**Nurturing Process - Capstone Project1 – Part -2/3 V2D2- August 2024**

**Question 1: 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 ?**

**Ans:**

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| --- |
| ***Quarter 1 Audit Report (Requirement Gathering Phase)*** |
| **Stage** | **Requirement Gathering Phase** |
| **Completed** | 10 weeks (Week 1 to Week 10) |
| **Checklist** | - BRD Template |
|   | - Elicitation Results Report |
|   | - Duplicate Requirements Report |
|   | - Grouping of functionalities/features with client sign-off |
|   | - Email communication (To, CC, BCC) |

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| ***Quarter 2 Audit Report (Requirement Analysis Phase)*** |
| **Stage** | **Requirement Analysis Phase** |
| **Completed** | 7 weeks (Week 16 to Week 23) |
| **Checklist** | - UML Diagrams |
|   | - Business-to-Functional Requirements Mapping |
|   | - Client Sign-Off Documents |
|   | - RTM Document Version Control |
|   | - Email Communication (To, CC, BCC) |

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| ***Quarter 3 Audit Report (Design Phase)*** |
| **Stage** | **Design Phase** |
| **Completed** | 7 weeks (Week 30 to Week 37) |
| **Checklist** | - Utilization of Tools |
|   | - Documented Evidence on Client Communication |
|   | - Stakeholder MOM (Minutes of Meeting) |
|   | - Email Communication (To, CC, BCC) |
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| ***Quarter 4 Audit Report (Development Phase)*** |
| **Stage** | **Development Phase** |
| **Completed** | 20 weeks (Week 40 to Week 60) |
| **Checklist** | - JAD Session Report |
|   | - End User Manual Preparation Document |
|   | - BA and Developer MOM |
|   | - Email Communication (To, CC, BCC) |
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| ***Quarter 5 Audit Report (Testing Phase)*** |
| **Stage** | **Testing Phase** |
| **Completed** | 20 weeks (Week 58 to Week 78) |
| **Checklist** | - Test Case Summary |
|   | - Training Report to End Users |
|   | - Lessons Learnt Document |
|   | - Email Communication (To, CC, BCC) |
|   |   |

***Question 2: BA Approach Strategy***

**Answer:**

**BA Approach Strategy**

**1. Elicitation Techniques to Apply**

To ensure complete and accurate requirements, the following elicitation techniques will be applied:

1. **Brainstorming** – Collaborate with stakeholders to generate creative ideas and identify potential solutions.
2. **Document Analysis** – Review existing project documentation for relevant information.
3. **Interviews** – Conduct one-on-one discussions with key stakeholders for detailed inputs.
4. **Focus Groups** – Facilitate focused discussions with a small group of stakeholders to validate and refine requirements.
5. **Workshops** – Host interactive sessions to collectively finalize requirements.
6. **Observation** – Study stakeholders’ current workflows to understand their needs.
7. **Prototyping** – Develop mockups or wireframes to validate expectations.
8. **Reverse Engineering** – Analyze the existing system to understand legacy functionalities.

**2. Stakeholder Analysis (RACI)**

The RACI approach will be used to identify stakeholders and define their roles and responsibilities:

1. **Identify Stakeholders:** Categorize stakeholders (e.g., Project Manager, Developers, Admins, Testers).
2. **Define Roles and Responsibilities:** Define the roles as **Responsible**, **Accountable**, **Consulted**, or **Informed** (RACI).
3. **Create RACI Matrix:** Assign each stakeholder their respective RACI roles.
4. **ILS (Interest, Level, Support):** Evaluate stakeholder interest, their level in the organization, and support for the project.

**3. Documents to Write**

The following documents will be prepared during the project lifecycle:

* **BRD (Business Requirements Document):** Outlines business needs and objectives.
* **FRD (Functional Requirements Document):** Translates business requirements into technical specifications.
* **Use Case Documentation:** Details workflows and interactions within the system.
* **RTM (Requirements Traceability Matrix):** Tracks requirements through the project lifecycle.
* **Test Case Documents:** Defines scenarios for testing.
* **UAT (User Acceptance Testing) Checklist:** Ensures the final product meets business requirements.

**4. Process to Follow for Document Sign-Off**

1. Prepare draft versions of documents and share with stakeholders.
2. Host review meetings with stakeholders to discuss and finalize content.
3. Document changes, if any, during stakeholder reviews.
4. Obtain stakeholder approval via electronic or manual signatures.
5. Finalize the signed-off versions and archive them for project records.

**5. Approvals from the Client**

* Present the finalized BRD and FRD to the client for validation.
* Conduct review sessions to address client concerns or revisions.
* Document approvals through signed agreements or emails for audit purposes.

**6. Communication Channels to Establish and Implement**

* **Internal Team Communication:** Use project management tools like Jira, Slack, or Microsoft Teams.
* **Client Communication:** Schedule regular meetings via video conferencing tools (e.g., Zoom, MS Teams).
* **Email Updates:** Share weekly reports to stakeholders via formal emails.
* **Meeting MOMs:** Maintain and share Minutes of Meeting post every discussion.

**7. Handling Change Requests**

1. Document the requested change in a Change Request (CR) form.
2. Conduct an impact analysis to assess changes on scope, timeline, and budget.
3. Discuss the CR with the technical team and stakeholders.
4. Obtain client approval before implementing changes.
5. Update all impacted project artifacts and re-baseline the project plan if needed.

**8. Updating Progress to Stakeholders**

* Share **Weekly Status Reports**: Include milestones achieved, issues encountered, and resolutions.
* Conduct **Bi-weekly Review Meetings**: Discuss progress and next steps.
* Maintain a **Project Dashboard**: Use tools like MS Project or Jira for real-time tracking.

**9. UAT Sign-Off Process**

1. Prepare UAT Test Cases and share them with the client for approval.
2. Conduct UAT sessions where the client tests the system against agreed requirements.
3. Document feedback and resolve any issues raised during UAT.
4. Obtain final sign-off from the client via the **Client Project Acceptance Form**.

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

**Answer:** **3-Tier Architecture: Explanation and Illustration**

 3-Tier Architecture is a software development pattern that organizes an application into three logical layers. These layers are designed to separate responsibilities, improve scalability, maintainability, and reusability, and make the system easier to manage and update.

**Layers of 3-Tier Architecture**

**1. Presentation Layer (Client Layer)**

* **Purpose:** The user interface (UI) of the application, where the user interacts with the system.
* **Components:** Web browsers, mobile applications, or desktop applications.
* **Role:** Captures user input and displays the processed data.
* **Technology Examples:** HTML, CSS, JavaScript, React, Angular.

**2. Application Layer (Business Logic Layer)**

* **Purpose:** Contains the core functionality, business rules, and logic of the application.
* **Components:** APIs, middleware, and services that process requests and responses.
* **Role:** Handles communication between the presentation and data layers, processes user requests, and implements business rules.
* **Technology Examples:** Java, Python, Node.js, .NET.

**3. Data Layer (Database Layer)**

* **Purpose:** Responsible for storing and retrieving data.
* **Components:** Databases, data storage systems, and data access APIs.
* **Role:** Manages application data, performs CRUD (Create, Read, Update, Delete) operations.
* **Technology Examples:** MySQL, PostgreSQL, MongoDB, Oracle DB.

**Benefits of 3-Tier Architecture**

1. **Scalability:** Each layer can be scaled independently.
2. **Maintainability:** Changes to one layer do not directly affect the others.
3. **Security:** Business logic and data are separated from the user interface.
4. **Reusability:** Components can be reused in different applications.
5. **Performance:** Reduces system complexity and enhances efficiency.

**3-Tier Architecture:**

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

**BA Approach Strategy for Framing Questions**

Based on the case study, where Mr. Henry plans to develop an online store to bridge gaps in agricultural procurement, the following framework is applied to design questions for stakeholders.

1. 5W 1H Framework

| Category | Question |
| --- | --- |
| Who | Who are the end users of the platform (e.g., farmers, manufacturers, distributors)? |
|  | Who will manage the application backend and data updates? |
| What | What are the must-have features for the platform (e.g., login, catalog search, payment)? |
|  | What kind of support is expected for first-time users (e.g., tutorials, customer support)? |
| When | When should the application go live (tentative launch date)? |
|  | When will user training sessions be conducted? |
| Where | Where should the application store user and order data (cloud/on-premise)? |
|  | Where are the majority of users located (to optimize delivery tracking)? |
| Why | Why are multiple payment options (COD, UPI, credit/debit) essential for user satisfaction? |
|  | Why is email confirmation preferred over SMS notifications for order status updates? |
| How | How should user authentication be implemented (email ID and password with security layers)? |
|  | How will manufacturers upload their product details, and what format is preferred? |

2. SMART Criteria for Question Framing

| SMART Criteria | Case Study Application |
| --- | --- |
| Specific | What catalogue categories are needed for fertilizers, seeds, and pesticides? |
| Measurable | What is the expected volume of concurrent users (farmers and manufacturers)? |
| Achievable | Are there any technical constraints for payment gateway integration? |
| Relevant | How does the proposed feature (e.g., delivery tracking) align with user needs? |
| Time-bound | What is the expected timeline for onboarding manufacturers to upload product details? |

3. RACI Framework

| Stakeholder Role | Responsibility |
| --- | --- |
| Responsible | Java Developers (Ms. Juhi, Mr. Teyson, Ms. Lucie) for coding functionalities like catalog and payments. |
| Accountable | Mr. Vandanam (Project Manager) ensures deliverables are completed on time. |
| Consulted | Peter, Kevin, and Ben provide detailed user requirements. |
| Informed | Mr. Henry and the committee track overall progress. |

4. Considerations for 3-Tier Architecture

| Layer | Questions |
| --- | --- |
| Presentation Layer | What user interface features are essential for mobile and web platforms? |
|  | How should search results (e.g., products) be displayed for ease of use? |
| Application Layer | What business rules (e.g., minimum order quantity) should be implemented? |
|  | How will API integrations with delivery services be managed? |
| Data Layer | What data fields should be mandatory for manufacturers when uploading products? |
|  | How frequently should the database be backed up? |

5. Use Cases and Activity Diagrams

Example Use Case:

Scenario: A farmer searches for products and places an order.

* Actors: Farmer, Manufacturer, System.
* Steps:
	1. Farmer logs into the system.
	2. Searches for fertilizers, seeds, or pesticides.
	3. Adds selected items to the cart.
	4. Proceeds to checkout and completes payment.
	5. Receives order confirmation and delivery tracking details.

Example Activity Diagram:

* Map the workflow for "Farmer Order Placement" showing:
	+ Login → Search → Add to Cart → Payment → Order Confirmation.

\*\*Refer to Ans No. 10 and 12

***Question 5 – Elicitation Techniques***

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

**Ans:**

* **Brainstorming**: Gathering the ideas from stakeholders and filtering out the most valuable points. Conducting a brainstorming session with the project team to generate ideas for the project and how it reaches to end user.
* **Document Analysis**: Document analysis is done through reading a document and understanding a product or process.
* **Reverse engineering** is also called back engineering because it involves working backward through the original design process. The challenge is to gain a working knowledge of the original design by disassembling the product piece-by-piece or layer-by-layer because of limited knowledge about the engineering methods that went into creating the product.
* **Focus Group**: To Elicit ideas and attitudes about a specific product or service in an interactive group environment. Its kind of market research where less people involved.
* **Observations**: Observing how users interact with a website to identify area for improvement.
* **Workshop**: Conducting are requirement gathering workshop with project team and stakeholders to identify key requirements for a Application to develop.
* **JAD**: Joint Application Development is a methodology that involves the client or end user in the design and development of an application, through conducting workshops. Jad will helps to develop the application and smoother of the project to complete in time with no errors.
* **Interview**: Conducting interview with the stakeholders to understand their needs and preferences for the project.
* **Prototyping:** It is an attractive idea for complicated and large systems for which there is no manual process or existing system to help determining the requirements.
* **Questionnaire**: Questions should be based on high-priority risks. Questions should be direct and unambiguous. Questions should be targeted to the requirement gathering and risk factors of the project.
* **Use Case Specs**: Current state of difficulties, to reduce that difficulties. What to be prepared and how to be prepare the solution.

***Question 6 – This project Elicitation Techniques***

 ***Which Elicitation Techniques can be used in this Project and Justify your selection of Elicitation Techniques?***

Prototyping

Use case Specs

Document Analysis

Brainstorming

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 (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 where about of their order.

Identify Business Requirements (which includes Stakeholder Requirements)

BR001 – Farmers should be able to search for available products in fertilizers, seeds, pesticides

BR002 – Manufacturers should be able to upload and display their products in the application

**Ans:**

To gather and define the business requirements for this project, the following elicitation techniques can be used effectively. Each technique is justified based on the nature of the project and the stakeholders involved:

1. Prototyping

* Justification: Prototyping is highly effective for this project because it involves creating a visual representation of the system (e.g., a mockup or a working model of the application). This will help stakeholders like Mr. Henry, Peter, Kevin, and Ben to visualize the login system, product catalog, search functionality, payment gateway, and delivery tracking features. Prototyping ensures that the requirements are clearly understood and reduces the risk of misinterpretation.
* Use Case: Create a prototype of the product catalog, search functionality, and payment gateway to demonstrate how the system will work. This will allow stakeholders to provide feedback early in the process.

2. Use Case Specifications

* Justification: Use case specifications are ideal for capturing functional requirements, such as how users (farmers and manufacturers) will interact with the system. This technique helps in detailing the steps involved in processes like user login, product search, payment, and delivery tracking.
* Use Case: Develop use cases for scenarios like:
	+ A farmer searching for a product.
	+ A manufacturer uploading product details.
	+ A farmer making a payment using the payment gateway.
	+ A farmer tracking their order.

3. Document Analysis

* Justification: Document analysis can be used to review existing documentation, such as product catalogs from manufacturers, payment gateway integration guidelines, and delivery tracking systems. This technique ensures that the system aligns with existing processes and standards.
* Use Case: Analyze documents provided by manufacturers (e.g., product details, pricing, and specifications) and payment gateway providers (e.g., integration requirements for COD, credit/debit cards, and UPI).

4. Brainstorming

* Justification: Brainstorming is useful for gathering creative ideas and exploring potential features or improvements. It encourages collaboration among stakeholders and helps identify hidden requirements or innovative solutions.
* Use Case: Conduct brainstorming sessions with stakeholders to explore additional features, such as:
	+ Adding a recommendation system for farmers based on their purchase history.
	+ Including a review and rating system for products.
	+ Enhancing the delivery tracking system with real-time updates.

5. Interviews

* Justification: Interviews are essential for gathering detailed requirements directly from key stakeholders like Mr. Henry, Peter, Kevin, and Ben. This technique allows for in-depth discussions and clarification of requirements.
* Use Case: Conduct one-on-one or group interviews to:
	+ Understand the specific needs of farmers and manufacturers.
	+ Clarify the login and account creation process.
	+ Discuss the payment gateway options and delivery tracking requirements.

Identified Business Requirements (BR) and Stakeholder Requirements (SR):

1. BR001 – Farmers should be able to search for available products in fertilizers, seeds, pesticides.
	* SR001 (Kevin): Farmers should be able to browse through the product catalog and search for specific products.
2. BR002 – Manufacturers should be able to upload and display their products in the application.
	* SR002 (Peter): Manufacturers should have a secure login to upload product details.
3. BR003 – Farmers should be able to create an account and log in to purchase products or add them to a buy-later list.
	* SR003 (Peter): Farmers need to log in using their email ID and password, with an option to create a new account.
4. BR004 – Farmers should have access to an easy-to-use payment gateway with multiple payment options.
	* SR004 (Ben): Payment gateway should include COD, credit/debit cards, and UPI options.
5. BR005 – Farmers should receive email confirmations and be able to track their orders.
	* SR005 (Kevin): Farmers should get email updates on order status and a delivery tracker.

Summary of Elicitation Techniques:

* Prototyping: To visualize the system and gather feedback.
* Use Case Specifications: To detail functional interactions.
* Document Analysis: To align with existing processes and standards.
* Brainstorming: To explore additional features and improvements.
* Interviews: To gather detailed requirements from stakeholders.

These techniques ensure that all business and stakeholder requirements are captured accurately and comprehensively, leading to a successful project outcome.

***Question 7 – 10 Business Requirements***

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

**Ans:**
 Based upon the Design, Security, Functionality, Integration, performance, Reporting, Scalability

* User Interface/Design

BR001 Application should have a user friendly interface

* Security

BR002 Application should be secured with encrypted data

* Functionality

BR003 Application should allow farmers and sellers to register

BR004 Application should allow farmers t place order for seeds, pesticides or fertilizers

BR005 Application should allow farmers to make payment online

BR006 Application should allow farmers to track their orders

* Integration

BR007 Application should get integrated with payment gateway

* Performance

BR008 Application should be fast with minimal data usage

* Reporting

BR009 Application should be able to generate sales report for stakeholders

* Scalability

BR009 Application should be able to handle large number of user registration and orders

***Question 8 –Assumptions
 List your assumptions***

**Ans:**

* The project is a web-based application accessible through desktop and mobile devices.
* The product catalog will contain only details of fertilizers, seeds, and pesticides.
* The application will not store any financial information of the users.
* The delivery of the products will be outsourced to a third-party logistics company.
* The application will not have any social media integration.

***Question 9 – This project Requirements Priority***

**Ans:**

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement ID | Requirement Category | Description | Priority |
| BR001 | User Interface | Application should have a user friendly interface | 10 |
| BR002 | Security | Application should be secured with encrypted data | 9 |
| BR003 | Functionality | Application should allow farmers and sellers to register | 8 |
| BR004 | Functionality | Application should allow farmers t place order for seeds, pesticides or fertilizers | 7 |
| BR005 | Functionality | Application should allow farmers to make payment online | 6 |
| BR006 | Functionality | Application should allow farmers to track their orders | 5 |
| BR007 |  Integration | Application should get integrated with payment gateway | 4 |
| BR008 | Performance | Application should be fast with minimal data usage | 3 |
| BR009 | Reporting | Application should be able to generate sales report for stakeholders | 2 |
| BR010 |  Scalability | Application should be able to handle large number of user registration and orders | 1 |

***Question 10 – Use Case Diagram***

**Ans:**



**Question 11 – (minimum 5) Use Case Specs**

**Ans:**

* 1. **Use Case Spec for the Registration:**

| **Field** | **Details** |
| --- | --- |
| **Description** | Allow a new user to register using Mobile Number, Email ID, or FB/Instagram credentials. |
| **Actors** | New User, System |
| **Pre-conditions** | 1. Active internet connection2. User has valid credentials (mobile number, email, or FB/Insta). |
| **Post-conditions** | User account is successfully created, and the user can log in. |
| **Basic Flow** | 1. User selects a registration method (Mobile Number, Email, or FB/Insta).2. Enters details.3. Sets up a password.4. System validates the details.5. Registration is completed successfully. |
| **Alternate Flow** | 1. Email/Mobile Number already exists.2. FB/Insta credentials are not valid. |
| **Exceptional Flow** | 1. User fails to set up a valid password (violates password rules).2. Internet connection is lost. |
| **Assumptions** | Users have basic knowledge of entering credentials. |
| **Constraints** | Password must meet complexity rules. Email/Mobile must be unique. |
| **Dependencies** | System should be capable of validating email, mobile numbers, and FB/Insta credentials. |
| **Input-Outputs** | **Inputs**: Mobile Number/Email/FB-Insta credentials, Password. **Outputs**: Registration success or error message. |
| **Business Rules** | 1. Password must include at least one capital letter, one special character, and one number.2. Email/Mobile must be unique. |
| **Mis Info** | Interactive design and compatible across web and mobile platforms. |

* 1. **Use Case Spec for the Login**

| **Field** | **Details** |
| --- | --- |
| **Description** | Allow registered users to log in using Mobile Number, Email ID, or FB/Instagram credentials. |
| **Actors** | Registered User, System |
| **Pre-conditions** | 1. User must have an active internet connection.2. User must already be registered in the system. |
| **Post-conditions** | User is successfully logged in and redirected to the home page. |
| **Basic Flow** | 1. User selects a login method (Mobile Number, Email, or FB/Insta).2. Enters credentials.3. System validates the credentials.4. User is logged in successfully and directed to the home page. |
| **Alternate Flow** | 1. Incorrect password entered.2. Username/Mobile/Email not registered.3. Multiple failed attempts lock the account temporarily. |
| **Exceptional Flow** | 1. Forgot Password: User requests a password reset.2. Forgot Username: User retrieves username via email/mobile. |
| **Assumptions** | Users have basic computer or mobile knowledge and know their login credentials. |
| **Constraints** | Only registered users can log in.Username/Email/Mobile must be valid. |
| **Dependencies** | System should validate user credentials against the database and handle password resets if required. |
| **Input-Outputs** | **Inputs**: Username/Mobile/Email, Password.**Outputs**: Login success or error message. |
| **Business Rules** | 1. Password must be validated securely.2. Login credentials must match those stored in the database. |
| **Mis Info** | Browser and mobile app compatibility, secure login flow (e.g., encryption of credentials). |

* 1. **Use Case Spec for the Product Landing Page**

| **Field** | **Details** |
| --- | --- |
| **Description** | **Display product details, images, pricing, and options for a selected product to the user.** |
| **Actors** | **Registered User, System** |
| **Pre-conditions** | **1. User must be logged in.2. The product must exist in the database.** |
| **Post-conditions** | **Product details are displayed on the product landing page, and the user can add the product to the cart.** |
| **Basic Flow** | **1. User selects a product from the search or listing page.2. System fetches product details.3. The product landing page displays details such as title, images, price, description, and available options.** |
| **Alternate Flow** | **1. Product is out of stock, and an "Out of Stock" message is displayed.2. System fails to load some optional product details (e.g., reviews).** |
| **Exceptional Flow** | **1. Product does not exist in the database (error message is displayed).2. Internet connection is lost while loading the page.** |
| **Assumptions** | **Users can navigate the website/app to reach the product page.** |
| **Constraints** | **Product information must be accurate and complete.** |
| **Dependencies** | **System should retrieve product details from the database.** |
| **Input-Outputs** | **Inputs: Product selection from the search/listing page.Outputs: Product details displayed or error message.** |
| **Business Rules** | **1. Only active and available products are displayed.2. Pricing and discounts are accurate and up-to-date.** |
| **Mis Info** | **Page must be interactive and compatible across devices (mobile/web).** |

* 1. **Use Case Spec** for the **Payments**

| **Field** | **Details** |
| --- | --- |
| **Description** | Allow users to complete the purchase by selecting a payment method (COD, UPI, or Card/Wallet). |
| **Actors** | Registered User, System, Bank Server |
| **Pre-conditions** | 1. User must have added items to the cart.2. Active internet connection.3. Payment methods must be available. |
| **Post-conditions** | Payment is successfully processed, and the order is confirmed. |
| **Basic Flow** | 1. User selects a payment method (COD, UPI, or Card/Wallet).2. System validates the selection.3. If Card/Wallet or UPI is chosen, the user enters payment details.4. System processes the payment with the bank server.5. Payment is successful, and the order is confirmed. |
| **Alternate Flow** | 1. Payment fails due to insufficient funds or incorrect details (error message displayed).2. User cancels payment and selects another method. |
| **Exceptional Flow** | 1. Payment gateway timeout (user retries or selects another method).2. Internet connection is lost during the transaction. |
| **Assumptions** | Users have access to valid payment methods and understand how to use them. |
| **Constraints** | Payment methods must be secure, and sensitive information must be encrypted. |
| **Dependencies** | Payment gateway and bank server must be operational. |
| **Input-Outputs** | **Inputs**: Payment method selection, payment details (if required).**Outputs**: Payment success or failure message. |
| **Business Rules** | 1. All payment methods must comply with security and regulatory standards.2. System must confirm payment status before confirming the order. |
| **Mis Info** | User-friendly payment interface and compatibility across devices. |

* 1. **Use Case Spec** for the **Order Status**

| **Field** | **Details** |
| --- | --- |
| **Description** | Allow users to track the status of their orders, including delivery updates and estimated timelines. |
| **Actors** | Registered User, System, Delivery Hub |
| **Pre-conditions** | 1. User must be logged in.2. An order must exist in the system associated with the user account. |
| **Post-conditions** | The current status of the order (Delivered, Not Delivered, In Transit, etc.) is displayed to the user. |
| **Basic Flow** | 1. User navigates to the "Order Tracking" section.2. System retrieves order details and current status from the delivery hub.3. The order status is displayed, including delivery date and updates. |
| **Alternate Flow** | 1. If the order is delayed, the system displays an appropriate message and updated timeline.2. If no delivery updates are available, the system displays "Status Pending." |
| **Exceptional Flow** | 1. Delivery hub is unavailable or fails to provide the status (error message displayed).2. User queries an order ID that does not exist. |
| **Assumptions** | The user knows how to navigate to the order tracking section. |
| **Constraints** | Delivery status updates depend on the delivery hub's system integration. |
| **Dependencies** | System must fetch real-time updates from the delivery hub. |
| **Input-Outputs** | **Inputs**: Order ID.**Outputs**: Current order status and delivery updates. |
| **Business Rules** | 1. Delivery information must be updated in real time.2. Users should be notified of any delays or issues proactively. |
| **Mis Info** | Compatible with both mobile and desktop platforms, with notifications for significant status changes. |

**Question 12 – (minimum 5) Activity Diagrams**

**\*\*ActionStat1=Fertilizers& ActionStat2=Seed**

