

PROJECT: Online Agriculture Products Store

PROJECT CASE: Mr. Henry, after being successful as a businessman and has become one of the wealthiest persons in the city. Now, Mr. Henry wants to help others to fulfil their dreams. One day, Mr. Henry went to meet his childhood friends Peter, Kevin and Ben. They live in a remote village and do farming. Mr. Henry asked his friends if they are facing any difficulties in their day-to-day work. Peter told Mr. Henry that he is facing difficulties in procuring fertilizers which are very important for farm. Kevin said that he is also facing the same problem in-case of buying seeds for farming certain crops. Ben raised his concern on lack of pesticides which could help in greatly reducing pests in crops. After listening to all his friends' problems, Mr. Henry thought that this is a crucial problem faced not only by his friends but also by so many other farmers. So, Mr. Henry decided to make an online agriculture product store to facilitate remote area farmers to buy agriculture products. Through this Online Web / mobile Application, Farmers and Companies (Fertilizers, seeds, and pesticides manufacturing Companies) can communicate directly with each other.

The main purpose of building this online store is to facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet connectivity. Since new users are involved, Application should be user friendly. This new application should be able to accept the product (fertilizers, seeds, pesticides) details from the manufacturers and should be able to display them to the Farmers. Farmers will browse through these products and select the products what they need and request to buy them and deliver them to farmers location.

Fertilizers, seeds, pesticides details from the manufacturers and should be able to display them to the Farmers. To gather the business requirements from the client, you went to SOONY and met Mr. Henry. When Mr. Henry was asked about the project and what are they expecting from the project, Mr. Henry stated that he is expecting to have a login for all its users (fertilizers, seeds, pesticides manufacturers and Farmers) , a product catalog of fertilizers, seeds, pesticides, a search option to search for products, payment process, and delivery tracking. After doing the stakeholder analysis, you have found out that Peter, Kevin, Ben are the key stakeholders and you have scheduled an appointment to meet them. After meeting with them and trying to gather the stakeholder requirements, Kevin said that, a Farmer should be able to browse through the products catalog once they visit the website and need to have a search option so that they can search for any product they need. Peter said that, if a farmer wants to buy any product or add them to buy-later list, they need to login first using their email id and password. If it is a new user, then they can create a new account by submitting their email ID and creating a secure password. Ben added saying that, Farmers needs to have an easy-to-use payment gateway which should include cash-on-delivery (COD), Credit/Debit card and UPI options so that the user's experience should be better. Kevin mentioned that, a user gets an email confirmation regarding their order status. A delivery tracker to track the whereabouts of their order.

Mr. Henry has given this project through his Company SOONY. In SOONY Company, Mr Pandu is Financial Head and Mr Dooku is Project Coordinator. Mr. Henry , Mr Pandu , and Mr Dooku formed one Committee and gave this project to APT IT SOLUTIONS company for Budget 2 Crores INR and **18 months** Duration under CSR initiative. Peter, Kevin and Ben are helping the Committee and can be considered as Stakeholders share requirements for the Project.

Mr Karthik is the Delivery Head in APT IT SOLUTIONS company and he reached out to Mr Henry through his connects and Bagged this project. APT IT SOLUTIONS company have Talent pool Available for this Project. Mr Vandanam is project Manager, Ms. Juhi is Senior Java Developer, Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo are Java Developers. Network Admin is Mr Mike and DB Admin is John. Mr Jason and Ms Alekya are the Tester. And you joined this team as a BA.

Question 1: Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customer)

Goal: The goal of the online agriculture store is to facilitate farmers in remote areas to easily purchase fertilizers, seeds, and pesticides through an online platform, thereby overcoming the challenges faced in procuring agricultural products.

Inputs:

1. Farmer requirements for fertilizers, seeds, and pesticides.
2. Product details from manufacturers (fertilizer, seed, and pesticide companies).
3. Internet connectivity for accessing the online platform.
4. Delivery address and location details from farmers.

Resources:

1. Online web/mobile application platform.
2. Database for storing product details, farmer information, and orders.
3. Internet infrastructure and servers.
4. Logistics and delivery services.

Outputs:

1. Display of available fertilizers, seeds, and pesticides to farmers.
2. Order requests from farmers.
3. Order confirmation and tracking details.
4. Delivery of purchased products to the farmers' locations.

Activities:

1. Uploading product details and farmer information on the online store.
2. Enabling search functionality for farmers to find desired products.
3. Allowing farmers to select and add products to their cart.
4. Implementing a secure payment gateway for online transactions.
5. Generating order confirmation and tracking information.
6. Coordinating with logistics and delivery services to fulfill orders.

Value created to the end Customer:

1. Convenient access to a wide range of fertilizers, seeds, and pesticides from anywhere.
2. Easy availability of fertilizers, seeds, and pesticides to farmers eliminating the need for transportation
3. Time and effort saved in physically visiting stores and suppliers for product procurement.
4. Availability of product details, allowing farmers to make informed choices based on their requirements.
5. Timely delivery of purchased products to the farmer's locations.

Question 2: Mr. Karthik is doing SWOT analysis before he accepts this project. What Aspects he Should consider as Strengths, as Weaknesses, as Opportunity and as Threat.

Strength
<p>Expertise and Talent Pool: APT IT Solutions has a talented team with professionals skilled in Java development, testing, networking, and database administration. This expertise can ensure the successful development and implementation of the online store.</p> <p>Financial Support: The project has a budget of 2 Crores INR, which provides ample financial resources to execute the project effectively, including infrastructure development, software licenses, and marketing efforts.</p>
Weaknesses
<p>New User New User Base: The project involves targeting farmers who may not be familiar with online platforms. This lack of familiarity may pose challenges in terms of user adoption and acceptance, requiring the development team to focus on user-friendly design and usability.</p>
Opportunity
<p>Market Potential: The online agriculture product store has the potential to serve not only Mr. Henry's friends but also numerous farmers in remote areas. By providing convenient access to agricultural products, the platform can tap into a significant market opportunity and attract a large user base.</p> <p>Expansion of Product Offerings: As the platform gains popularity and farmers' trust, it can be expanded to offer additional services such as advisory support, weather forecasting, and market information. This expansion can create new revenue streams and strengthen the relationship between the platform and its users.</p>
Threats
<p>Competition: There may be existing competitors or new entrants in the market who offer similar online agriculture product stores.</p> <p>Connectivity and Infrastructure: Remote areas may have limited internet connectivity and infrastructure, which can affect the accessibility and usage of the online platform.</p>

Question 3:Mr Karthik is trying to do feasibility study on doing this project in Technology (Java), Please help him with points (HW SW Trained Resources Budget Time frame) to consider in feasibility Study.

- Hardware Requirements:
 - Server capacity
 - Storage requirements
 - Networking equipment
 - any specialized hardware needed for data processing or security.
- Software Requirements:
 - Evaluate the compatibility of Java with the project.
 - Identify the necessary software components, frameworks, and libraries required to develop the application.
 - Consider the compatibility and integration capabilities of Java with other systems and APIs that will be used in the project.
- Trained Resources:
 - Availability of Java developers
 - Availability Testing Team
 - Availability Business Analyst
 - Consider the expertise and experience of having knowledge of Java, web development frameworks, e-commerce functionalities and database management.
- Budget: Evaluate the proposed budget of 2 Crores INR against the project requirements.
 - Consider the cost of hardware infrastructure, software licenses, API such as payment gateways, development resources, training, maintenance, and support.
 - Determine if the allocated budget is sufficient to meet the desired project goals within the specified timeframe.
- Timeframe:
 - Determine the project duration and create a realistic timeline for development, testing, deployment, and any required iterations.
 - Consider factors such as the complexity of the application, the number of features to be implemented, and the availability of resources.

Question 4: Mr Karthik must submit Gap Analysis to Mr Henry to convince him to initiate this project. What points (compare AS-IS existing process with TO-BE future Process) to showcase in the GAP Analysis.

Accessibility:

AS- IS: Farmers rely on physical visits to local suppliers or intermediaries to purchase agricultural products, leading to time-consuming and cumbersome processes.

TO- BE: The online store will enable farmers to browse and select products conveniently from a wide range of options. They can place orders online, simplifying the procurement process and saving time.

Product Information and Selection:

AS-IS: Farmers often have limited access to detailed product information, making it challenging to make informed decisions regarding fertilizers, seeds, and pesticides.

TO-BE: The online store will provide comprehensive product information, including descriptions, usage guidelines, and reviews, allowing farmers to make well-informed choices based on their specific requirements.

Competitive Pricing:

AS-IS: Limited competition and lack of transparent pricing in the local market may lead to inflated prices for agricultural products.

TO-BE: The online store will foster competition by connecting farmers directly with manufacturers, enabling transparent pricing and competitive rates for fertilizers, seeds, and pesticides.

Product Availability and Variety:

AS-IS: Farmers may face challenges in accessing a wide range of high-quality agricultural products due to limited availability in local markets.

TO-BE: The online store will provide a platform for manufacturers to showcase their products, ensuring a diverse range of options and increasing availability for farmers.

Farmer-Company Communication:

AS-IS: Limited communication channels between farmers and agricultural product manufacturers, leading to challenges in obtaining product information or addressing concerns.

TO-BE: The online store will enable direct communication between farmers and companies, allowing for queries, feedback, and support, fostering a better farmer-company relationship.

Question 5: List down different risk factors that may be involved (BA Risks And process/Project Risks)

BA Risks:

- **Miscommunication with stakeholders:** Communication gaps or misunderstandings with the stakeholders can result in misalignment of expectations and deliverables.
- **Incomplete or changing requirements:** There is a risk that the requirements provided by the stakeholders may be incomplete or subject to change, leading to misunderstandings and scope creep during the project.
- **Inadequate stakeholder involvement:** Lack of active involvement from the stakeholders throughout the project can result in delayed feedback, poor decision-making, and inadequate validation of requirements.
- **Unrealistic expectations:** Stakeholders may have unrealistic expectations regarding project timelines, budget, or functionality, which can lead to dissatisfaction and project delays.
- **Technical constraints:** The BA may face challenges in understanding and translating technical requirements into business terms, especially if they have limited technical knowledge.

Project Risks:

- **Technology challenges:** The use of new technologies or unfamiliar platforms may present technical hurdles and compatibility issues.
- **Budget constraints:** The allocated budget of 2 Crores INR may not be sufficient to cover all the development, testing, and maintenance costs, potentially leading to compromises in quality or functionality.
- **Time management:** The 18-month duration of the project could be at risk due to unforeseen delays, resource constraints, or changing priorities.
- **Resource availability:** Availability of skilled resources, such as developers, testers, network administrators, and database administrators, may impact the project's progress and quality.
- **Security and privacy concerns:** The online platform needs to address potential security risks, including data breaches, unauthorized access, and protection of farmers' personal information.
- **Integration complexities:** Integrating the online store with external systems or APIs, such as payment gateways or logistics providers, may introduce challenges and potential points of failure.
- **User adoption:** There is a risk that farmers may not readily adopt the new online platform, especially if they are not familiar with technology or face connectivity issues in remote areas.

Question 6: Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take decisions and who are the influencers

	Project Manager	BA	Project Sponsor	Stakeholder	Developer	Tester
Requirements	R	A	R	R	-	-
Design	R	A	C	I	-	-
Analysis	R	A	C	I	-	-
Coding	R	I	-	I	R	-
Testing	R	I	-	I	I	R
Deployment	R	R	I	I	I	R

Question 7: Help Mr Karthik to prepare a business case document.

Project name	Online Agriculture Products Store
Project sponsor	Mr. Henry
Project manager	Mr Vandanam
Date of project	04/06/2023
Executive Summary:	The Online Agriculture Product Store project aims to address the difficulties faced by farmers, particularly in remote areas, in procuring fertilizers, seeds, and pesticides. The objective is to create an online platform that connects farmers with agricultural product manufacturers and facilitates the seamless purchase and delivery of these essential products. This project holds significant potential to empower farmers, enhance their productivity, and contribute to the agricultural sector's growth.
Problem Statement:	<ul style="list-style-type: none">• Farmers face challenges in accessing and procuring necessary agricultural products due to geographical constraints and limited availability.• This leads to decreased productivity and potential crop losses. The lack of a convenient and reliable platform for farmers to purchase these products is needful.
Solution:	<ul style="list-style-type: none">• The Online Agriculture Product Store will be an online web and mobile application that allows farmers to browse and purchase fertilizers, seeds, and pesticides directly from manufacturers.• The platform will provide product details, facilitate communication between farmers and companies, and enable delivery to the farmers' locations.• The user-friendly interface will ensure ease of use for new users, including farmers with limited technology exposure.
Project Objectives:	<ul style="list-style-type: none">• Establish an online platform that connects farmers with agricultural product manufacturers.• Enable farmers to browse, select, and purchase fertilizers, seeds, and pesticides conveniently.• Facilitate direct communication between farmers and manufacturers for efficient procurement.• Ensure timely and reliable delivery of products to the farmers' locations.• Promote productivity, sustainability, and growth in the agricultural sector.
Timeline and budget:	<ul style="list-style-type: none">• The project time span (18 months) - The timeline includes development, testing, deployment, and post-launch support.• Project Budget (2 Crores INR) -The budget covers development resources, infrastructure, integration.
Conclusion	The Online Agriculture Product Store project has immense potential to transform the agricultural landscape by addressing the challenges faced by farmers in procuring essential products. With the right planning, execution, and collaboration, we can successfully deliver a user-friendly platform that empowers farmers and contributes to their overall well-being.

Question 8: Four SDLC Methodologies

Sequential (Waterfall) Methodology:

This methodology follows a linear, step-by-step approach with distinct phases such as requirements gathering, design, development, testing, and deployment.

Each phase is completed before moving on to the next, making it suitable for projects with well-defined and stable requirements. However, it may not be ideal for projects where requirements are likely to change or evolve over time.

- Requirement Analysis
- Planning
- Architectural Design
- Software Development
- Testing
- Deployment
- Maintenance

Iterative Methodology:

Iterative methodologies involve repeating cycles or iterations of the development process. Each iteration focuses on a subset of requirements and includes all development phases.

It allows for feedback and refinement throughout the project, which is beneficial when requirements are subject to change or when early delivery of specific features is desired.

- Requirement phase
- Design Phase
- Implementation and Test
- Review Phase

Evolutionary Methodology:

Evolutionary methodologies, such as prototyping or incremental development, prioritize delivering a working product early on. The project evolved based on continuous feedback and learning from user interactions.

This approach is suitable when requirements are uncertain or when stakeholders require frequent visibility and involvement in the development process.

- Requirement analysis
- Design & Development
- Test
- Implementation

Agile Methodology:

Agile is an iterative and collaborative approach that emphasizes flexibility, adaptability, and continuous improvement. It involves working in short development cycles called sprints, delivering incremental value in each iteration.

Agile encourages frequent communication and collaboration among stakeholders, allowing for changes and adaptations to be incorporated throughout the project.

- Requirements gathering
- Design the requirements.
- Construction/ iteration
- Testing/ Quality assurance
- Deployment
- Feedback

Question 9: Waterfall RUP Spiral and Scrum Models.

Waterfall model:

The Waterfall model is a linear and sequential approach to software development.

It follows a strict top-down approach, where each phase (requirements, design, development, testing, deployment) is completed before moving on to the next.

The model assumes that requirements are well-defined and stable throughout the project.

It lacks flexibility for accommodating changes or feedback during development, as each phase is dependent on the completion of the previous one.

Suitable for projects with clear and fixed requirements, limited interdependencies, and where changes are unlikely.

Rational Unified Process (RUP):

RUP is an iterative software development methodology that combines elements of both waterfall and prototyping approaches.

It divides the project into four phases: inception, elaboration, construction, and transition.

Each phase is further divided into iterations, where requirements, design, and implementation are refined iteratively.

RUP emphasizes the early identification and mitigation of risks, and it encourages stakeholder involvement throughout the development process.

Suitable for projects where requirements are not fully known or may change, and where iterative development and risk management are important.

Spiral Model:

The Spiral model is an iterative and risk-driven software development approach.

It combines the elements of waterfall and prototyping models with an emphasis on risk analysis and management.

The model follows a cyclic approach, where each cycle includes four phases: planning, risk analysis, engineering, and evaluation.

It allows for early identification and resolution of risks through iterative development and prototyping.

Suitable for projects with high risks and uncertainties, where flexibility and risk management are critical.

Scrum:

Scrum is an agile software development framework that focuses on collaboration, flexibility, and iterative delivery.

It operates in short iterations called sprints, typically lasting 1-4 weeks, and each sprint delivers a potentially shippable increment of the product.

Scrum emphasizes self-organizing cross-functional teams, daily stand-up meetings, and continuous feedback.

It allows for changes and refinements throughout the project, incorporating feedback from stakeholders and customers.

Suitable for projects with evolving requirements, a need for frequent customer feedback, and a focus on early delivery of value.

Sprint: A Sprint is a time-box of one month or less. A new Sprint starts immediately after the completion of the previous Sprint.

Release: When the product is completed then it goes to the Release stage.

Sprint Review: If the product still has some non-achievable features then it will be checked in this stage and then the product is passed to the Sprint Retrospective stage.

Sprint Retrospective: In this stage quality or status of the product is checked.

Product Backlog: According to the prioritized features the product is organized.

Sprint Backlog: Sprint Backlog is divided into two parts Product assigned features to sprint and Sprint planning meeting.

10. Write down the differences between waterfall model and V model.

Waterfall model	V-model
The cost of Waterfall model is low.	V-model is expensive.
Simplicity of Waterfall model is simple.	Simplicity of V-model is Intermediate.
Flexibility of Waterfall model is Rigid.	Flexibility of V-model is Little flexible.
Waterfall model is a sequential execution process.	It is also a sequential execution process.
Waterfall model's steps move in a linear way.	V-model's steps don't move in linear way.
Re-usability of Waterfall model is Limited.	V-model can be Re-use for some extent.
User involvement in Waterfall model is only in beginning.	User involvement in V-model is also only in beginning.
In Waterfall model testing activities start after the development activities are over.	In V-model testing activities start with the first stage.
Guarantee of success through Waterfall model is low.	Guarantee of success through V-model is high.
Waterfall model is a continuous process.	V-model is a simultaneous process.
Software made using Waterfall model, the number of defects is less in comparison of software made using V-model.	Software made using V-model, the number of defects is greater in comparison of software made using Waterfall model.
Requirement specification in Waterfall model is necessary in beginning.	Requirement specification in V-model is also necessary in beginning.
Waterfall model is less used now-a-days in software engineering.	V-model is widely used in software engineering.

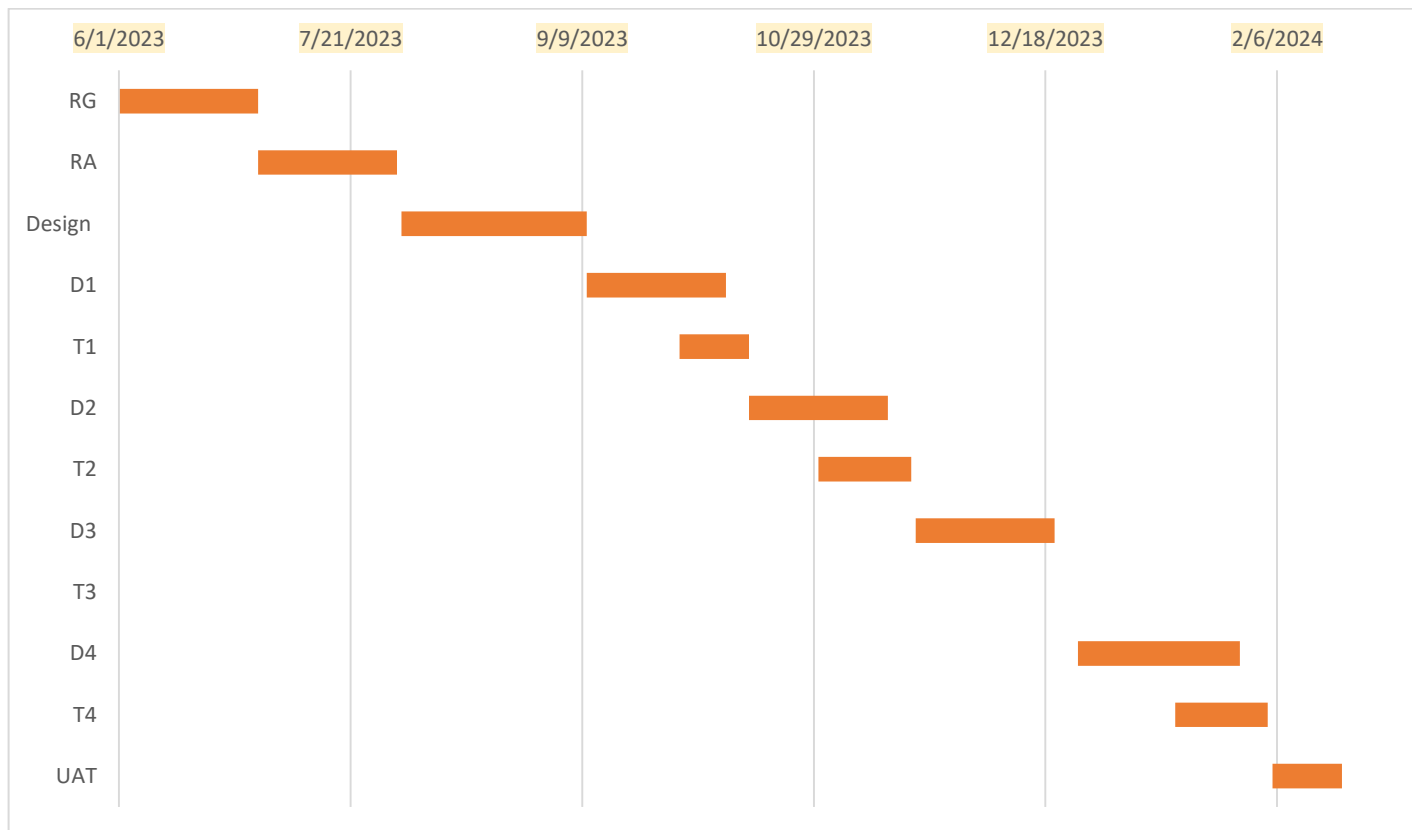
11. As a BA, state your reason for choosing one model for this project

As a Business analyst I will choose V model over waterfall model for this project due to following reasons.

- execution of the phases happens in a sequential manner in a v shape.
- In v model, the total defects in the developed software are lower.
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12. The Committee of Mr. Henry, Mr Pandu, and Mr Dooku discussed with Mr Karthik and finalised on the V Model approach (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT) Mr Vandanam is mapped as a PM to this project. He studies this Project and Prepares a Gantt chart with V Model (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT) as development process and the Resources are PM, BA, Java Developers, testers, DB Admin, NW Admin.

Gantt chart with V model



13. The Committee of Mr. Henry, Mr Pandu, and Mr Dooku is now discussing about the funds and how to release the funds for development. They were studying Fixed Bid model and Billing Model. Share your knowledge on Fixed Bid model and Billing Model.

Fixed Bid Model:

Key features of the Fixed Bid model:

Fixed price: The project is priced based on the agreed scope, and the client pays a predetermined amount regardless of the actual effort or resources involved.

Defined scope: The project requirements and deliverables are explicitly specified and documented upfront.

Limited flexibility: Any changes or additions to the project scope may result in additional costs or delays.

The Fixed Bid model provides clarity and predictability in terms of project costs and deliverables. However, it may be less flexible in accommodating changes or evolving requirements.

Billing Model:

The Billing Model refers to the method used for invoicing and billing clients for the services provided by the service provider. There are several billing models commonly used in the IT industry, including:

Time and Material (T&M): In this model, the client pays based on the actual time spent by the resources and the materials used during the project. The service provider charges an hourly or daily rate for each resource, and the client is billed accordingly. It allows for flexibility and accommodates changes in the project scope.

Retainer-based Billing: In this model, the client pays a fixed amount on a recurring basis, typically monthly, to retain the services of the service provider. The client has ongoing access to the provider's resources and expertise.

Question 14,15,16,17,18,19,20. Please share Sample Timesheets of a BA in various SDLC Stages RG, RA, Design, D1, T1, D2,T2, D3, T3,D4, T4 and UAT, Deployment n Implementation

1.	Requirement Gathering Timesheet		
Days	Tasks	Actionable Items	Duration
Day 1	Identify Stakeholders	Conduct meetings with stakeholders	2 hours
Day 2-4	Detailed Requirement gathering	Conduct meetings with stakeholders	8 hours
Day 5-8	Prepare BRD	Document and analyze the gathered requirements	12 hours
Day 11-13	Requirement sorting	Create user stories, use cases, and functional requirements	12 hours
Day 14-15	Team meeting	Collaborate with the project team to validate the requirements	8 hours
			40 hours

2.	Requirement Analysis Timesheet		
Days	Tasks	Actionable Items	Duration
Day 16-18	Verify Requirements	Review and analyze the documented requirements, identify gaps and conflicts	6 hours
Day 19-20	Validate Requirements	Specify and model requirements	4 hours
Day 21-23	Clarify Req. with technical team	Collaborate with the development team to clarify requirements	12 hours
Day 24-28	Requirement documents	Preparation of FRD, SRS	12 hours
Day 29-31	Validate SRS	Taking signoff on SRS and Preparing RTM	6 hours
			38 hours

3.	Design Timesheet		
Days	Tasks	Actionable Items	Duration
Day 32	Project Team meeting	Collaborating with UI/UX designers for interface design	6 hours
Day 33	Diagrams	Creating data flow diagrams Collaborating with solution architects for system design	8 hours
Day 34	Diagrams	Creating entity-relationship diagrams Collaborating with database administrators for database design	8 hours
Day 35	Meeting	Creating system flowcharts Collaborating with technical team for technology selection	8 hours
Day 36	Review	Reviewing and finalizing design documents	8 hours
			38 hours

4.	Development and Testing (D1, T1, D2, T2, D3, T3, D4, T4) Timesheet – V model		
Days	Tasks	Actionable Items	Duration
Day 37-39	D1	Collaborating with the development team for technical specifications Reviewing and finalizing design documents	18 hours
Day 40-41	T1	Creating test plans Developing test scenarios	12 hours
Day 42-44	D2	Collaborating with developers for clarifications Conducting code reviews	18 hours
Day 45-46	T2	Executing test cases Reporting and documenting defects	10 hours
Day 47-49	D3	Collaborating with developers for defect resolution Conducting retests	16 hours
Day 50-51	T3	Conducting regression testing Reviewing and finalizing test artifacts	10 hours
Day 52-55	D4	Collaborating with developers for final adjustments Preparing for user acceptance testing (UAT)	20 hours
Day 56-57	T4	Assisting users with UAT execution Reporting and documenting UAT defects	12 hours
			116 hours

5.	Design Timesheet		
Days	Tasks	Actionable Items	Duration
Day 58	Planning	Review UAT test strategy and test plan Identify UAT test scenarios and requirements coverage	6 hours
Day 59	UAT Test Case Design	Create UAT test cases based on requirements	4 hours
Day 60	Conduct UAT	Collaborating with stakeholders to define UAT test scenarios	4 hours
Day 61	UAT Test Execution - Iteration 1	Execute UAT test cases for Iteration 1	6 hours
Day 62	UAT Defect Reporting - Iteration 1	Identify and report defects found during Iteration 1	2 hours
Day 63	UAT Test Execution - Iteration 2	Execute UAT test cases for Iteration 2	6 hours
Day 64	UAT Defect Reporting - Iteration 2	Identify and report defects found during Iteration 2	2 hours
Day 65	UAT Test Execution - Iteration 3	Execute UAT test cases for Iteration 3	6 hours
Day 66	UAT Defect Reporting - Iteration 3	Identify and report defects found during Iteration 3	2 hours
			38 hours

6.	Deployment and Implementation Timesheet		
Days	Tasks	Actionable Items	Duration
Day 67-68	Team meeting	Collaborate with the development team to ensure all deliverables are ready for deployment. Coordinate with stakeholders to finalize user training sessions	8 hours
Day 69	Pre-Deployment	Participate in pre-deployment meetings and address any last-minute issues. Collaborate with the project team to prepare deployment documentation	8 hours
Day 70	Monitor progress	Assist in coordinating the deployment activities with the development and infrastructure teams. Monitor the deployment progress and communicate updates to stakeholders.	8 hours
Day 72-73	User Training sessions and feedback	Conduct user training sessions and provide support for the issues. Coordinate with the technical team to resolve post-deployment issues. Collect user feedback and document any required enhancements	12 hours
Day 74	Review	Review the deployment process and identify areas for improvement. Document lessons learned and shared them with the project team. Finalize deployment documentation and update the project repository	8 hours
			44 hours

Question 21. 5 Quarterly Audits are planned Q1, Q2, Q3, Q4, Q5 for this Project. What is your knowledge on how these Audits will happen for a BA?

Quarterly audits will conduct in a project to inspect the work for quality and for progress standers and the audit for BA will be conducted to check whether he is updating the progress of the project to the responsible stakeholder and concerning documents or not. Audits will be done at different stages of completion of a project or delivery cycles.

Requirements Review: During each quarterly audit, the BA will participate in requirements review session with the stakeholders. The purpose of this review is to ensure that the project requirements are being met effectively. The BA will gather feedback, identify any gaps or changes in requirements, and document them for further action.

Documentation Assessment: The BA will assess the project documentation, including the business requirements, functional specifications, and user stories. They will ensure that the documentation accurately reflects the needs and expectations of the stakeholders. The BA will identify any discrepancies or missing information, and work with the project team to address them in a timely manner.

User Acceptance Testing (UAT) Support: The BA will collaborate with the testing team during the UAT phase. They will review the test plans, test cases, and test results to ensure that the application meets the desired functionality.

Stakeholder Engagement: The BA will conduct regular meetings or workshops to discuss the project progress, present updates, and seek input from stakeholders to ensure their expectations are met.

An audit can be done at any stage. For example – at Stakeholder Analysis stage, Design, Solution Evaluation stage.

Question 22 – BA Approach Strategy

1. What are the steps that you would need to follow to complete a project:

- Identify Objective of Project, gathering background Information, determine stakeholder, Requirement Gathering, Requirements analysis, Design, Execution, testing, Implementation, Deployment.

2. What Elicitation Techniques to apply:

- Interview and Prototyping would be the best elicitation techniques we can use for this project.
- While interviewing we will get to know the requirements of all stakeholders and as our users are farmers prototyping would help them to visualize and get more ideas on how the app can be made more user-friendly and more productive.

3. How to do Stakeholder Analysis RACI/ILS:

- Stakeholder analysis is the process of identifying the individuals or groups that are likely to affect or be affected by a proposed action and sorting them according to their impact on the action and the impact the action will have on them. A RACI categorization is often used for clarifying what stakeholder's roles and responsibilities are in the context of a specific task or process.

4. What Documents to Write:

- Project Vision Plan, Business Analysis Plan, BRD, FRD/FRS, SRD, RTM, Usecase Diagrams, Wireframes, Mockups, Change Request Document

5. What process to follow to Sign off on the Documents:

- Ensure that stakeholders understand the Requirements Specification Document (RSD)
- Avoid spending an excessive amount of time on getting the RSD signed off.
- Avoid idle time while awaiting sign-off.

6. How to take Approvals from the Client:

- Approval of requirements and designs may be formal or informal. Predictive approaches typically perform approvals at the end of the phase or during planned change control meetings. Adaptive approaches typically approve requirements only when construction and implementation of a solution meeting the requirement can begin. Business analysts work with key stakeholders to gain consensus on new and changed requirements, communicate the outcome of discussions, and track and manage the approval.

7. What Communication Channels to establish and implement:

- There is a preference for multidisciplinary and co-located teams encouraging more efficient and effective face-to-face conversation. However, agile approaches can work well with distributed teams provided appropriate support and communication channels are in place.

8. How to Handle Change Requests: When business analysts develop a change control process, they:

- Determine the process for requesting changes.
- Determine how changes will be prioritized:
- Determine how changes will be documented and communicated.
- Determine who will perform the impact analysis:
- Determine who will authorize changes:

9. How to update the progress of the project to the Stakeholders:

- Utilize online collaboration tools to share regular progress.
- Send weekly or biweekly status report.
- Develop and follow a meeting cadence to meet with actively involved stakeholders.

10. How to take signoff on the UAT- Client Project Acceptance Form:

- This form can be used to record the client's sign-off and officially bring the project to a close. Use this form when the project outcome has been measured against its acceptance criteria and has been formally accepted on behalf of the client.
- It offers a place to record:
 - additional comments about the project
 - key metrics achieved during the project (success criteria)
 - key metrics to be tracked on an ongoing basis (to judge the long-term effectiveness of the project) and a place to reference or record very high-level lessons learned.
- Using this form will officially bring your project to a close and give you an opportunity to discuss key aspects of the project with your sponsor. In the end it will give you a mutually agreed upon outcome.

Question 23: 3-tier Architecture

Three-tier architecture is a well-established software application architecture that organizes applications into three logical and physical computing tiers: the application tier, where data is processed; the business logic layer and the data tier, where the data associated with the application is stored and managed.

The chief benefit of three-tier architecture is that because each tier runs on its own infrastructure, each tier can be developed simultaneously by a separate development team and can be updated or scaled as needed without impacting the other tiers.

For decades three-tier architecture was the prevailing architecture for client-server applications. Today, most three-tier applications are targets for modernization, using cloud-native technologies such as containers and microservices, and for migration to the cloud.

GUI likes screens and pages, validation pages, organization specific business logic will be on application layer.

All reusable components, frequently changing components, Governing body rules and regulation, compliances should go to middle layer. Ex. Printer, Payment gateway, mail server, RBI rules for banks, IRDA rules for Insurance. Data base components connecting to the database will be in the data layer.

Guidelines to place identified MVC Classes in a 3 Tier Architecture

1. Place all Entity Classes in DB Layer
2. Place Primary Actor associated Boundary Class in Application Layer
3. Place Controller Class in Application Layer
4. If governing Body influence or Reusability is there with any of remaining Boundary Classes, place them in Business Logic Layer or else place them in Application Layer.

A persistent class- Entity classes

A transient class- Boundary Class and Controller class

Question 24 – BA Approach Strategy for Framing Questions.

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)

5W 1H Questions:

1. Who are the target users of the online agriculture product store?
2. What specific types of fertilizers, seeds, and pesticides are in high demand?
3. When do farmers typically require these products? Are there any seasonal variations?
4. Where are the farmers located? Are there any geographical constraints for product delivery?
5. Why is it important to facilitate farmers in purchasing these products online?
6. How will the online store ensure seamless communication between farmers and companies?

SMART Questions:

1. Can you provide specific measurable goals for the online agriculture product store project?
2. How can we ensure that the application is achievable within the allocated budget and timeframe?
3. Are the project objectives relevant to the stakeholders' requirements and Mr. Henry's vision?
4. Is there a specific timeline or milestones that need to be met during the development process?
5. Have key performance indicators (KPIs) been defined to evaluate the success of the application?

RACI Questions:

1. Who will be responsible for managing and maintaining the online agriculture product store?
2. Who needs to be consulted during the decision-making process for selecting manufacturers and products?
3. Who should be accountable for ensuring smooth communication between farmers and companies?
4. Who needs to be informed about any changes or updates to the application or product offerings?

3 Tier Architecture Questions:

1. What are the key components of the three-tier architecture proposed for the application?
2. How will the layers (presentation, application, and data) communicate with each other?
3. Are there any specific security or scalability requirements for each tier?

Use Cases, Use Case Specs, and Activity Diagrams Questions:

1. Can you provide examples of typical use cases that the application should support?
2. Are there any specific functionalities or user interactions that should be captured in the use case specifications?
3. Can you describe the flow of activities and interactions between farmers, manufacturers, and the application in an activity diagram?
4. Are there any specific exceptions or alternate flows that need to be considered?

Models and Page Designs Questions:

1. What are the key models or diagrams that have been developed for the application's user interface and system design?
2. How should the page designs align with the user-friendly requirement?
3. Can you provide examples of how the models or page designs address the stakeholders' needs and expectations?

Question 25 – Elicitation Techniques

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

1. Brainstorming:

Brainstorming can be done either individually or in groups. The ideas collected can then be reviewed, analyzed and where relevant included within the system requirements. Ideas can come from what users / stakeholders have seen (eg at software exhibitions) or experienced elsewhere (eg before they joined the present organization).

Advantages: Can come up with very innovative ideas and requirements. It can be an efficient way for users / stakeholders to define their requirements.

Disadvantages: People can't easily brainstorm ideas when required to do. Some people find brainstorming much harder than others.

Brainstorming can be an effective way to generate lots of ideas on a specific issue and then determine which idea - or ideas - is the best solution. Brainstorming is most effective with groups of 8-12 people and should be performed in a relaxed environment.

It is utilized in requirements elicitation to gather good number of ideas from a group of people. Usually brainstorming is used in identifying all possible solutions to problems and simplifies the detail of opportunities. It casts a broad net, determining various discreet possibilities. Prioritization of such possibilities is vital to locate needles in haystack.

2. Interview:

Interviews of users and stakeholders are important in creating wonderful software. Without knowing the expectations and goal of the stakeholders and users, you are highly unlikely to satiate them. You also have to understand the perspective of every interviewee, in order to properly address and weigh their inputs. Like a good reporter, listening is a quality that assists an excellent analyst to gain better value through an interview as compared to an average analyst.

Advantages: Generally easy, because it can be done with minimal preparation. Interviews of individuals and small groups require less planning and scheduling effort than large workshops. Interviews of individuals and small groups require less stakeholder commitment than large workshops. Interviews provide an opportunity to explore or clarify topics in more detail.

Disadvantages: The questions used in the interview may reflect the interviewer's preconceived ideas, which can influence the responses. For projects with a large number of stakeholders the interviews technique can be time-consuming and inefficient. Conflicts and inconsistencies between stakeholder information need to be resolved in additional interviews. This technique does not allow different stakeholders to hear and elaborate upon the information being relayed.

3. Document Analysis/Review:

You may have documentation about your current system which could provide some of the input for the new system requirements. Such documentation (if it exists) could include interface details, user manuals, and software vendor manuals.

Advantages: Could be a lot of information and easy to transfer to requirements document. a new system

Disadvantages: Existing documentation may often be old and out of date. Systems, interfaces, processes and reports may have changed out of all recognition. Care needs to take, as it may not reflect what you need from a new system.

Document Analysis is an important gathering technique. Evaluating the documentation of a process documents and also when driving the gap analysis for scoping of the migration projects.

1. Prepare for Document Analysis:

- Evaluate which existing system and business documentation are relevant and appropriate to be studied.

2. Analyze the documents:

- Study the material and identify relevant business details.
- Document business details as well as questions for follow-up with subject matter experts

3. Post Document Analysis wrap-up:

- Review and confirm the selected details with subject matter experts.
- Obtain answers to follow-up questions.

4. Focus Group:

A focus group is a means to elicit ideas and attitudes about a specific product, service or opportunity in an interactive group environment. The participants share their impressions, preferences and needs, guided by a moderator.

A focus group typically has 6-12 attendees. It may be necessary to invite twice as many individuals in order to allow for no-shows. If many people need to participate, it may be necessary to run more than one focus group. The topic of the focus group will influence who should be recruited. If the topic is a new product, it is likely that existing users (experts and novices) should be included. There are pros and cons that should be considered when using homogeneous vs. heterogeneous composition.

- Homogeneous individuals with similar characteristics. Caution: Differing perspectives will not be shared. Possible solution: conduct separate sessions for different homogeneous groups.
- Heterogeneous individuals with diverse backgrounds and perspectives. Caution: Individuals may self-censor if not comfortable with others' background resulting in lower quality of data collected.

5. Workshops:

Workshops can comprise 6-10 or more users/ stakeholders, working together to identify requirements.

Workshops tend to be of a defined duration, rather than outcome and may need to be briefly repeated in order to clarify or obtain further details.

A Requirements Workshop is a structured way to capture requirements. A workshop may be used to scope, discover, define, prioritize and reach closure on requirements for the target system. Well-run workshops are considered one of the most effective ways to deliver high quality requirements quickly. They promote trust, mutual understanding, and strong communications among the project stakeholders and project team and produce deliverables that structure and guide future analysis.

6. Observation:

Observing, shadowing users or even doing part of their job, can provide information of existing processes, inputs and outputs.

Advantages: Useful if the user is not able to clearly explain what they do or their requirements for the new system can see ideas for improving processes or removing unnecessary activities from the new system. Disadvantages:

Relatively slow, focused on existing processes rather than the new system processes. There are two basic approaches for the observation technique:

- **Passive / invisible.** In this approach, the business analyst observes the subject matter expert working through the business routine but does not ask questions. The business analyst writes notes about what he/she sees, but otherwise stays out of the way, as if he/she was invisible. The business analyst waits until the entire process has been completed before asking any questions.
- **Active / visible.** In this approach, while the business analyst observes the current process and takes notes he/she may dialog with the worker. When the business analyst has questions as to why something is being done as it is, he/she asks the questions right away.

7. Prototyping:

Screen mockups can support the requirements gathering process when introduced at the right time, but if introduced too early they can become problematic. Here are a few key points that an analyst should remember.

1) Mockups are nice because they help the business representatives or clients visualize the functionality of the system. This can be a big advantage to help analysts and stakeholders identify problems early on. However, if introduced too soon in the process the natural tendency is for the business reps/clients to try and be screen designers. Instead of stating that the system shall support "x", they are beginning saying that they need a dropdown to capture "y" and a button to do "z". The client is not a UI designer; in fact, few business analysts truly are, so this can lead to a screen design which does not have an appropriate emphasis on usability. Similarly, specifying the controls needed on a screen detracts from the true requirements of the system and often results in an inadequate level of discussion around why a system must support certain functionality.

2) When requirements are captured in screen mockups with no supporting requirements list, it becomes impossible to know whether an early screen design decision was made because it supports a necessary requirement or if it was made for some other reason. How can the analyst and developers know whether they can eliminate or alter the screen feature without losing an important requirement. Questions like, "Do we really need to have the control on this screen, or can we capture the data at a later point in the process?" becomes unanswerable without going back to the original stakeholders. And, on complex projects no one stakeholder may be able to answer the question.

8. Joint Application Development (JAD)/ Requirement Workshops:

The Joint Application Development (JAD) technique is an extended, facilitated workshop. It involves collaboration between stakeholders and systems analysts to identify needs or requirements in a concentrated and focused effort.

Advantages: This technique allows for the simultaneous gathering and consolidating of large amounts of information. This technique produces relatively large amounts of high-quality information in a short period of time. Discrepancies are resolved immediately with the aid of the facilitator. This technique provides a forum to explore multiple points of view regarding a topic.

Disadvantages: Requires significant planning and scheduling effort. Requires significant stakeholder commitment of time and effort.

9. Survey/Questionnaire:

Questionnaires can be useful for obtaining limited system requirements details from users / stakeholders, who have a minor input or are geographically remote. The design of the questionnaire (whether offline or web based) and types of questions are important and can influence the answers, so care is needed.

Advantages: Can send to many hundreds of users at a low cost. Good for getting input from users who are a long distance away. Receive written replies which can be easier to work with and analyze and save time typing.

Disadvantages: Questionnaires can be slow to create. You may not get a good response, as filling in questionnaires is often a low priority for many people. Recipients may feel 'left out when they really wanted more input.

10. Use Case Modeling:

Collaborating with stakeholders to identify actors, define use cases, and capture detailed scenarios and interactions, providing a structured approach to understand system behavior, user interactions, and functional requirements. It involves the following key aspects:

Actors: Identifying and defining the individuals, external systems, or entities that interact with the system.

Use Cases: Describing specific interactions or tasks that users perform with the system to achieve their goals.

Scenarios: Outlining the sequence of steps or flow of interactions between actors and the system to accomplish a specific task.

Relationships: Establishing relationships between use cases, such as include, extend, or generalize, to capture common functionalities and variations.

Preconditions: Defining the initial conditions that must be satisfied before a use case can be executed.

Postconditions: Specifying the expected outcomes or system state after the completion of a use case.

Scope: Helping to define the boundaries and scope of the system by identifying the functionalities to be included.

Communication: Serving as a communication tool between stakeholders, business analysts, and development teams, facilitating shared understanding.

Validation: Serving as a basis for validating requirements, ensuring they meet user needs and align with system objectives.

Testing: Guiding the development of test cases and scenarios for system testing, ensuring comprehensive coverage of functional requirements and user interactions.

Question 26: This project Elicitation Techniques

In the given project scenario, the following elicitation techniques can be used:

Prototyping: Prototyping can be a valuable technique to gather requirements for the online agriculture product store. Creating interactive prototypes or mock-ups of the web/mobile application can help stakeholders visualize the system's functionalities, user interfaces, and workflows. It allows for early feedback and validation, ensuring that the final solution meets the farmers' needs and is user-friendly.

Use case Specs: Use case specifications are essential for capturing the interactions between actors (farmers, companies) and the system. Developing detailed use case specifications helps identify the specific functionalities, user goals, and expected outcomes. This technique allows for a structured approach to defining requirements and ensures that all stakeholders have a clear understanding of the system's behavior.

Document Analysis: Document analysis involves reviewing existing documentation related to the project, such as agricultural industry reports, regulations, and best practices. By analyzing these documents, the Business Analyst can gain insights into the challenges faced by farmers and identify potential requirements and constraints for the online store. It helps in understanding the context and industry-specific considerations that should be addressed.

Brainstorming: Brainstorming sessions with stakeholders, including Mr. Henry, Peter, Kevin, Ben, and the project team, can be used to generate new ideas, identify potential requirements, and explore innovative solutions. Brainstorming encourages open discussion and collaboration, allowing different perspectives to be shared and ensuring that the project captures diverse stakeholder input.

Justification for selection:

Prototyping: The selection of prototyping is justified as it enables stakeholders to visualize the system early on and provide valuable feedback, ensuring a user-friendly application.

Use case Specs: Use case specifications help in documenting and communicating the system's behavior, ensuring a clear understanding of user interactions and goals.

Document Analysis: Analyzing industry-specific documents helps in gaining insights into the unique challenges faced by farmers and incorporating relevant requirements into the solution.

Brainstorming: Brainstorming sessions facilitate collaborative idea generation and ensure that diverse stakeholder perspectives are considered, leading to innovative solutions and comprehensive requirements gathering.

Question 27: 10 Business Requirements

Sr.no	Requirement Description
BR001	The farmer and Manufacturer can register/login through email-ID or phone number
BR002	Farmers should be able to search for available products in fertilizers, seeds, and pesticides
BR003	Manufacturers should be able to upload/delete/edit and display their products in the application
BR004	Farmers should be able to add products to a wish list or favorites list for future reference
BR005	The application should offer a secure and convenient payment gateway for online transactions
BR006	Manufacturers should have the ability to update availability in real-time
BR007	Farmers should be able to view and compare product ratings and reviews from other users
BR008	The application should have a user-friendly interface that is accessible and compatible with both web and mobile platforms
BR009	Farmers should receive email or SMS notifications regarding order confirmations, payment receipts, and delivery updates
BR010	The application should support multiple Payment options (Cash on, Card and UPI)

Question 28: Assumptions

Team Collaboration: The project team members, including Mr. Henry, Mr. Pandu, Mr. Dooku, and the APT IT SOLUTIONS team, will collaborate effectively throughout the project duration to ensure smooth communication and decision-making.

Requirements Clarity: The initial requirements gathered from Mr. Henry and the stakeholders are sufficient to start the project, and any additional requirements or changes will be communicated and documented promptly.

Resource Availability: The APT IT SOLUTIONS company has a talent pool available with the required skills and expertise to handle the development, testing, and deployment of the online agriculture product store.

Technology Stack: The project will be developed using Java programming language and related frameworks to build a robust and scalable web and mobile application.

Infrastructure and Environment: The necessary hardware, software, and development/testing environments will be provided by APT IT SOLUTIONS to facilitate the project's progress.

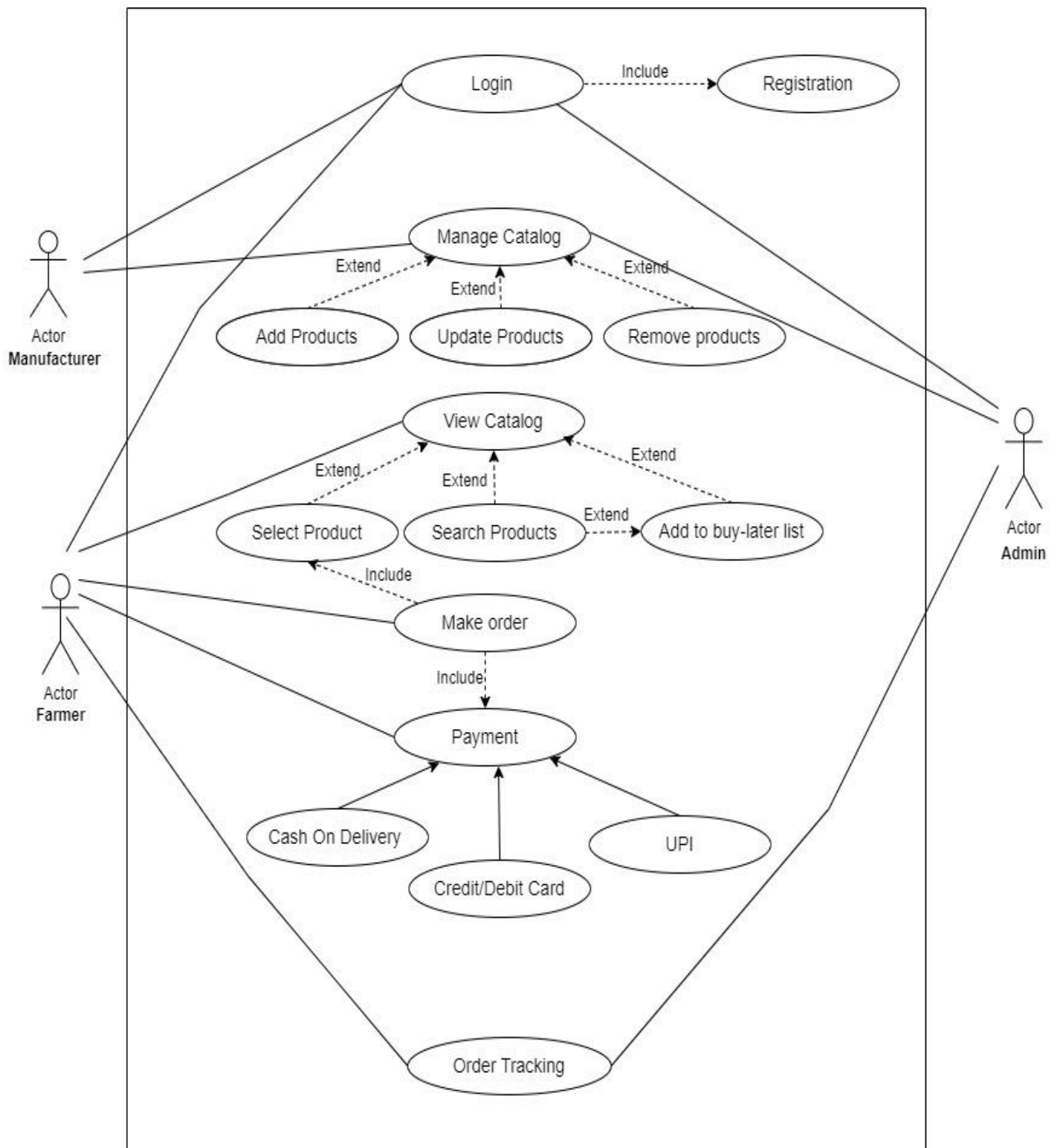
User Training and Support: User manuals, guides, and support documentation will be provided to assist farmers, manufacturers, and administrators in using the application effectively.

User Adoption: The online store will be well-received by farmers and manufacturers, leading to a significant number of users actively utilizing the platform for their agriculture product needs.

Question 29: This project Requirements Priority

Sr.no	Requirement Description	Priority
BR002	Farmers should be able to search for available products in fertilizers, seeds, and pesticides	10
BR010	The application should support multiple payment options (Cash on, Card, and UPI).	9
BR001	The farmer and Manufacturer can register/login through email-ID or phone number.	8
BR008	The application should have a user-friendly interface that is accessible and compatible with both web and mobile platforms.	8
BR003	Manufacturers should be able to upload/delete/edit and display their products in the application	7
BR009	Farmers should receive email or SMS notifications regarding order confirmations, payment receipts, and delivery update	7
BR004	Farmers should be able to add products to a wish list or favorites list for future reference	7
BR005	The application should offer a secure and convenient payment gateway for online transactions	7
BR006	Manufacturers should have the ability to update availability in real-time.	7
BR007	Farmers should be able to view and compare product ratings and reviews from other users	7

Question 30: Use Case Diagram



Question 31: (minimum 5) Use Case Specs

Use Case: UC001	Login/Registration
Actors:	Farmer, Manufacturer
Description:	This use case allows farmers and manufacturers to log in or register in the system using their email ID or phone number.
Preconditions:	The user must have a valid email ID or phone number
Postconditions:	The user is successfully logged in or registered in the system.
Main Flow:	<ul style="list-style-type: none">• The user selects the login or registration option.• If logging in, the user enters their email ID or phone number and password.• When registering, the user provides their email ID or phone number and creates a secure password.• The system validates the credentials and grants access to the user.
Alternate Flows:	<ul style="list-style-type: none">• If the user enters invalid credentials during login:• The system displays an error message and prompts the user to enter the correct credentials.• If the user tries to register with an existing email ID or phone number:• The system displays an error message and prompts the user to provide a unique email ID or phone number.

Use Case: UC004	Manage Catalog (Manufacturer)
Actors:	Manufacturer
Description:	This use case describes the functionality of a manufacturer managing the catalog of products in the online agriculture product store. The manufacturer can add new products, update existing products, and remove products from the catalog.
Preconditions:	The manufacturer is logged into the system.
Postconditions:	The catalog of products is updated with the changes made by the Manufacturer.
Main Flow:	<ul style="list-style-type: none">• Manufacturer accesses the "Manage Catalog" section.• Selects option to add new product, update existing product, or remove product.• For adding new products, provides details and submits for validation and catalog update.• For updating existing product, selects product, updates fields, and submits changes.• For removing product, selects product, confirms removal, and system updates catalog.
Alternate Flows:	<ul style="list-style-type: none">• If the particular product is already added, then the system will prompt the manufacturer with the duplicate value pop up message.

Use Case: UC003	View Catalog
Actors:	Farmer
Description:	This use case allows farmers to view the details, ratings, and reviews of a specific product
Preconditions:	The farmer is logged into the system
Postconditions:	The product details, ratings, and reviews are displayed to the farmer.
Main Flow:	<ul style="list-style-type: none"> The farmer selects a specific product from the search results or product listing. The system retrieves and displays the product details, ratings, and reviews.
Alternate Flows:	<ul style="list-style-type: none"> If the product does not have any ratings or reviews: <ul style="list-style-type: none"> ➤ The system displays a message indicating that “There are no ratings or reviews for the product”. If the product is out of stock: <ul style="list-style-type: none"> ➤ The system displays a message indicating that “The product is out of stock”.

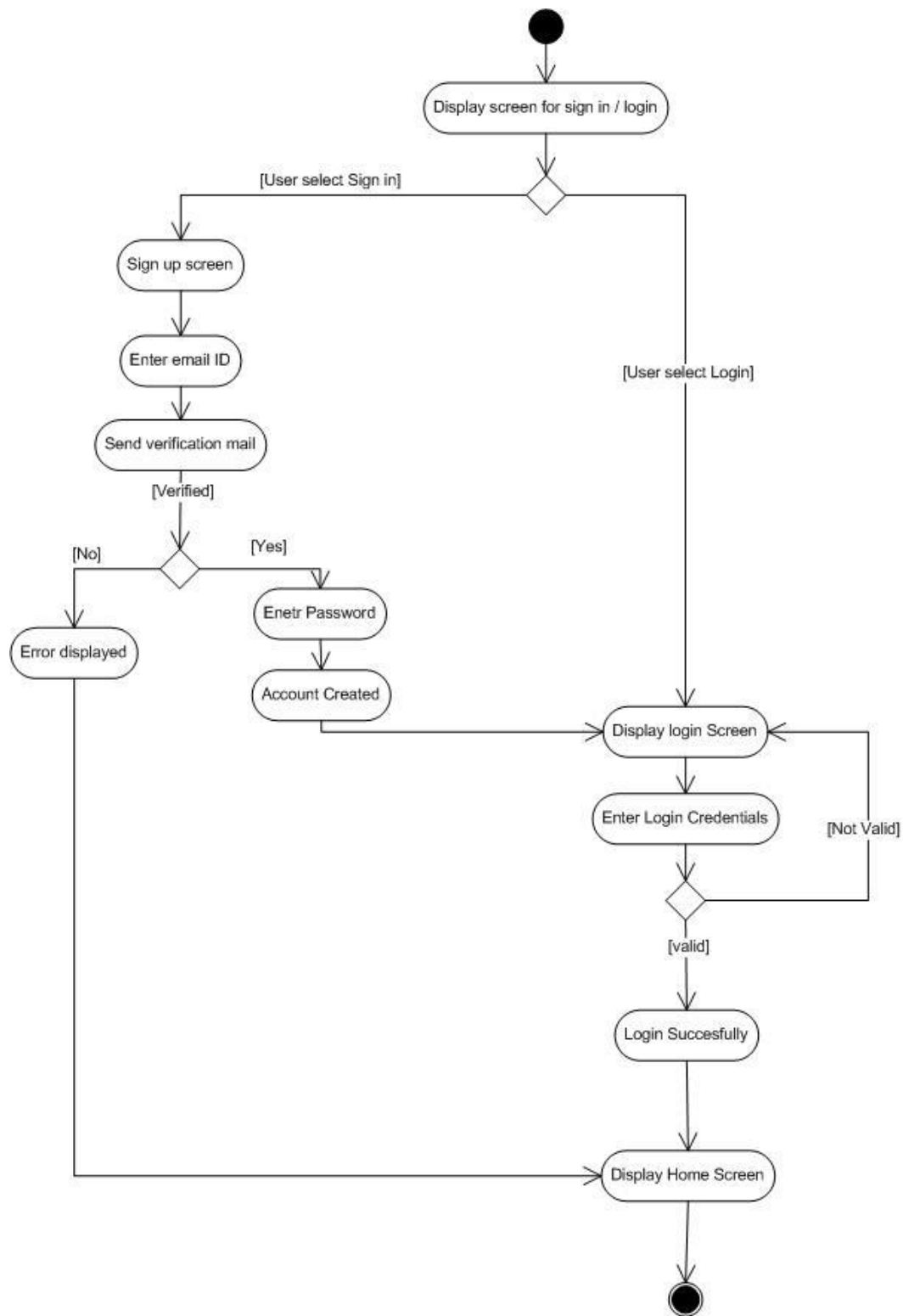
Use Case: UC002	Search Products
Actors:	Farmer
Description:	This use case allows farmers to search for available products in fertilizers, seeds, and pesticides.
Preconditions:	The farmer is logged into the system.
Postconditions:	The search results for the specified product are displayed.
Main Flow:	<ul style="list-style-type: none"> The farmer enters the search query for the desired product. The system searches the product catalog for matching results. The system displays the search results to the farmer.
Alternate Flows:	<ul style="list-style-type: none"> If there are no matching results for the search query: The system displays a message indicating that “No products were found for the given query”.

Use Case: UC004	Add to Buy Later List
Actors:	Farmer
Description:	This use case allows farmers to add products to their Buy-Later list.
Preconditions:	The farmer is logged into the system
Postconditions:	The selected product is successfully added to the farmer's Buy-Later list
Main Flow:	<ul style="list-style-type: none"> The farmer selects the option to add a product to the Buy-Later list. The system adds the selected product to the farmer's Buy-Later list.
Alternate Flows:	<ul style="list-style-type: none"> If the product is already present in the farmer's wish list: <ul style="list-style-type: none"> ➤ The system displays a message indicating that the product is already added to the Buy-Later list.

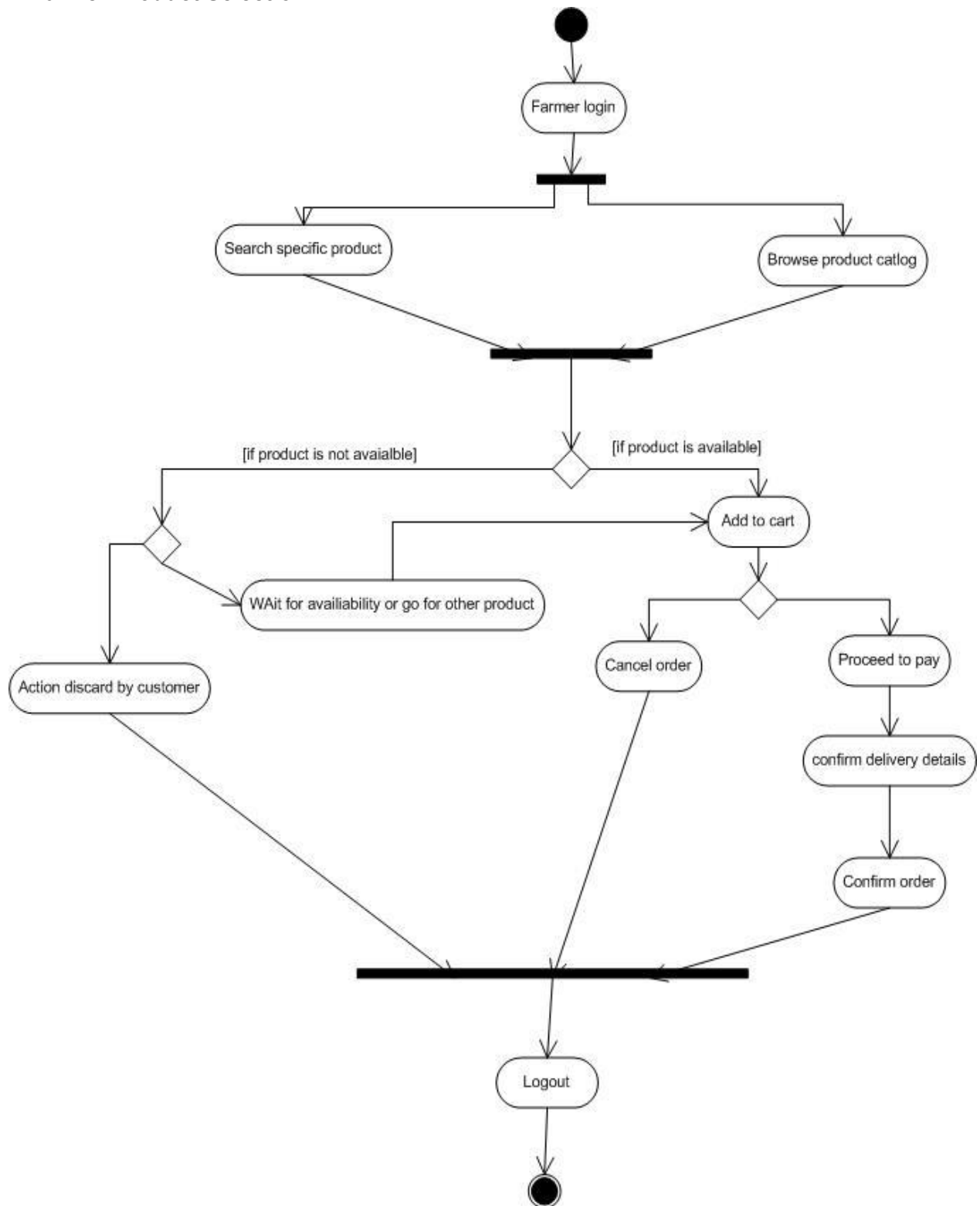
Use Case: UC004	Make Order
Actors:	Farmer
Description:	This use case allows farmers to purchase products using the available payment options (Cash on Delivery, Card, UPI).
Preconditions:	The farmer is logged into the system
Postconditions:	The farmer successfully completes the purchase transaction.
Main Flow:	<ul style="list-style-type: none"> • The farmer goes to catalog or their buy-later list and proceeds to the checkout process for the product he selected. • The farmer selects the preferred payment option (Cash on Delivery, Card, UPI). • The system prompts the farmer to ask for the necessary payment details. • The farmer provides the required payment information. • The system processes the payment and confirms the successful transaction.
Alternate Flows:	<ul style="list-style-type: none"> • If the payment fails during the transaction: <ul style="list-style-type: none"> ➤ The system displays an error message and prompts the farmer to retry the payment or choose an alternative payment method.

Question 32: (minimum 5) Activity Diagrams

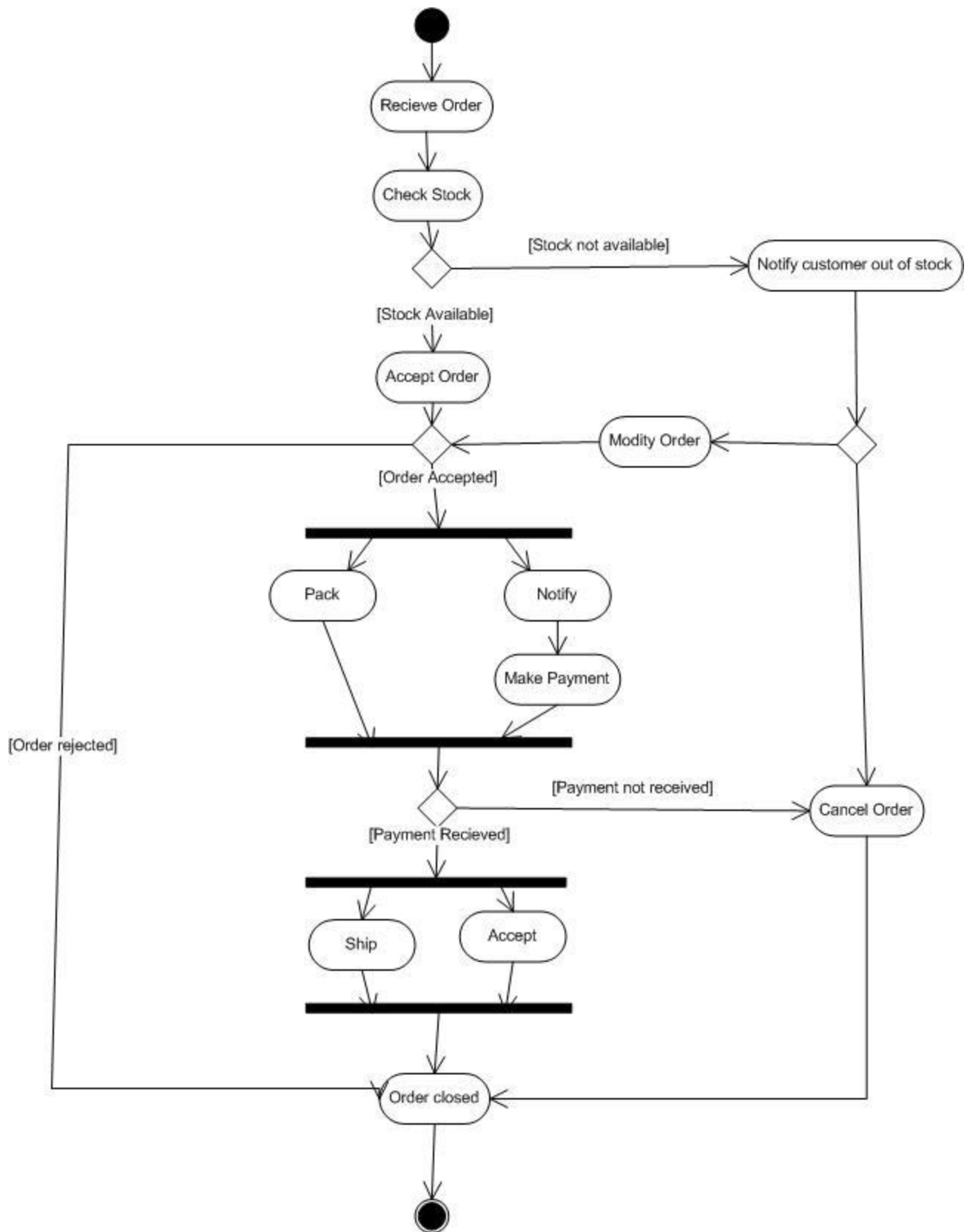
1.Login



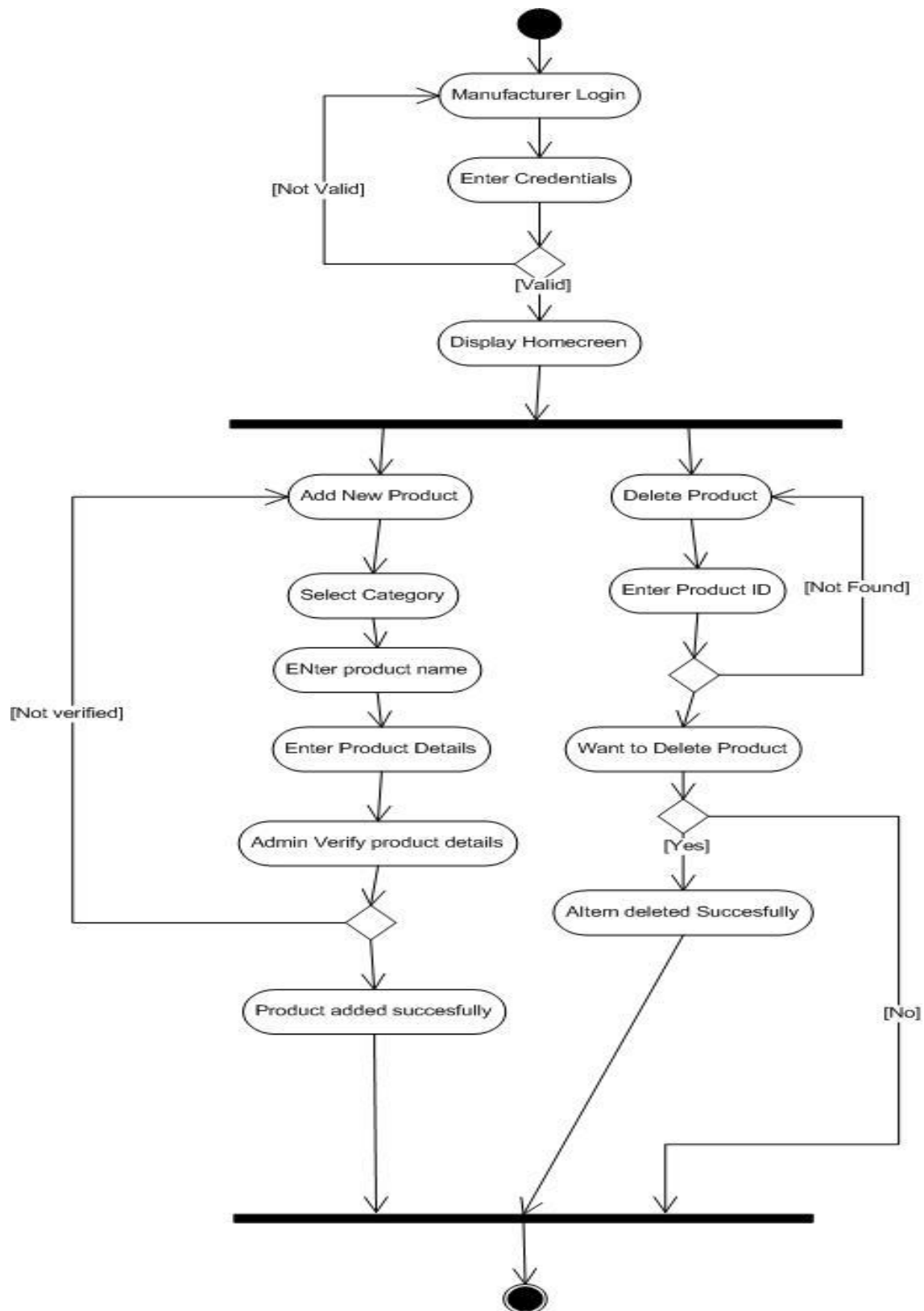
2. Farmer Product Selection



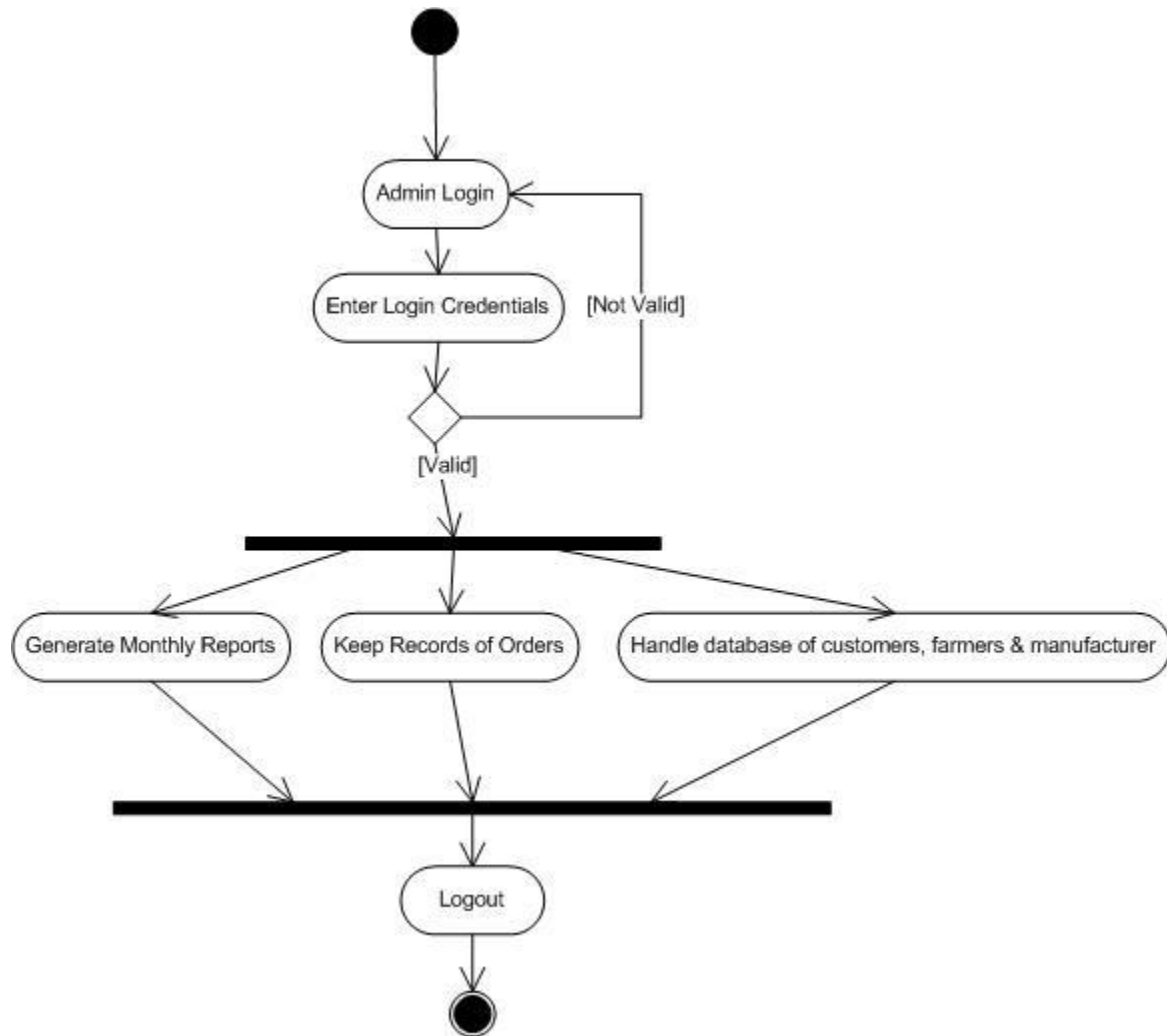
3. Placing Order



4.Add or Delete Product Detail



5. Admin Work



Question 33: Functional Requirements**Functional Requirements with priorities**

Sr.no	Req. Name	Requirement Description	Priority
FR0001	User Registration	Users (farmers, manufacturers) should be able to register with the application by providing their email ID and creating a secure password	10
FR0002	User Login	Users should be able to login to their accounts using their registered email ID and password	10
FR0003	Product Catalog	The application should have a catalog of fertilizers, seeds, and pesticides, displaying their details such as name, description, price, and availability.	9
FR0004	Product Search	Users should be able to search for specific products by entering keywords or using filters	9
FR0005	Buy-later List	Users should be able to add products to a buy-later list for future reference.	7
FR0006	Payment Gateway	The application should provide a user-friendly payment gateway that supports cash-on-delivery (COD), credit/debit card, and UPI options	9
FR0007	Order Confirmation	Users should receive email confirmation regarding their order status after completing the purchase.	8
FR0008	Delivery Tracker	Users should be able to track the whereabouts of their orders through a delivery tracking system	8
FR0009	Manufacturer Product Submission	Fertilizer, seed, and pesticide manufacturers should be able to submit their product details to be displayed in the catalog.	9
FR0010	Manufacturer Account Management	Manufacturers should be able to manage their account information and update product details.	6
FR0011	Admin Dashboard	The application should have an admin dashboard for managing user accounts, product listings, and order information.	8
FR0012	User Profile	Users should have a profile section where they can manage their personal information, addresses, and order history.	7
FR0013	Product Reviews and Ratings	Users should be able to view and submit reviews and ratings for products	6

Non-Functional requirements with priorities

Sr.no	Req. Name	Requirement Description	Priority
NFR001	Page Loading Time	Each page should load within 2 seconds to provide a smooth user experience.	9
NFR002	Web Content Accessibility Guidelines (WCAG) 2.1	The system must meet WCAG 2.1 standards to ensure accessibility for users with disabilities.	9
NFR003	Scalability	The application should be able to handle a large number of users and product listings without significant performance degradation.	8
NFR004	Security	The application should implement robust security measures to protect user data, including encryption, secure authentication, and protection against unauthorized access.	8
NFR005	Mobile Responsiveness	The application should be responsive and optimized for mobile devices, providing a seamless experience on smartphones and tablets.	9
NFR006	Reliability	The application should be reliable, with minimal downtime and high availability.	7

Question 34: Minimum 5 page designs

1. Login Page

SOONY

online Agriculture store

Click here to buy products

Click here to sell your products

Email ID

Password

Log In

Not Registered ? Click here to register.

2. Registration

Sign Up Form

○○○

Welcome to Online Agriculture store

SOONY

Create a New Account

Come join our community! Let's set up your account. Already have one? [Sign in here](#)

You can also sign in with these:

Mobile number

Google

User Name:

john doe

Email:

inbox@email.com

Password:

By submitting the form you agree to our [Terms of Service](#)

Join

3. Store

Your PROFILE

Explore

SEEDS

PESTISIDES

FERTILIZERS

< > +

Search

x

ONLINE AGRI STORE

SEEDS

PESTISIDES

FERTILIZERS

SOYA SEED

☆☆☆☆☆

CORN SEED

☆☆☆☆☆

WHEET SEED

☆☆☆☆☆

CHIA SEED

☆☆☆☆☆

WHEET SEED


☆☆☆☆☆

COTTON SEED

☆☆☆☆☆

4.Order Placement


Order Placement



 Deliver to: SS College Road, Mumbai, 400008 [Change](#)

%


Available offers







10% off on SBI Debit Card

Show More 

Item	Numbers	Price
XYZ	<div>1  </div>	2200

Total

 Shop more products



Place Order

Question 35: Tools (Visio, Balsamiq)

Visio:

- **Versatile Diagramming Tool:** Visio is a powerful and versatile diagramming tool that allows users to create a wide range of diagrams, such as flowcharts, organizational charts, network diagrams, and more. It provides a comprehensive set of shapes, templates, and features to effectively visualize complex information and processes.
- **Professional and Polished Output:** With Visio, users can create professional-looking diagrams with customizable styles, themes, and formatting options. It offers precise alignment and spacing tools, as well as options to add annotations, labels, and callouts, resulting in visually appealing and polished output.
- **Collaboration and Integration:** Visio integrates well with other Microsoft Office applications, making it easy to collaborate and share diagrams with team members. It allows real-time collaboration, enabling multiple users to work on the same diagram simultaneously, improving productivity and facilitating effective teamwork.
- **Data-driven Diagrams:** Visio provides functionality for creating data-driven diagrams, where users can link shapes and diagrams to external data sources such as Excel, SharePoint, or SQL Server. This allows for automatic updates and synchronization of data, ensuring accuracy and efficiency in diagram creation.
- **Extensibility and Customization:** Visio offers a range of customization options, allowing users to create their own shapes, templates, and stencils. It also supports the creation of macros and add-ins, providing flexibility and extensibility for specific business needs or industry requirements.

Balsamic:

- **Rapid Wireframing:** Balsamiq is known for its simplicity and speed in creating wireframes. It offers a wide range of pre-built UI components, such as buttons, text boxes, menus, and icons, that can be easily dragged and dropped onto the canvas, allowing for quick and efficient creation of basic wireframe structures.
- **Sketch-like Aesthetics:** Balsamiq's design approach focuses on sketch-like aesthetics, intentionally keeping the wireframes low-fidelity and hand-drawn in appearance. This helps to convey the concept and functionality of the interface without getting caught up in visual details, making it ideal for early-stage prototyping and concept validation.
- **Collaboration and Feedback:** Balsamiq provides features for collaborative design and feedback gathering. Multiple team members can work on a wireframe simultaneously, and it allows for easy sharing and exporting of wireframes for feedback collection from stakeholders and clients. This fosters effective communication and iteration during the design process.
- **User-Friendly Interface:** Balsamiq has a user-friendly interface with a minimal learning curve. Its drag-and-drop functionality, simple toolbar, and intuitive controls make it easy for users, even those without design expertise, to quickly grasp and start creating wireframes.
- **Cross-Platform Compatibility:** Balsamiq is available as a desktop application for Windows, macOS, and Linux, as well as a web-based version. This cross-platform compatibility allows users to work on their preferred operating system and access their wireframes from anywhere with an internet connection, enhancing flexibility and accessibility.

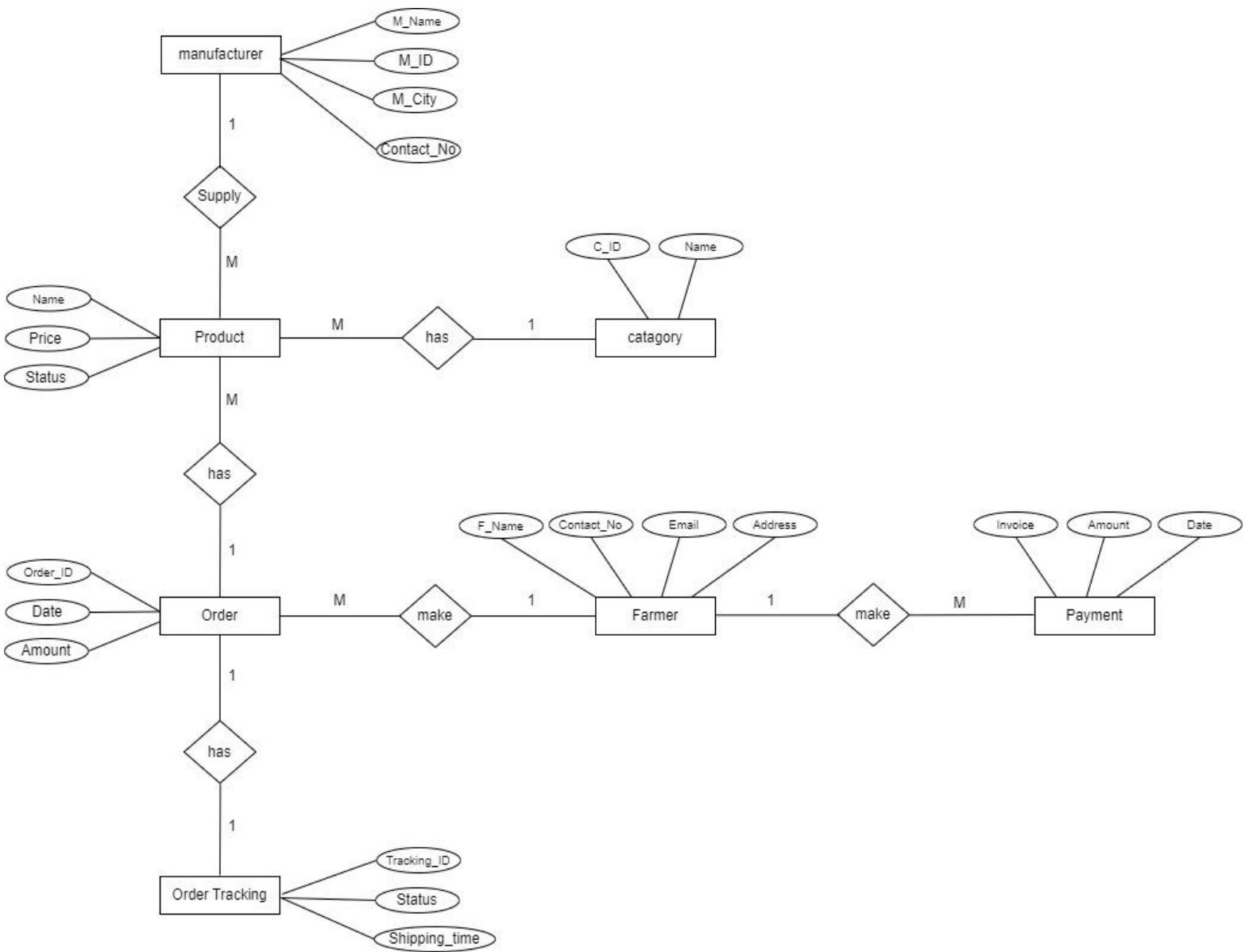
Question 36: RTM

Req ID	Req Name	Req Description	Design	D1	T1	D2	T2	D3	T3	D4	T4	UAT
FR0001	User Registration	Users register with email and password	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	Done
FR0002	User Login	Users' login with email and password	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	Done
FR0003	Product Catalog	Catalog of fertilizers, seeds, and pesticides with details	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	In Progress
FR0004	Product Search	Search for products using keywords or filters	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	In Progress
FR0005	Buy-later List	Users can add products to a list for future reference	Design Doc	Done	Pass	Done	Pass	Done	Defect	-	-	-
FR0006	Payment Gateway	User-friendly gateway with multiple payment options	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	In Progress	-
FR0007	Order Confirmation	Email confirmation of order status	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Defect	-
FR0008	Delivery Tracker	Tracking system for order whereabouts	Design Doc	Done	Pass	Done	Pass	Done	In Progress	-	-	-
FR0009	Manufacturer Product Submission	Manufacturers can submit product details	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	In Progress
FR0010	Manufacturer Account Management	Manufacturers manage accounts and update products	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	In Progress
FR0011	Admin Dashboard	Dashboard for managing users, products, and orders	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	In Progress
FR0012	User Profile	Users manage personal info, addresses, and order history	Design Doc	Done	Pass	Done	Pass	Done	Pass	In Progress	-	-
FR0013	Product Reviews and Ratings	Users view and submit reviews/ratings	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Defect	-
NFR001	Page Loading Time	Page load within 2 seconds	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Defect	-
NFR002	Web Content Accessibility Guidelines (WCAG) 2.1	Meet WCAG 2.1 standards for accessibility	Design Doc	Done	Pass	Done	Pass	Done	Pass	Done	Pass	Done
NFR003	Scalability	Handle large user and product load without performance impact	Design Doc	Done	Pass	Done	Pass	Done	In Progress	-	-	-
NFR004	Security	Robust security measures for data protection	Design Doc	Done	Pass	Done	Pass	Done	Pass	In Progress	-	-
NFR005	Mobile Responsiveness	Responsive and optimized for mobile devices	Design Doc	Done	Pass	Done	Pass	Done	Pass	In Progress	-	-
NFR006	Reliability	Reliable with minimal downtime and high availability	Design Doc	Done	Pass	Done	Defect	-	-	-	-	-

Question 37: 10 Test Case Documents

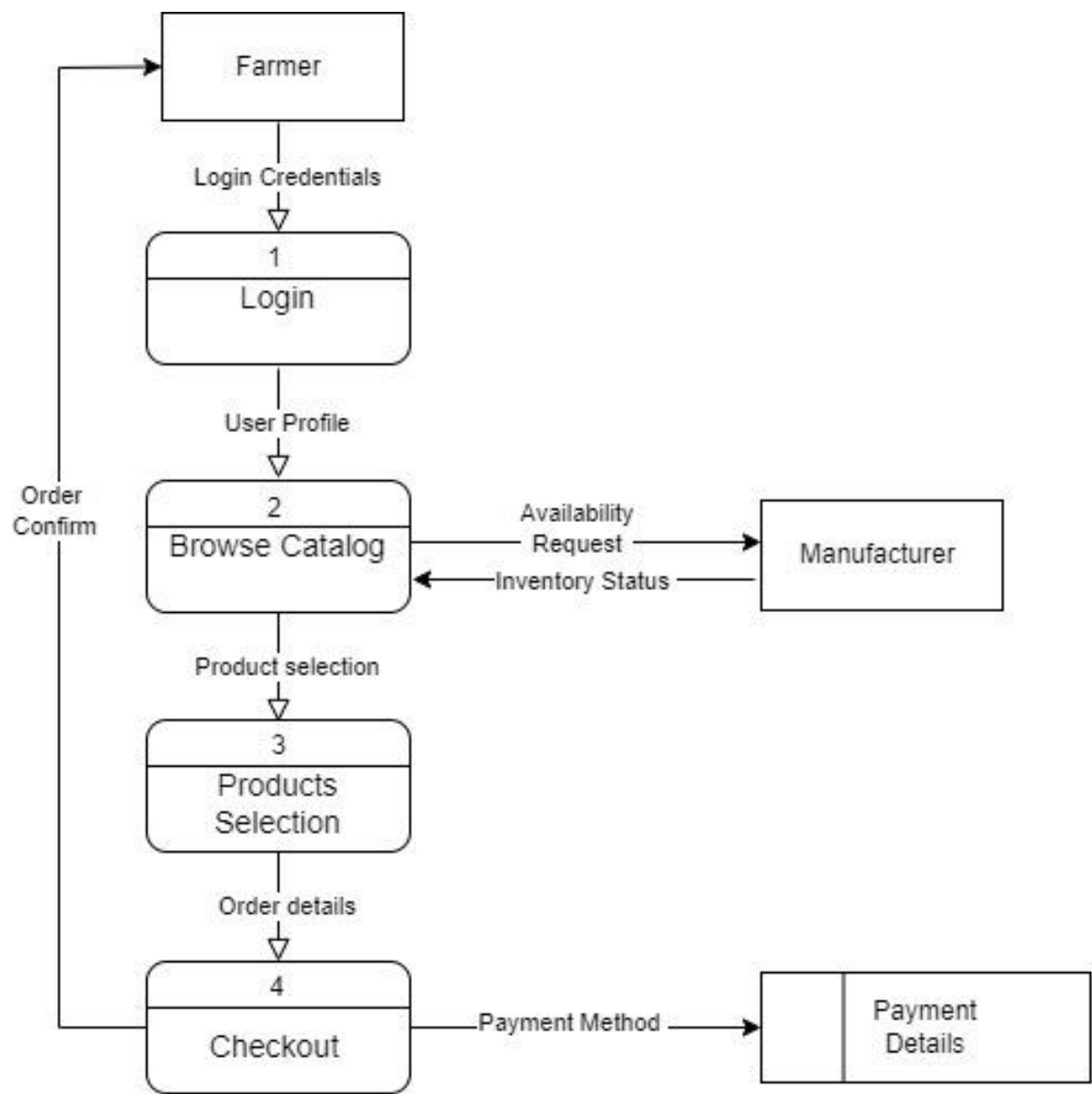
Test Case ID	Test Scenario	Test Steps	Expected Result	Pass/Fail
TC001	User Registration	1. Navigate to the registration page	User is redirected to the registration page	Pass
		2. Enter valid email ID and password	User successfully registers	
TC002	User Login	1. Navigate to the login page	User is redirected to the login page	Pass
		2. Enter valid email ID and password	User successfully logs in	
TC003	Product Catalog Display	1. Navigate to the product catalog	Product catalog is displayed with correct details	Pass
TC004	Search for Product	1. Enter a keyword or select filters	Products matching the search criteria are displayed	Pass
TC005	Add Product to Buy-Later List	1. Select a product	Product is added to the buy-later list	Pass
TC006	Payment Process	1. Proceed to checkout	User is directed to the payment gateway	Pass
		2. Choose a payment method (COD, card, UPI)	Payment is successfully processed	
TC007	Order Confirmation and Email Notification	1. Complete the purchase	User receives an email confirmation with order details	Pass
TC008	Order Tracking	1. Visit the order tracking page	Order tracking page is displayed	Pass
		2. Enter the order ID or select from order history	Current status and location of the order are displayed	
TC009	Manufacturer Product Submission	1. Login as a manufacturer	Manufacturer is redirected to the product submission page	Pass
		2. Fill in the product details and submit	Product details are successfully submitted	
TC010	User Profile Management	1. Visit the user profile section	User profile information is displayed	Pass
		2. Update personal information, addresses, and order history	Changes are saved and reflected in the user profile	

Question 38: DB Design-ER Diagram



Question 39: Data Flow Diagram

A data flow diagram (DFD) is a graphical representation that illustrates the flow of data within a system. It shows how data moves from input sources, through processes, to output destinations. DFDs use symbols to represent data flows, processes, data stores, and external entities. They provide a clear and concise overview of a system's data flow, helping to analyze and improve its functionality and efficiency.



Question 40: Change Request

Handling change requests in a project involves a systematic process to ensure that changes are properly evaluated, implemented, and managed. Here's a general approach for handling change requests:

1. Identify the change request due to the Government Taxation structure change.
2. Analyze the impact of the change on the project.
3. Plan the implementation of the change.
4. Seek approval from relevant stakeholders.
5. Implement the approved change, following the V-model processes.
6. Verify and validate the change through testing.
7. Update project documentation to reflect the change.
8. Communicate the change to the project team and stakeholders.
9. Validate the effectiveness of the change.
10. Establish a change control process to manage future requests.

Question 41: Change Request Vs an Enhancement

As a BA, I would classify the request to add the ability for farmers to sell their crop yields and introduce an auction system as an enhancement rather than a change request.

The reason for this classification is that the original project scope focused on facilitating farmers to buy agriculture products, not sell their own products.

- Understand the reason for the change
- Understand the impact of the change
- Understand the effort required to implement the change
- Ensure that the change request follows the predetermined approval process

Question 42: Estimations

Below is the rough estimation for the man-hours required to implement this enhancement

- **Requirements Gathering and Analysis: 20-40 man-hours**

This includes discussions with stakeholders, understanding requirements, and documenting them.

- **Impact Analysis and Feasibility Assessment: 10-20 man-hours**

For evaluating the impact on the existing system, identifying risks, and determining the feasibility of the enhancement.

- **Requirements Documentation: 20-40 man-hours**

For Documenting the detailed requirements, including functional and non-functional aspects of the selling and auction system.

- **Development and Integration: 80-160 man-hours**

Implementing the new features, including backend and frontend development, database changes, and integration with existing functionality.

- **Testing and Quality Assurance: 40-80 man-hours**

Conducting unit testing, integration testing, and user acceptance testing to ensure the functionality is working as expected and meets the defined requirements.

- **Training and Documentation: 10-20 man-hours**

Creating user manuals, training materials, and conducting training sessions for farmers and other users.

- **Project Management and Coordination: 20-40 man-hours**

Overseeing the project, coordinating with stakeholders and development team, and managing any change requests or updates.

Based on these estimations, the total man-hours required for this enhancement can range from approximately 250 to 350 man-hours.

Question 43: UAT

UAT execution: During the UAT phase, I would provide the stakeholders with access to the final product and guide them through the testing process. They would be requested to perform various actions, such as registering as users, browsing the product catalog, adding products to the buy-later list, making purchases, and tracking orders. I would also encourage them to provide feedback and report any issues they encounter.

UAT (User Acceptance Testing) Acceptance Process:

User Acceptance Testing (UAT) is the final phase of testing where end-users verify the system's functionality, usability, and overall readiness. The UAT acceptance process for this project would involve the following steps:

Planning: Create a UAT plan outlining the objectives, scope, test scenarios, and test cases to be executed during UAT. Define the criteria for a successful UAT.

Test environment setup: Set up the necessary test environment, including the deployment of the final product and any required test data. Ensure that the environment accurately reflects the production environment.

Test execution: Provide the stakeholders, including Peter, Kevin, and Ben, with access to the UAT environment. They would perform various actions, such as registering as users, browsing the product catalog, making purchases, and tracking orders, as per the test plan.

Issue reporting: Encourage the stakeholders to report any issues, bugs, or deviations from expected behavior they encounter during UAT. Provide them with clear instructions on how to document and report the issues.

Issue resolution: Work closely with the development team to address and resolve the reported issues. The team would investigate the reported problems, fix any bugs or errors, and ensure that the system functions as expected.

Retesting: After issue resolution, stakeholders would retest the fixed functionalities to ensure that the reported issues have been successfully resolved. They would validate that the system now meets their requirements and expectations.

User sign-off: Once the stakeholders are satisfied with the system's performance and all reported issues have been resolved, they would provide formal sign-off to indicate their acceptance of the final product. This sign-off would confirm that the system is ready for deployment.

Documentation: Document the UAT results, including the test scenarios executed, issues reported, and their resolution. Update the user manuals or any relevant documentation based on the stakeholders' feedback and final system behavior.

Question 44: Project Closure Document

The Project Closure Report is the final document produced upon the completion of a project. The report details everything to do with the project is often used by the various stakeholders involved in the project to assess the success of the project. Besides the assessment of the project's success, the document is also an invaluable tool to use for identifying the best practices to ensure that all future projects go on smoothly.

Introduction:

- The Online Agriculture Product Store project aimed to facilitate farmers' access to agricultural products through an online platform.
- It addressed the challenges faced by farmers, and its significance for Mr. Henry was to help fulfill the dreams of farmers in remote areas.
- Key stakeholders like Peter, Kevin, and Ben provided valuable insights and requirements to ensure the project's success.

Project Summary:

- The project was executed by APT IT SOLUTIONS under the CSR initiative of Mr. Henry's company, SOONY.
- It was completed within the 18-month duration and the allocated budget of 2 Crores INR.
- The project team from APT IT SOLUTIONS, including Mr. Karthik, Mr. Vandanam, and other team members, successfully developed the online agriculture product store.

Objectives and Deliverables:

- The project aimed to provide a user-friendly platform for farmers to purchase agricultural products.
- Accomplished deliverables include user registration, a comprehensive product catalog, search functionality, payment gateway, delivery tracking, and user profiles.

Stakeholder Engagement:

- Mr. Henry, Peter, Kevin, and Ben actively participated throughout the project by providing requirements, feedback, and participating in user acceptance testing (UAT).

Achievements and Challenges:

- The project successfully implemented key features, adhered to the timeline and budget, and met defined requirements.
- Challenges included technical complexities and stakeholder coordination, which were overcome through collaboration and effective communication.

Lessons Learned:

- Lessons learned include the importance of thorough requirement gathering, stakeholder engagement, and comprehensive testing and quality assurance.
- Recommendations include continuous user feedback incorporation, expansion of product offerings, and enhancing performance and scalability.

Project Performance:

- The project performed successfully in meeting objectives, adhering to schedule and budget, and achieving user satisfaction.
- Metrics and KPIs indicated the project's success and impact on facilitating farmers' access to agricultural products.

User Acceptance Testing (UAT) Results:

- UAT involved stakeholders testing the final product, reporting issues, resolving them, and obtaining sign-off and acceptance.
- Stakeholders' involvement and feedback contributed to the refinement of the final product.

Recommendations:

- Recommendations include future enhancements such as expanding product offerings, incorporating customer feedback mechanisms, and optimizing performance.

Project Sign-off:

- Formal sign-off statements from key stakeholders affirming their acceptance and satisfaction with the final product.

Appendix:

- Attach relevant supporting documents such as project requirements, design specifications, test plans, and user manuals.
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