extends>> Search & Browse Catalogue (UC-001)**, meaning it is an optional feature. The **Pre-Condition** is that the Actor is authenticated (UC-003 completed). The **Main Success Scenario** occurs when the Actor, while browsing, clicks the 'Add to Buy Later' button. The System saves the product ID linked to the Actor's user ID in Tier 3. Later, the Actor can navigate to the dedicated list page, where the System retrieves and displays the saved products, giving the Actor options to move items to the cart or delete them. The **post-condition** is that the saved product list is updated in Tier 3.

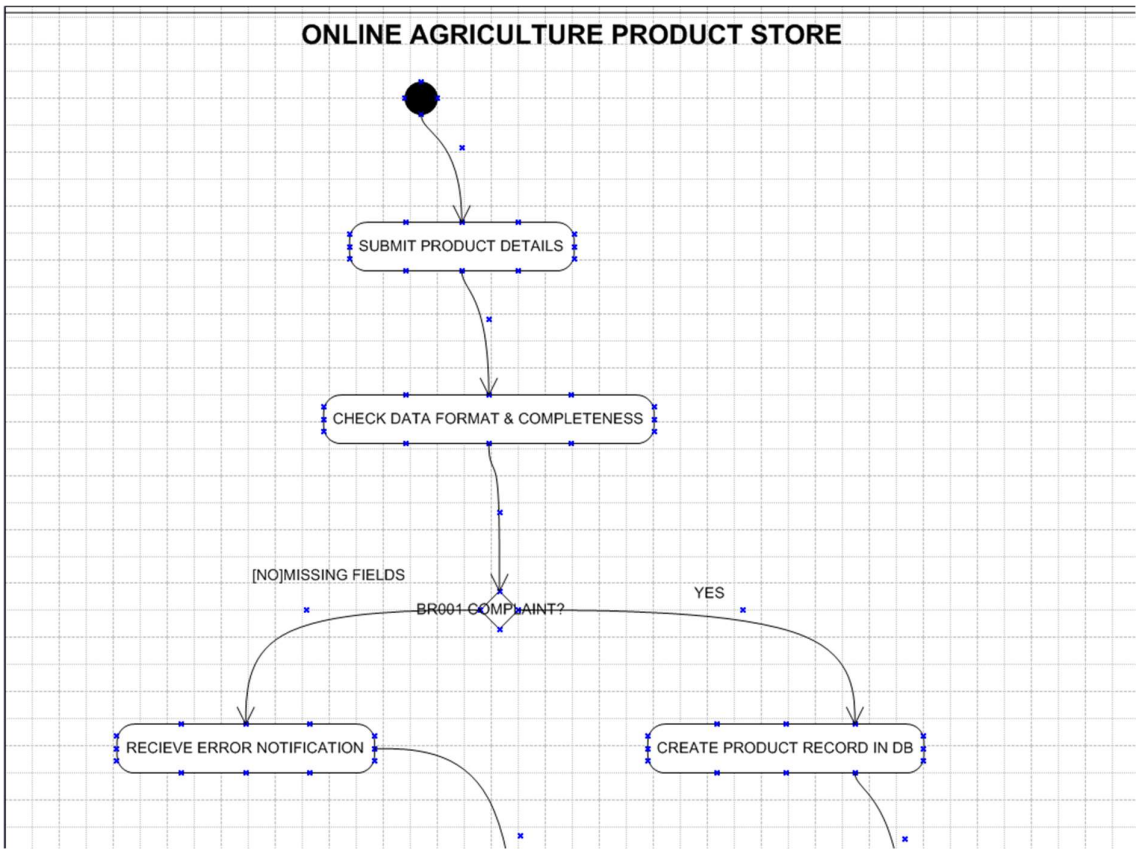
UC-008: Track Order Status (BR009)

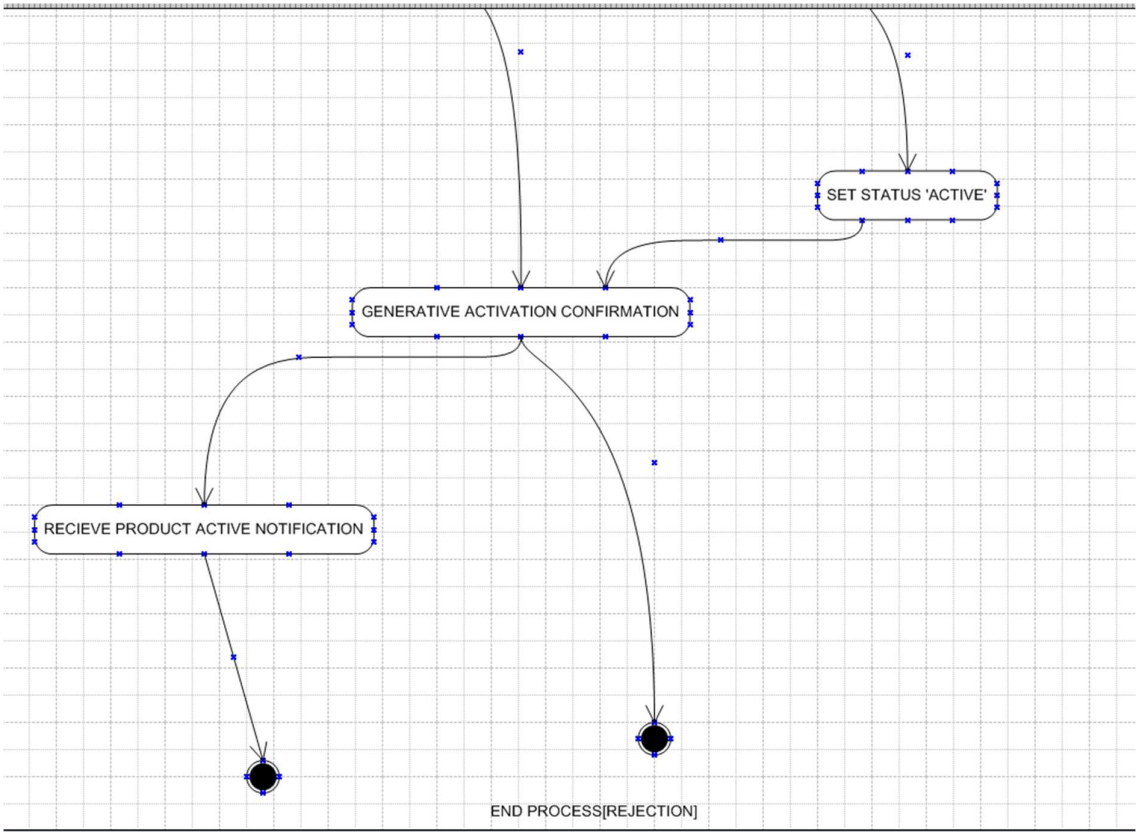
- The **Goal** is to allow the Farmer to view the current progress and status of any placed order. The **Pre-Conditions** require the Actor to be authenticated and have at least one existing order record. The **Main Success Scenario** begins with the Actor navigating to the 'Order History' section. The System retrieves the list of past orders from Tier 3. Upon selection of an Order ID, the System displays the current status (e.g., Shipped, Delivered) and delivery details. The **post-condition** confirms the Farmer is informed of the order status. This Use Case relies on **Business Rule BR009**, which states that order status must be dynamically updated by the Application Tier based on logistics inputs.

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

Activity diagrams

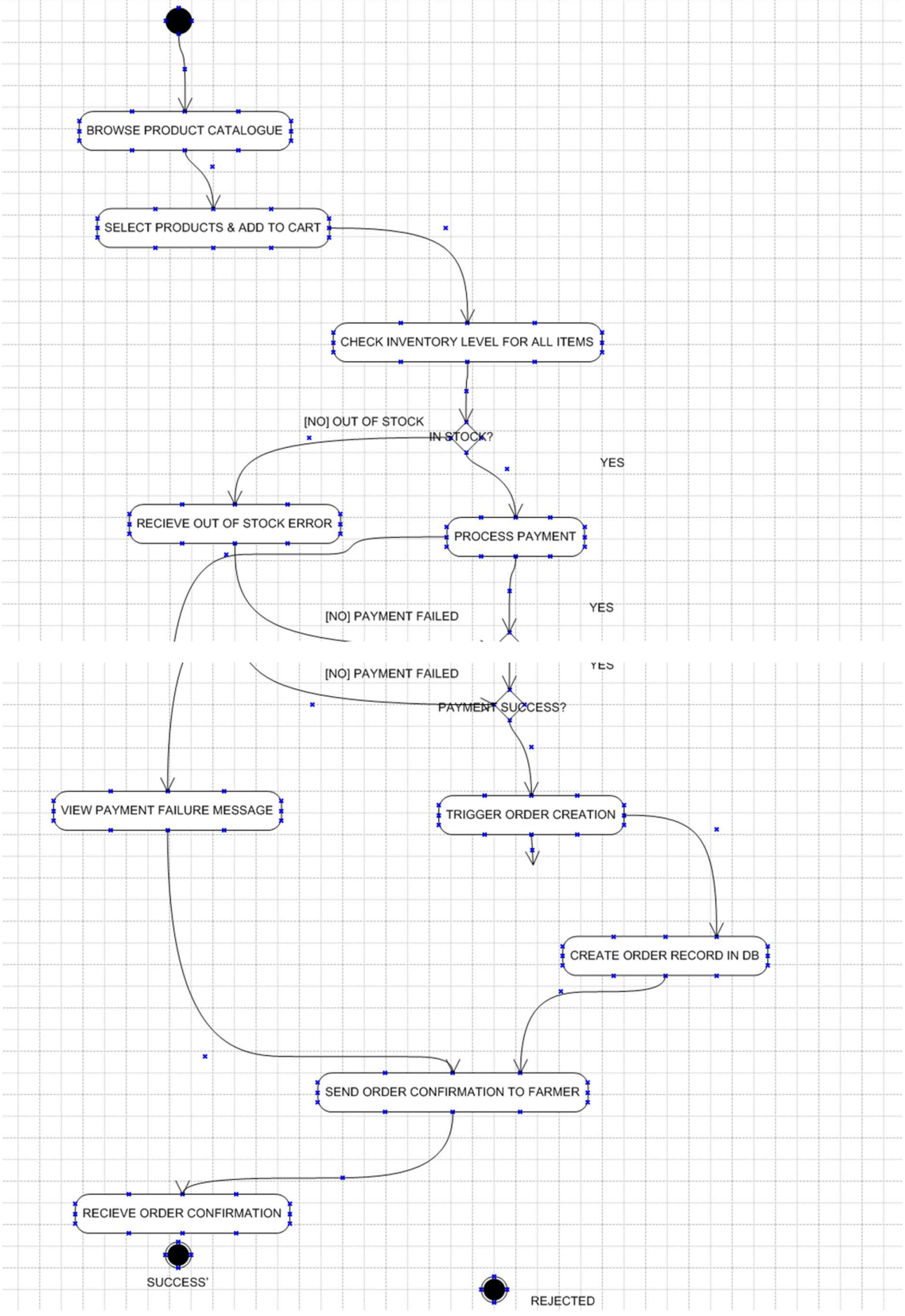
1) **PRODUCT SUBMISSION AND VALIDATION**



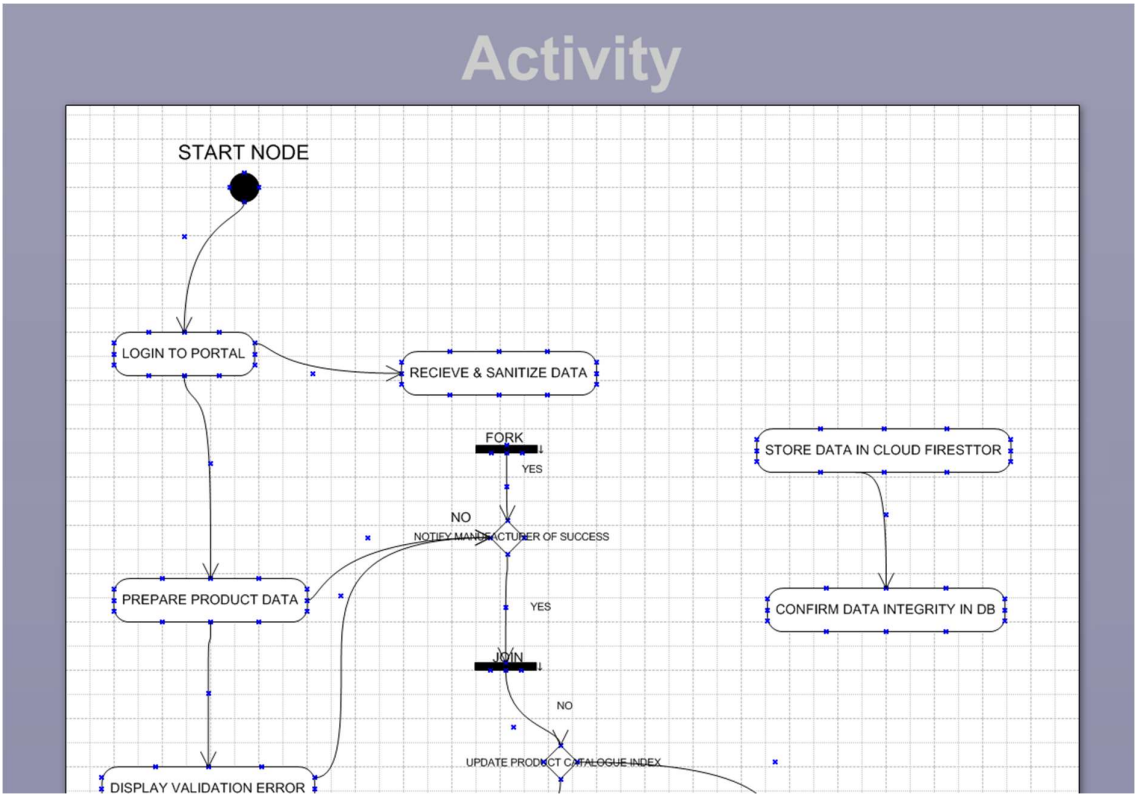


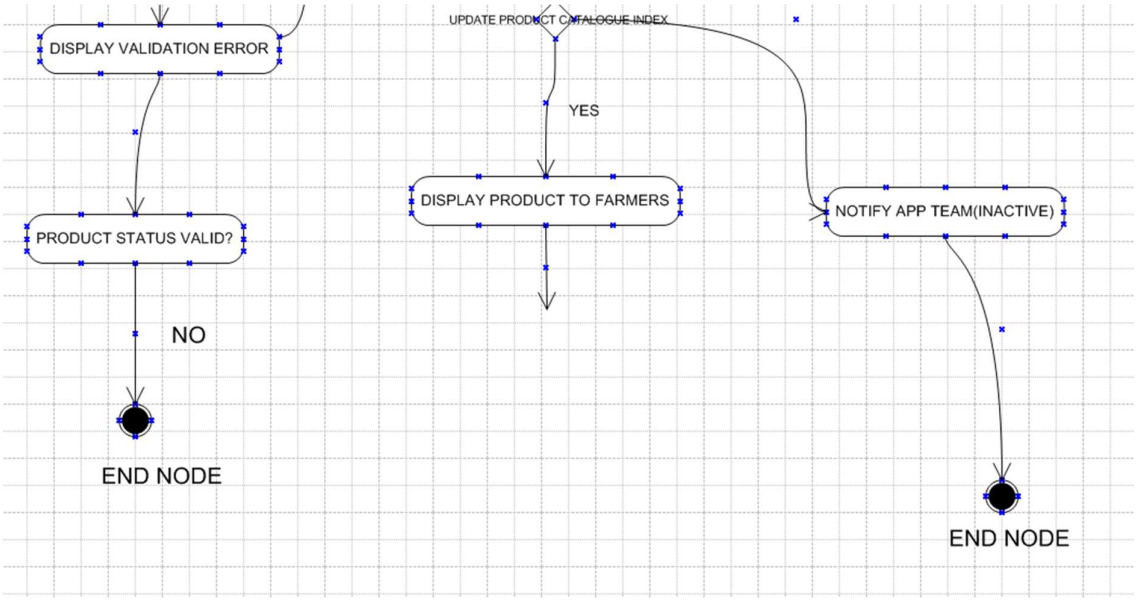
2)FARMER ORDER PLACEMENT

ONLINE AGRICULTURE PRODUCT STORE

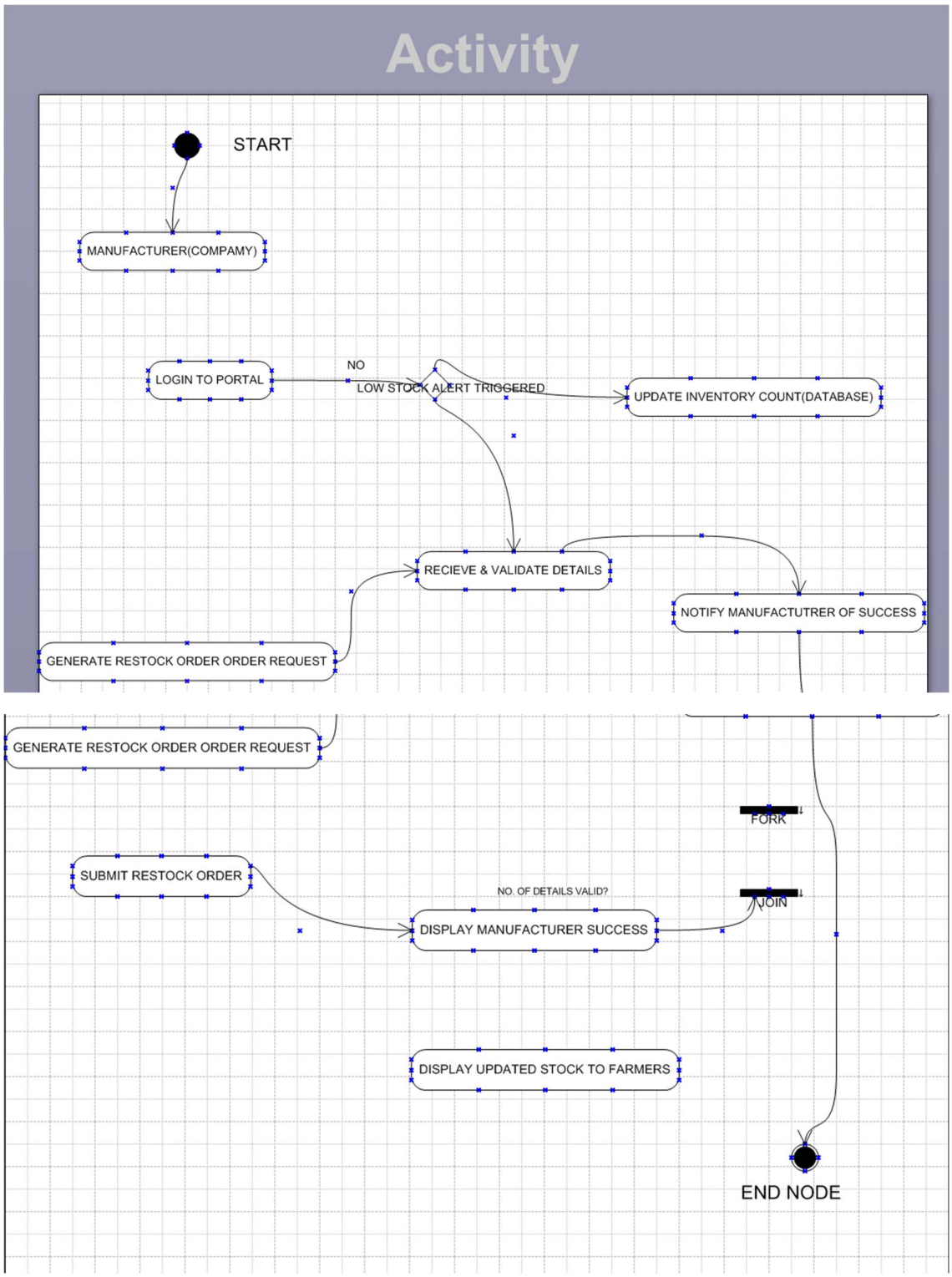


3)

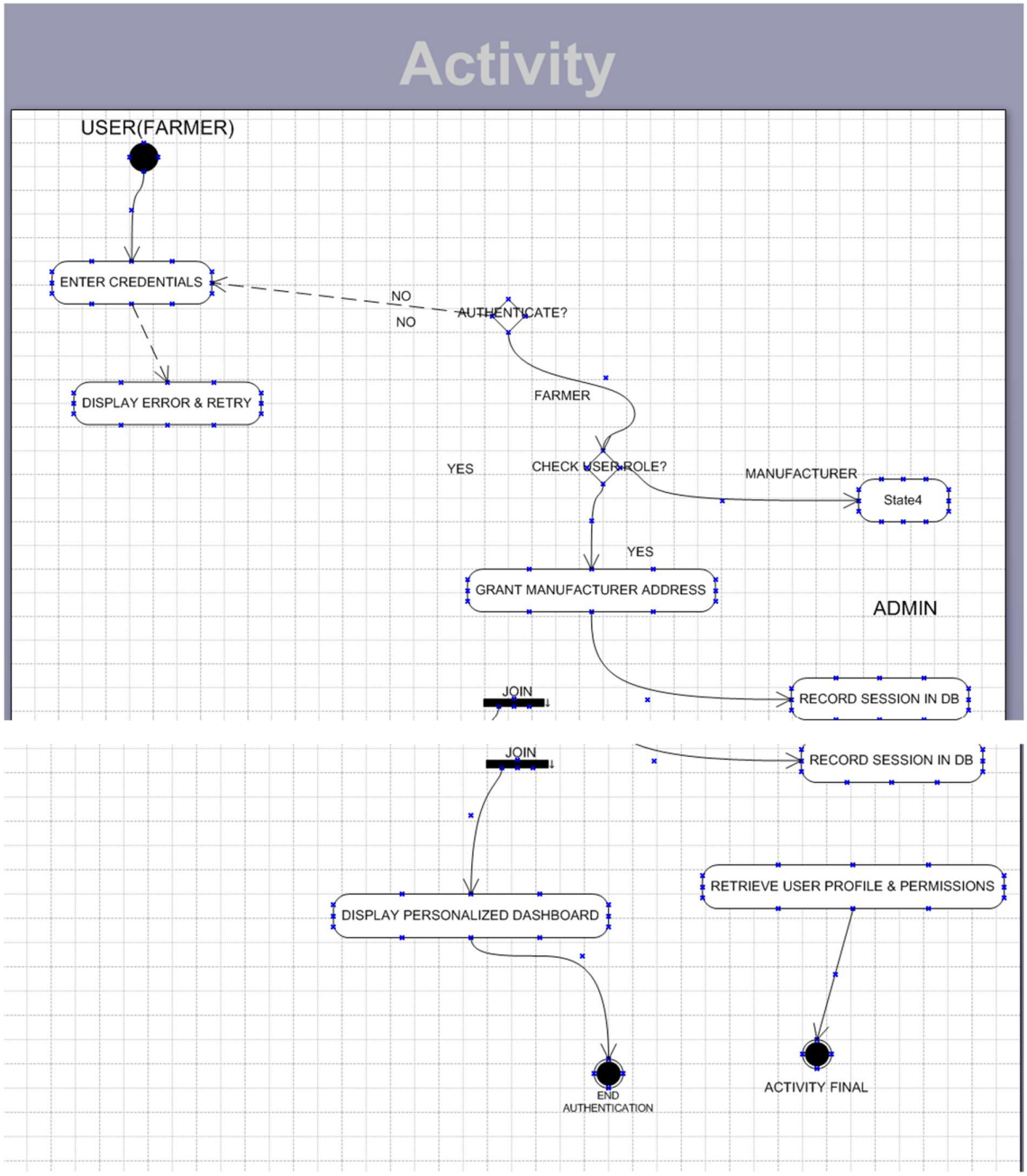

Activity
START NODE
LOGIN TO PORTAL
RECIEVE & SANITIZE DATA
FORK
YES
NO
NOTIFY MANUFACTURER OF SUCCESS
PREPARE PRODUCT DATA
YES
JOIN
NO
UPDATE PRODUCT CATALOGUE INDEX
DISPLAY VALIDATION ERROR
STORE DATA IN CLOUD FIRESTTOR
CONFIRM DATA INTEGRITY IN DB


DISPLAY VALIDATION ERROR
PRODUCT STATUS VALID?
NO
END NODE
UPDATE PRODUCT CATALOGUE INDEX
YES
DISPLAY PRODUCT TO FARMERS
NOTIFY APP TEAM(INACTIVE)
END NODE

4)INVENTORY MANAGEMENT & RESTOCK FLOW



5)USER AUTHENTICATION & ROLE ASSIGNMENT FLOW



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