

CAPSTONE PROJECT 1 PART 2 ANSWERS

Q1 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

STAGE	Quarter 1 Audit Report (Requirement gathering phase)
Completed	18 weeks (week 1 to week 18)
Check list	BRD template
	Elicitation results report
	Duplicate requirements report
	Grouping of functionalities / features client signoff
	UML diagrams
	Business to functional requirement
	Client signoff-documents
	RTM document version control
	Email communication – To CC,BCC

STAGE	Quarter 1 Audit Report DESIGN
Completed	8 weeks (Week 28 to week 35 week)
Check list	Utilization of tools
	FDD
	Documented evidence on client communication
	Stakeholders MOM
	Email communication – To CC,BCC

STAGE	Quarter 1 Audit Report Development
Completed	20 weeks (Week 40 to Week 60)
Check list	JAD session report
	Code review and documentation
	End user manual preparation document
	BA and developer MOM
	Approval from stakeholders
	Email communication – To CC,BCC

STAGE	Quarter 1 Audit Report Testing
Completed	20 weeks (week 58 to week 78)
Check list	Testing standards and coverage verification
	Test case summary
	Training report to end users
	Lessons learnt document
	Email communication – To CC,BCC

Q2 BA APPROACH STRATEGY

What Elicitation Techniques to apply

Ans. Requirement elicitation is the process of digging out the information from the stakeholders requirements elicitation serves the foundation in documenting the requirements.

Elicitation techniques to apply are:

Brainstorming

Description: A collaborative technique where participants share ideas in a free-flowing discussion to generate as many ideas as possible.

Application: Used to identify features of the platform (e.g., payment methods, delivery options) by gathering input from stakeholders like Peter, Kevin, Ben, and other farmers.

Advantages:

Encourages creativity and innovation.

Quick generation of ideas.

Involves multiple perspectives.

Disadvantages:

May lead to unstructured outcomes without proper moderation.

Dominant participants may overshadow others.

Document Analysis

Description: Reviewing existing documents, such as reports, policies, or workflows, to gather requirements.

Application: Analyzing records on fertilizer, seed, and pesticide procurement to understand the challenges and processes.

Advantages:

Provides factual and historical data.

Saves time by leveraging existing resources.

Disadvantages:

May not reflect the current state of processes.

Can be time-consuming to review extensive documentation

Reverse Engineering

Description: Analyzing existing systems to understand functionality and requirements.

Application: Reviewing similar agricultural e-commerce platforms to identify useful features for the new platform.

Advantages:

Useful for understanding competitors' strengths.

Provides a baseline for development.

Disadvantages:

Ethical and legal considerations must be addressed.

Limited applicability if no similar systems exist.

Focus Groups

Description: A structured discussion with a small group of stakeholders to gather specific insights.

Application: Conducting sessions with farmers and agricultural companies to understand their expectations from the platform.

Advantages:

Promotes in-depth discussion on specific topics.

Allows for real-time clarification.

Disadvantages:

Group dynamics may influence responses.

Requires skilled facilitation.

Observation

Description: Watching users perform their tasks to understand processes and challenges.

Application: Observing farmers like Peter, Kevin, and Ben during their procurement process.

Advantages:

Captures real-world processes.

Provides insights into inefficiencies.

Disadvantages:

Time-intensive.

May not reveal the complete picture.

Workshops

Description: Facilitated sessions with stakeholders to collaboratively gather requirements and resolve conflicts.

Application: Conducting workshops to finalize the platform's features, design, and workflow.

Advantages:

Encourages collaboration and consensus.

Provides immediate feedback and decisions.

Disadvantages:

Requires significant planning and resources.

May be challenging to schedule for all stakeholders.

Joint Application Development (JAD)

Description: A structured approach involving stakeholders and the development team to define requirements.

Application: Engaging stakeholders and developers in sessions to finalize detailed platform requirements.

Advantages:

Aligns stakeholders and developers early.

Reduces rework through precise understanding.

Disadvantages:

Resource-intensive.

Success depends on facilitator expertise.

Interviews

Description: One-on-one discussions to gather detailed information from stakeholders.

Application: Interviewing Peter, Kevin, Ben, and agricultural company representatives to understand their needs.

Advantages:

Provides detailed, personalized insights.

Allows for direct clarification.

Disadvantages:

Time-consuming.

Relies heavily on interviewer skills.

Prototyping

Description: Creating a preliminary model of the platform to gather feedback.

Application: Developing a mock interface of the e-commerce site for farmers to review and suggest changes.

Advantages:

Provides a tangible representation of requirements.

Encourages user engagement and feedback.

Disadvantages:

Can create unrealistic expectations if misunderstood.

Requires additional effort and resources.

Questionnaire

Description: Using structured surveys to collect information from stakeholders.

Application: Distributing surveys to farmers and agricultural companies to understand their needs and preferences.

Advantages:

Cost-effective for large groups.

Standardized responses make analysis easier.

Disadvantages:

Limited depth of responses.

May lead to ambiguous answers without proper design.

Use Case Specifications

Description: Describing scenarios in which users interact with the system to meet their goals.

Application: Defining use cases like "Farmer orders fertilizer" or "Company updates product catalog."

Advantages:

Clarifies system behavior for specific scenarios.

Helps in identifying functional requirements.

Disadvantages:

Time-consuming to document all use cases.

Requires detailed stakeholder input.

Q How to do Stakeholder Analysis RACI/ILS

Ans Stakeholder analysis using the RACI matrix involves identifying the key stakeholders in a project and determining their roles and responsibilities related to various tasks or activities. The goal is to clarify who is responsible for completing tasks, who needs to approve them, who should be consulted for their expertise, and who should be kept informed about progress. The first step in this process is to list all the stakeholders involved in the project. This includes individuals, teams, or organizations that will play a role in the project's success, such as project managers, team members, external consultants, clients, or regulatory bodies. By identifying the roles, you ensure that no important party is overlooked, and their contributions to the project are clearly defined.

Once stakeholders are identified, the next step is to categorize them using the four roles in the RACI matrix. The "Responsible" role is assigned to individuals or teams who will actually complete the work for a particular task or deliverable. These stakeholders perform the hands-on activities required for the task. The "Accountable" role is reserved for the person who ultimately owns the task's outcome, ensuring that it is completed correctly and on time. This individual may delegate work to those who are responsible, but they bear the overall responsibility for the success or failure of the task. "Consulted" stakeholders are those who are considered experts or advisors on the task. Their input or feedback is required to make informed decisions or refine processes, but they are not directly responsible for carrying out the work. Finally, the "Informed" group includes individuals who need to be kept up to date on the progress or status of the task but do not participate actively in the task's execution or decision-making process.

By assigning these RACI roles to each stakeholder for every task, a clear map of responsibilities is created. This ensures that there are no overlaps or gaps in accountability, and everyone knows their role in the project's success. This clarity helps to prevent misunderstandings, reduces the risk of delays, and improves overall project coordination. For example, a project manager may be accountable for the overall project delivery but not responsible for the day-to-day tasks, which might be handled by different team members. Consultants, such as subject matter experts, might be consulted to ensure the solution meets specific requirements or standards, while clients need to be kept informed about major milestones and progress. By organizing the stakeholders' roles in this way, project teams can manage expectations, foster collaboration, and ensure efficient workflow throughout the project lifecycle.

The RACI matrix also provides a framework for monitoring and adjusting stakeholder involvement as the project progresses. Stakeholder analysis isn't a one-time task; it should be revisited periodically to ensure that roles are still appropriate as the project evolves. Sometimes, tasks or responsibilities change, or new stakeholders come into play, requiring updates to the matrix. Regularly reviewing the RACI matrix during project meetings can help ensure that all parties remain aligned and that the project stays on track. In summary, using the RACI matrix for stakeholder analysis is an effective method for mapping out responsibilities, improving communication, and ensuring successful project execution by clearly defining each stakeholder's involvement from start to finish.

Q What Documents to Write

Ans As a Business Analyst (BA) on this project, you'll be responsible for documenting and facilitating communication between stakeholders, developers, testers, and other team members. The following documents are essential for the successful completion of the project and each serves a different purpose:

The **Business Requirements Document (BRD)** outlines the high-level objectives and goals of the project, such as improving accessibility for farmers in remote areas to procure agricultural products, creating a communication platform between farmers and companies, and ensuring timely delivery of fertilizers, seeds, and pesticides. The BRD also details the stakeholders, including Mr. Henry, the farmers, manufacturing companies, and the project team members, emphasizing their roles in achieving the project goals .

The **Functional Requirements Document (FRD)** specifies the detailed functional aspects of the application. It includes how farmers can register, browse, and order products, how companies can list their products, and how payment and delivery processes will function. The FRD also addresses features like a search mechanism, order tracking, and secure login systems for all users, ensuring clarity for the development team .

Use Case Specifications are essential to describe specific interactions between users (farmers and companies) and the system. Each use case explains scenarios such as a farmer searching for a product, placing an order, or a company uploading new products. These use cases include actors, goals, preconditions, steps, and exceptions, aiding the development team in creating a user-centered application.

The **Test Case Documentation** focuses on defining test cases to validate each functionality. This includes ensuring that users can register, log in, search for products, place orders, and receive notifications correctly. Test cases will be structured to cover positive and negative scenarios to identify any issues during the development lifecycle, helping the QA team ensure a high-quality product.

Q What process to follow to Sign off on the Documents

Ans To achieve a proper sign-off on the Software Requirements Specification (SRS) document for the Online Agriculture Product Store, a clear and structured process must be followed.

Finalize the SRS Document:

Ensure the SRS document is complete, accurate, and reflects all the requirements gathered from the stakeholders, such as Peter, Kevin, Ben, and other relevant parties.

Validate that all functional and non-functional requirements, use cases, and system specifications are included.

The document should also outline the project scope, constraints, and any assumptions made during the requirements gathering process.

Internal Review:

Before presenting the SRS to the client, hold an internal review with the development team (Project Manager, developers, testers, etc.) to ensure that all technical aspects are covered and there are no gaps or ambiguities.

Ensure that the SRS aligns with the project objectives and timeline.

Client Presentation/Review:

Schedule a virtual or direct meeting with Mr. Henry (or the relevant stakeholders) to walk through the SRS document.

Present the SRS in an easily understandable format and allow the stakeholders to ask questions or request changes. This can be done through a virtual meeting (e.g., Zoom, MS Teams), or a physical meeting if feasible.

Highlight the key points, including system features, user interactions, and technical specifications.

Collect Feedback:

Document any feedback, clarifications, or changes suggested by the client during the meeting. This ensures that all the requirements are accurately captured and any misunderstandings are addressed before moving forward.

If there are major changes, update the SRS document accordingly and share it with the client again for review.

Final Review:

Once all revisions are made, review the updated SRS with the client to confirm their satisfaction. Ensure all requirements are clear and agreed upon.

In this step, you can send the final version of the SRS for their review via email, along with any necessary explanations or details.

Sign-off Process:

After the client is satisfied with the document, ask for formal confirmation of acceptance.

Virtual Meeting or Direct Meeting: The client (Mr. Henry or designated representatives) can provide verbal confirmation during the meeting and indicate that the document is final and accepted. Ensure that this verbal confirmation is documented.

Email Confirmation: Alternatively, you can send a final version of the SRS document to the client, requesting confirmation of acceptance via email. The email should request a response (e.g., "I confirm the acceptance of the SRS document") as an official sign-off.

Make sure the email request is clear, and the client understands that the sign-off marks the agreement to proceed with the development phase.

Document the Sign-off:

Keep a copy of the email confirmation as a record of the sign-off. If this is done in a virtual or direct meeting, ensure that the minutes of the meeting reflect the sign-off decision and include a copy of the agreed SRS document.

Store the signed-off SRS in a secure location for future reference and project tracking.

Notify Team and Proceed:

Once the sign-off is complete, notify all project stakeholders (development team, testers, etc.) that the SRS is officially approved and that they can proceed with the next steps in the project.

Q How to take approvals from clients

Ans To take approvals from the client and establish a continuous feedback loop, here's a step-by-step approach for effectively managing the process with Mr. Henry and other key stakeholders:

Initial Client Meeting (Kickoff Meeting):

Objective: To understand the client's vision, goals, and gather initial project requirements.

Agenda:

Introduction of all project members (from both APT IT Solutions and Mr. Henry's team).

Discuss the project scope, objectives, and timelines (18 months).

Understand stakeholder requirements (e.g., Peter, Kevin, and Ben's issues related to fertilizers, seeds, and pesticides).

Clarify any concerns or questions the client may have regarding the project's approach.

Action: Obtain formal approval for the project plan and schedule. This could be a sign-off or a confirmation that the project scope and approach align with the client's expectations.

Regular Status Update Meetings:

Objective: To ensure that the client is always informed about the progress of the project.

Frequency: Weekly or bi-weekly meetings.

Agenda:

Review the progress made in the development phase.

Discuss any challenges or risks the team is encountering.

Present work completed (e.g., wireframes, prototypes, early functionalities).

Gather feedback and suggestions from Mr. Henry and stakeholders.

Reassess project timelines and resources if needed.

Action: Get approval on major project milestones. For example, after a prototype or MVP (Minimum Viable Product) is delivered, seek feedback and approval to proceed to the next phase.

Feedback Collection Mechanisms:

Objective: To gather and act upon continuous client feedback.

Methods:

Surveys/Forms: Send feedback surveys to Mr. Henry, Peter, Kevin, and Ben after each key delivery or milestone to collect their thoughts on the functionality, usability, and effectiveness.

Informal Calls or Email Communication: Throughout the project, Mr. Henry and his team should feel comfortable sending quick feedback or suggestions.

Prototype Demonstrations: As features are being developed, consider doing live demos (screen sharing sessions) to show progress and gather immediate reactions.

Action: Incorporate feedback from the client and stakeholders into the ongoing development cycle. Be transparent about how feedback will be addressed.

Q What communication channels to establish and implement

Ans In the context of the online agriculture product store project, clear and effective communication is crucial to ensure that all team members, stakeholders, and project managers are aligned with the project goals, progress, and challenges. Here's a detailed explanation of the communication channels to establish and implement for the project:

Regular meetings are vital for coordination among team members and stakeholders. **Weekly status meetings** will help monitor progress, address immediate concerns, and align on tasks.

These meetings will involve the core team, including developers, testers, and the project manager, ensuring everyone is on the same page regarding deliverables and timelines.

Bi-weekly review sessions will be essential to evaluate the overall progress and address any challenges or roadblocks encountered during the development process. These reviews will also provide an opportunity for the stakeholders, including Peter, Kevin, and Ben, to share feedback on the implementation and suggest improvements to meet farmers' needs more effectively.

Monthly stakeholder updates will play a crucial role in keeping Mr. Henry and other key stakeholders informed about the project's progress, budget utilization, and upcoming milestones. These updates will ensure transparency and allow stakeholders to provide strategic inputs or address high-level concerns. In addition to scheduled meetings, instant communication tools such as Slack or Microsoft Teams can be used for daily coordination, and email updates will serve as a formal record for significant developments or decisions. This combination of structured and ad-hoc communication will foster collaboration and ensure the successful delivery of the project within the stipulated timeline.

Q How handle change requests.

Ans Handling change requests effectively is crucial to the success of any project, particularly in a software development project like the online agriculture product store you're working on. Below is a comprehensive process for handling change requests, broken down into key steps: Handling change requests in a project requires a structured and efficient approach to ensure that all modifications are evaluated, approved, and implemented without disrupting the project's progress or objectives. When a change request arises, it is important to begin by documenting it in a formal change request form, capturing details such as the description of the change, the reason for the change, and any supporting documentation or evidence. This form becomes the primary record and reference point for the request throughout the process.

Once the request is documented, the next step involves conducting an impact analysis to assess its implications on various aspects of the project, including the scope, timeline, budget, resources, and quality. The impact analysis requires input from relevant team members, such as developers, testers, and project managers, to provide a comprehensive understanding of how the change will affect deliverables and overall project goals. This assessment helps determine whether the requested change is feasible and aligns with the project's objectives and constraints.

After the impact analysis, the request moves to the approval process. This involves presenting the findings and recommendations to key stakeholders or a designated change control board. Stakeholders evaluate the impact and decide whether to approve, reject, or request modifications to the change. Approval decisions should consider factors such as project priorities, risks, and potential benefits of the change. Clear communication with stakeholders during this stage is crucial to ensure alignment and consensus.

Finally, thorough documentation is essential throughout the change request process. All related documents, including the initial request form, impact analysis report, and approval decisions, must be stored systematically for future reference and audit purposes. This documentation ensures transparency and accountability while providing a clear trail of decision-making for any future reviews or evaluations. By adhering to these practices, change requests can be managed effectively to balance project needs with flexibility and adaptability.

Q How to update the progress of the project to the stakeholders .

Ans To update the progress of the project to the stakeholders, you can follow these strategies:

weekly status report

- Provide a weekly status report that highlights key activities completed, current tasks, any challenges or blockers faced, and the next steps. Ensure that the report is concise but detailed enough for stakeholders to understand where the project stands.
- Share key milestones and progress against the project plan. Include updated timelines if there have been any changes or delays and explain the reasons behind them.
- Communicate any risks or issues that could impact the project's delivery, and offer solutions or mitigation strategies. This helps keep stakeholders informed and reassured that potential problems are being addressed.
- Focus on deliverables, especially those that have been achieved, and mention upcoming work and how it will contribute to the project's overall success.

Monthly review meetings

- Monthly review meetings should focus on the broader aspects of the project, such as budget updates, resource allocation, and any high-level decisions required. Prepare a summary of the progress made and invite feedback to align with stakeholder expectations.
- During meetings, provide visual aids such as Gantt charts or progress dashboards to make the project's status clear. Encourage discussions to address any concerns and ensure alignment on goals.
- Keep the communication transparent and consistent, making sure that all stakeholder concerns are addressed, and their expectations are managed effectively.

Q how to take sign off on the UAT – Client project acceptance form .

Ans To take sign-off on the UAT (User Acceptance Testing) Client Project Acceptance form, follow a structured process to ensure that the client is fully satisfied with the project deliverables. Here's how you can manage this process:

UAT Preparation Define UAT Criteria: Make sure the acceptance criteria and the expected outcomes of UAT are well documented and agreed upon by both the project team and the client. This could include functional specifications, business requirements, and specific user scenarios.

Prepare UAT Environment: Ensure the project has a stable environment for testing that mirrors the client's real-world setup.

Create Test Cases and Scenarios: Develop detailed test cases based on the requirements to simulate real-world scenarios that end-users would encounter. These test cases should cover critical functionalities, edge cases, and workflows.

Client's Involvement: Include your client (in this case, Mr. Henry and other stakeholders) in defining the scope of UAT. Ensure that Peter, Kevin, Ben, or other relevant stakeholders from the farming community are involved in approving test scenarios and sign off.

Conduct UAT Execute UAT Tests: The testing team (e.g., Ms. Alekya and Mr. Jason) will execute the UAT tests according to the predefined test cases. Monitor progress and ensure that all key features of the application are tested.

Report Issues: If issues are encountered during UAT, record them systematically. Categorize issues based on severity and work closely with the developers (e.g., Ms. Juhi, Mr. Teyson, Mr. Bravo) to fix critical bugs.

Fix Issues Bug Fixing: Prioritize issues based on severity and business impact. Ensure that critical bugs are resolved before moving to the next phase.

Retesting: Once bugs are fixed, test the affected areas to ensure the fixes work as intended. Involve the testing team (Ms. Alekya and Mr. Jason) in this process.

Acceptance Form Prepare the Acceptance Form: After successful UAT, create the Client Project Acceptance form. This should include:

Test cases executed

Test results and issues found (if any)

Details of any outstanding issues, if they exist

Sign-off sections for both the client and project team members

Review with Stakeholders: Review the form with Peter, Kevin, Ben, and other stakeholders, ensuring that the application meets the needs of the farming community and their business requirements.

Final Review Meeting Schedule a Final Review Meeting: Arrange a meeting between the project team (Mr. Karthik, Mr. Vandanam, and other members) and the client stakeholders (Mr. Henry, Peter, Kevin, Ben) to go through the completed UAT and discuss any remaining concerns or improvements.

Clarify Questions: Answer any questions or concerns raised by the client. If there are any final modifications requested, discuss timelines and feasibility for implementing them.

Obtain Sign-Off Client Sign-Off: Once the client is satisfied with the UAT and the project deliverables, request them to sign off on the Client Project Acceptance form.

Project Manager's Role: Mr. Vandanam, as the project manager, will likely facilitate the formal sign-off process, ensuring that both parties (client and development team) agree on the acceptance.

Document and Store: Once the form is signed, ensure it's documented and stored as part of the project deliverables for future reference.

Q3 Explain and illustrate 3-tier architecture ?

Ans The 3-tier architecture is a well-established software architecture pattern that separates applications into three interconnected layers each with its own responsibilities .The layers are:

Application layer

It is the topmost layer of the architecture – also known as PRESENTATION LAYER – it handles Graphical user interface (GUI) components such as screens and pages , validations on pages , organization specific business logic will be on the application layer .

Ex : - E-commerce website

Business logic layer

It is the middle layer of architecture -acts as an intermediary between the presentation layer and the data storage layer . all reusable (logic pertaining to industry) , frequently changing components , government body rules and regulations , compliances should go to middle layer layer contains the core logic of the application .

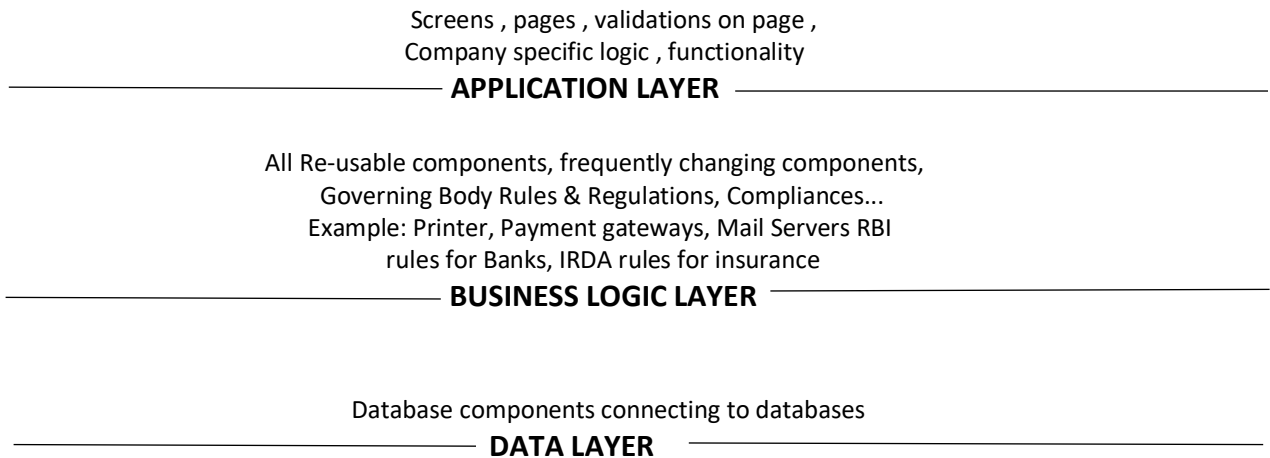
Ex : printer , payment gateways , mail serves , RBI ,rules for banks , IRDA rules for insurance .

Database layer

It is the bottom most layer of the architecture . database components connecting to databases will be at the data layer - responsible for storing and retrieving data .

Ex : MySQL , Oracle database .

ILLUSTRATION



In this illustration, the presentation layer interacts with the user and handles the user interface. It sends user requests and data to the business logic layer for processing. The business logic layer performs the required operations and communicates with the data storage layer to retrieve or store data. The data storage layer manages the persistence and retrieval of data from the underlying storage systems.

This three-tier architecture promotes separation of concerns, flexibility, and scalability. Each layer can be developed and maintained independently, enabling changes or updates in one layer without affecting the others. It also allows for better distribution of responsibilities and supports modular development, making the application more maintainable and extensible.

Q 4 Business analyst should keep what points in his/her mind before he frames a Question to ask to the stakeholder

Ans As a Business Analyst (BA) on this project, it's crucial to prepare well-thought-out questions for the stakeholders,

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- **Who:** Identify the stakeholders involved in the project. Who is the target user (farmers, companies)? Who will be responsible for each component (e.g., developers, testers, admins)?
- **What:** What are the specific requirements or problems faced by stakeholders? What should the online platform offer (features like product ordering, payment, user profiles)?
- **When:** What are the key milestones and deadlines? When do stakeholders expect specific features or deliveries?

- Where: Where will the platform be accessed (mobile, web, location of users)? Where should the product be delivered?
- Why: Why do stakeholders want certain features?
- How: How should the application function? How will it integrate with suppliers and users? How will the platform handle payments, logistics, and security?

SMART

- Specific: Ensure the requirements are well-defined and clear to avoid ambiguity.
- Measurable: Define how success will be measured.
- Attainable: Ensure that the requirements can realistically be met based on available resources and time. Consider the expertise of the team (e.g., Java developers).
- Realistic: Make sure the requirements align with the overall goal, which is helping farmers access agricultural products more easily.
- Time-bound: Define clear timelines for features to be developed and launched.

RACI

- Responsible: Identify who will be executing tasks (e.g., Ms. Juhi and developers are responsible for coding).
- Accountable: Determine who is ultimately accountable for the task completion (e.g., Mr. Karthik, Delivery Head, is accountable for the overall project delivery).
- Consulted: List who will provide input, such as Peter, Kevin, and Ben, who have direct knowledge of farming issues.
- Informed: Identify stakeholders to be kept informed of progress, such as Mr. Henry and other senior stakeholders.

3-Tier Architecture

- Presentation Layer: Understand how the user interface will function. What will the farmers and suppliers see on the platform? What should the app's flow and design look like to provide an intuitive user experience?
- Business Logic Layer: How will the application handle operations like product availability, orders, and communications between farmers and suppliers?
- Data Layer: What type of data needs to be stored and managed? (e.g., user data, product information, transaction records). How will data be managed and accessed securely?

UML

Use Cases represent the interactions between users (actors) and the system to achieve specific goals. For the online agriculture store, the actors would be farmers (primary users), admin staff, and manufacturers. Examples of use cases include:

- Browse Products: A farmer searches for fertilizers, seeds, or pesticides.
- Add Product to Cart: A farmer adds a product to their cart for purchase.
- Place Order: After reviewing the cart, the farmer places the order.
- Process Payment: The farmer proceeds with a secure payment.
- Track Order: The farmer tracks the status of their order.
- Manage Inventory: Manufacturers update their product stock details.
- Admin Manage Users: Admin staff manage user accounts, including registration, login, and profile updates.

- View Reports: Admin staff view sales, inventory, and customer reports.

Use Case Specifications provide detailed information on each use case, explaining the interaction flow. For example, the “Place Order” use case specification would describe the following steps:

- Pre-condition: The user must be logged in and have items in the cart.
- Main Flow: The farmer clicks “Place Order” after reviewing their cart; the system validates the items, calculates total cost, and initiates the payment process.
- Post-condition: The order is confirmed, and the farmer receives an order ID.
- Alternative Flow: If payment fails, the system prompts the user to reattempt or use an alternative payment method.
- Exceptions: The system handles cases where the cart is empty, or the payment gateway is unavailable.

Activity Diagrams represent the flow of activities and decisions within a use case or process. For instance, the “Place Order” activity diagram would show:

- Start: Farmer reviews the cart.
- Decision: Farmer decides whether to place the order.
- Action: If yes, the system verifies cart contents and calculates the total.
- Action: The farmer enters payment details.
- Decision: Payment successful?
- Yes: Proceed to order confirmation.
- No: Display error and request re-entry.
- End: Order is placed successfully or transaction fails.

Models such as sequence diagrams help design the structure of the system.

A sequence diagram for placing an order would illustrate the interaction between the Farmer, the System, and the Payment Gateway:

- The farmer initiates the process by selecting products.
- The system verifies the cart and computes the total cost.
- The farmer enters payment details.
- The system communicates with the payment gateway to process the payment.
- Based on the response from the payment gateway, the system either confirms the order or prompts for a retry.

Page Designs in UML can be represented through wireframes or mock ups, which outline the user interface of the application. These designs would include:

- Homepage: Featuring navigation to product categories (fertilizers, seeds, pesticides) and a search bar.
- Product Detail Page: Displays detailed information about a product, including its price, description, and stock status.
- Cart Page: Allows users to review selected items, modify quantities, and proceed to checkout.
- Order Confirmation Page: Displays the order summary and payment confirmation.

Q5 As a Business Analyst, What Elicitation Techniques you are aware of?

Ans Requirement elicitation is the process of digging out the information from the stakeholders requirements elicitation serves the foundation in documenting the requirements.

Elicitation techniques to apply are:

Brainstorming

Description: A collaborative technique where participants share ideas in a free-flowing discussion to generate as many ideas as possible.

Application: Used to identify features of the platform (e.g., payment methods, delivery options) by gathering input from stakeholders like Peter, Kevin, Ben, and other farmers.

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Description: A structured discussion with a small group of stakeholders to gather specific insights.

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Advantages:

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Allows for real-time clarification.

Disadvantages:

Group dynamics may influence responses.

Requires skilled facilitation.

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Description: Watching users perform their tasks to understand processes and challenges.

Application: Observing farmers like Peter, Kevin, and Ben during their procurement process.

Advantages:

Captures real-world processes.

Provides insights into inefficiencies.

Disadvantages:

Time-intensive.

May not reveal the complete picture.

Workshops

Description: Facilitated sessions with stakeholders to collaboratively gather requirements and resolve conflicts.

Application: Conducting workshops to finalize the platform's features, design, and workflow.

Advantages:

Encourages collaboration and consensus.

Provides immediate feedback and decisions.

Disadvantages:

Requires significant planning and resources.

May be challenging to schedule for all stakeholders.

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Aligns stakeholders and developers early.

Reduces rework through precise understanding.

Disadvantages:

Resource-intensive.

Success depends on facilitator expertise.

Interviews

Description: One-on-one discussions to gather detailed information from stakeholders.

Application: Interviewing Peter, Kevin, Ben, and agricultural company representatives to understand their needs.

Advantages:

Provides detailed, personalized insights.

Allows for direct clarification.

Disadvantages:

Time-consuming.

Relies heavily on interviewer skills.

Prototyping

Description: Creating a preliminary model of the platform to gather feedback.

Application: Developing a mock interface of the e-commerce site for farmers to review and suggest changes.

Advantages:

Provides a tangible representation of requirements.

Encourages user engagement and feedback.

Disadvantages:

Can create unrealistic expectations if misunderstood.

Requires additional effort and resources.

Questionnaire

Description: Using structured surveys to collect information from stakeholders.

Application: Distributing surveys to farmers and agricultural companies to understand their needs and preferences.

Advantages:

Cost-effective for large groups.

Standardized responses make analysis easier.

Disadvantages:

Limited depth of responses.

May lead to ambiguous answers without proper design.

Use Case Specifications

Description: Describing scenarios in which users interact with the system to meet their goals.

Application: Defining use cases like "Farmer orders fertilizer" or "Company updates product catalog."

Advantages:

Clarifies system behavior for specific scenarios.

Helps in identifying functional requirements.

Disadvantages:

Time-consuming to document all use cases.

Requires detailed stakeholder input.

Q6 Which Elicitation Techniques can be used in this Project and Justify your selection of Elicitation Techniques?

Ans Prototyping

Prototyping is the process of creating a simplified version or model of a product or system to explore ideas, test functionality, and gather feedback before full-scale development. It helps stakeholders visualize the end result, identify potential issues early, and refine requirements collaboratively.

Justification:

- Prototyping is ideal for this project because the target users (farmers and companies) may not fully understand technical requirements or the system's potential capabilities. A prototype (e.g., a mockup of the web/mobile application) can:
- Help visualize the application's interface and functionality.

- Facilitate feedback from stakeholders like Peter, Kevin, Ben, and other farmers to refine requirements.
- Bridge communication gaps between technical teams and non-technical stakeholders by providing a tangible artifact to discuss.
- This method ensures the final product aligns with the users' needs and expectations.

2. Use Case Specifications

Use case specifications are detailed descriptions of how a system interacts with users or other systems to achieve specific goals. They outline the steps, conditions, and expected outcomes for each interaction, serving as a blueprint for developers and testers.

Justification:

- Use case specifications are critical for capturing functional requirements in a structured manner. For this project:
- They will help define how farmers and companies will interact with the system (e.g., browsing, purchasing, or selling products).
- Use cases provide clear scenarios for stakeholders and the development team, ensuring alignment on expected workflows.
- They assist in identifying edge cases and dependencies (e.g., how users handle payment, order tracking, or disputes).
- These scenarios can then guide the development, testing, and delivery processes.

3. Document Analysis

Document analysis involves reviewing existing documents like business plans, reports, or user manuals to extract relevant information for understanding requirements, identifying gaps, or validating solutions.

Justification:

- Document analysis is essential for understanding the existing practices and challenges in the agriculture domain. In this project:
- Analyzing documents such as agricultural guidelines, company policies, and government regulations helps ensure compliance.
- Reviewing any available reports on farmers' issues or feedback from similar platforms provides valuable insights.
- This technique is also useful to evaluate existing technical documentation or software systems (if any) to identify reusable components.
- It reduces redundancy and ensures the solution aligns with best practices.

4. Brainstorming

Brainstorming is a collaborative technique where individuals or teams generate creative ideas, solve problems, or explore possibilities in a free-flowing, non-judgmental environment, encouraging innovation and diverse perspectives.

Justification:

- Brainstorming sessions involving stakeholders (e.g., Peter, Kevin, Ben, Mr. Karthik, and the development team) can:
- Generate a diverse set of ideas for features and functionalities.
- Help identify potential challenges, risks, and innovative solutions for the online agriculture product store.

- Encourage collaboration and ensure all perspectives (technical and non-technical) are considered.
- This technique is particularly useful in the early stages to set the project's scope and direction.

Q7 Make suitable Assumptions and identify at least 10 Business Requirements.

Ans Business Requirements are higher-level statements of the goals, objectives, or needs of the enterprise. They describe the reasons why a project has been initiated, the objectives that the project will achieve, and the metrics that will be used to measure its success Business requirements describe needs of the organization as a whole, and not groups or stakeholders within it. They are developed and defined through enterprise analysis.

Business requirements from case study are :

BR001-Users should be able to search fertilizers, seeds and pesticides.

BR002- Users should be able to browse through the product catalog.

BR003- Users need to create login id and password.

BR004- If the User is the new user then he should create the login id and password first.

BR005- Manufacturers should be able to upload and display their products in the application .

BR006 - User should get the details of the particular product .

BR007- Farmers should be required to create an account or log in to add products to the cart or the buy-later list

BR008- An order confirmation email should be sent to farmers upon successful placement of an order& for account creation

BR009- The application should provide multiple payment options, including Cash-on-Delivery (COD), Credit/Debit cards, and UPI.

BR010 - A delivery tracker should be available to track the current status and location of the or order.

Q8 List your assumptions

Ans

ASSUMPTIONS

- The online agriculture product store will primarily cater to farmers and companies involved in the manufacturing of fertilizers, seeds, and pesticides.
- The store will operate as a web and mobile application to provide accessibility to users.
- The project will be developed by APT IT SOLUTIONS company, which has the necessary talent pool.
- The project duration is 18 months, and it is being carried out as part of a Corporate Social Responsibility (CSR) initiative.
- Mr. Karthik is the Delivery Head overseeing the project, and Mr. Vandanam is the assigned Project Manager.
- Peter, Kevin, and Ben are considered key stakeholders in the project as they shared their requirements and are part of the committee helping Mr. Henry.
- The store will require a user login system for manufacturers and farmers to access different functionalities.

- A product catalog will be available, featuring detailed information about fertilizers, seeds, and pesticides, including pricing and manufacturer details.
- Users will have the ability to search for specific products within the catalog.
- Farmers will need to create an account using their email ID and password to make purchases or add products to a buy-later list. New users can create a new.
- The payment gateway will support multiple options, including cash-on-delivery (COD), credit/debit card, and UPI (Unified Payments Interface), for a convenient user experience.
- Users will receive email confirmations regarding their order status, providing details about their orders.
- The platform will include a delivery tracker feature to allow users to track the progress and location of their orders.

These assumptions provide a foundation to develop the system while ensuring the primary goals and user expectations are met effectively. These business requirements address the key pain points and expectations of stakeholders, ensuring the platform is user-friendly and functional for both farmers and manufacturers.

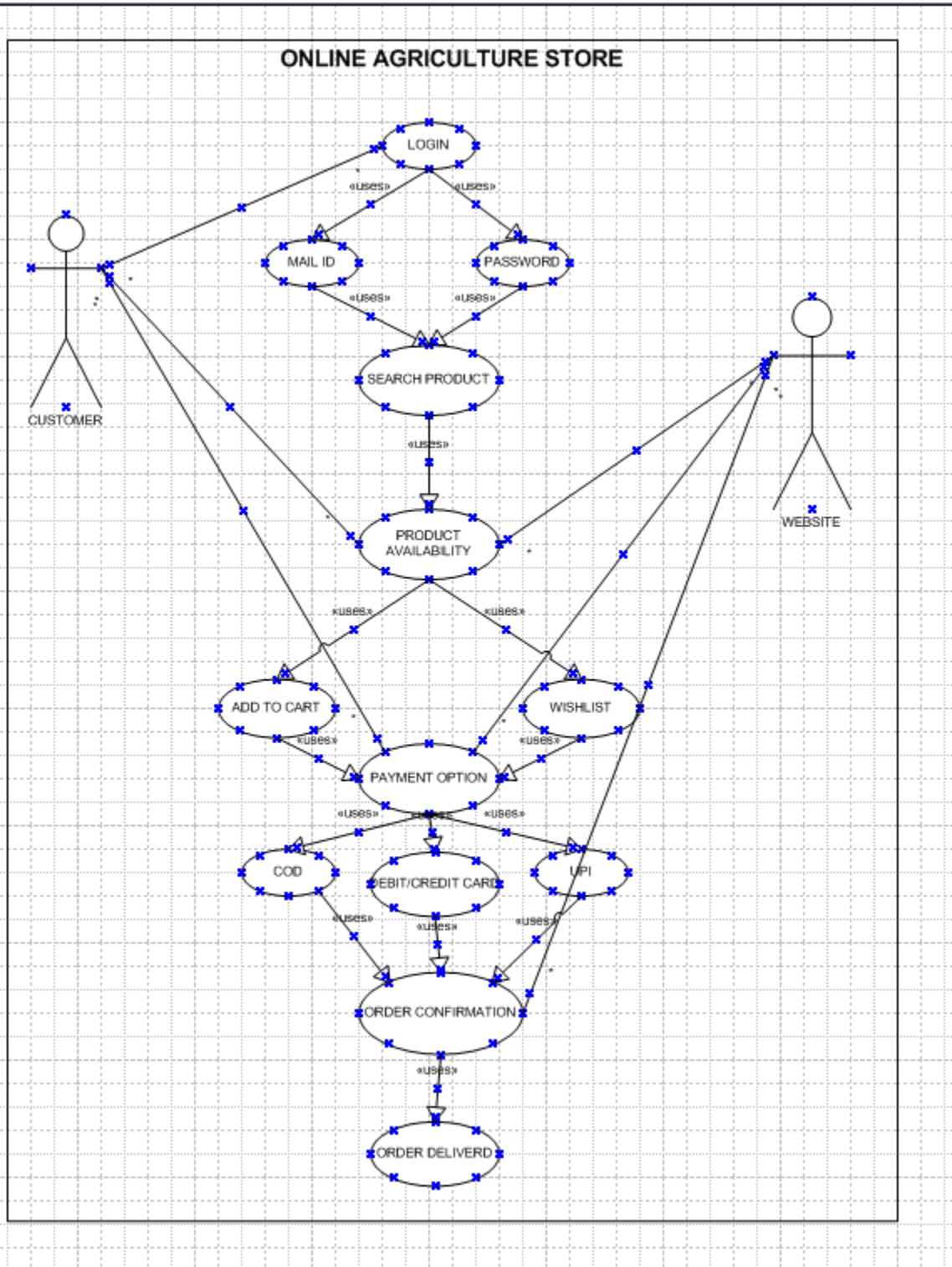
Q9 Give Priority 1 to 10 numbers (1 being low priority – 10 being high priority) to these Requirements after discussions with the stakeholders

Ans the priority number after the discussions are :

Req ID	Req name	Req Description	Priority
BR001	User search for products	Users should be able to search fertilizers, seeds and pesticides.	3
BR002	Users browse through products	Users should be able to browse through the product catalog.	2
BR003	User create login	Users need to create login id and password.	1
BR004	New user create login	If the User is the new user then he should create the login id and password first.	1
BR005	Manufacturers Upload their products	Manufacturers should be able to upload and display their products in the application	8
BR006	Product information	User should get the details of the particular product	4
BR007	Add to cart option	Farmers should be required to create an account or log in to add products to the cart or the buy-later list	7
BR008	Email confirmation	An order confirmation email should be sent to farmers upon successful placement of an order & for account creation .	4
BR009	Payment Gateway	The application should provide multiple payment options, including Cash-on-Delivery (COD), Credit/Debit cards, and UPI.	5
BR010	Product delivery tracking	A delivery tracker should be available to track the current status and location of the or order.	9

Q10 Draw use case diagram

Ans A use case diagram is a visual representation of the interactions between users (actors) and a system.



Q11 Prepare use case specs for all use cases

Ans A Use Case Specification Document which provides a detailed description of a use case, outlining how users (actors) will interact with the system to achieve a specific goal.

Use case ID	BR003		
Use case name	User create login		
Created by	Ashwadeepa	Last updated by	Dec 24 th 2024
Date created	Dec 24 th 2024	Last revision date	Dec 24 th 2024
Actor	Farmer & manufacturer		
Description	Users need to create login id and password.		
Pre – condition	None		
Post – condition	User is authenticated and logged in.		
Normal flow	Step 1 - User Visit: The user visits the website/application. Step 2 - Access Login Page: The user navigates to the login page by clicking on the "Login" button/link. Step 3 - Enter Credentials: The user inputs their registered email ID and password into the respective fields. Step 4 - Submit Credentials: The user clicks the "Login" button. Step 5 - Authentication: The system validates the provided email ID and password against stored credentials. Step 6 - Successful Login: Upon successful authentication, the user is redirected to their dashboard or homepage.		
Alternate flow	Step 1 – The user enters an incorrect email ID or password it displays "Invalid email ID or password. Please try again." The user re-enters credentials or opts to reset the password Step 2 - Users forget their password and use the "Forgot Password" option to reset it. Step 3 - Users create an account with an invalid email, prompting an error message and re-entry.		
Expectations	The login system should be secure to protect user data and privacy The login process should be fast and efficient , minimizing wait times. Support for mobile devices and responsiveness for better accessibility.		
Frequency of use	High		
Assumptions	All users have access to a valid email address. Users have a basic understanding of how to navigate a website and use a login interface. Internet connectivity is stable and reliable for the users during the login process.		

Use case ID	BR001		
Use case name	Search Products		
Created by	Ashwadeepa	Last updated by	Dec 13 th 2024
Date created	Dec 11 th 2024	Last revision date	Dec 13 th 2024
Actor	Farmer		
Description	Users should be able to search fertilizers, seeds and pesticides.		
Pre – condition	Farmer is logged in . The Product catalog is displayed		
Post – condition	Search results matching the entered query are displayed		
Normal flow	<p>Step 1 –The farmer visits the website and accesses the homepage.</p> <p>Step 2 –The farmer browses the product catalog, which includes fertilizers, seeds, and pesticides.</p> <p>Step 3 – The farmer uses the search bar, located prominently on the webpage, to enter keywords or product names.</p> <p>Step 4 – The system processes the search query and displays relevant results, including product images, descriptions, and prices.</p> <p>Step 5 – The farmer clicks on a product for detailed information, such as specifications, usage instructions, and availability.</p>		
Alternate flow	<p>Step 1 - If the farmer enters incorrect or partial keywords, the system provides suggestions or displays products with similar names or categories.</p> <p>Step 2 – If no matching results are found, a "No Results Found" message appears with recommendations to refine the search.</p> <p>Step 3 – In case of internet connectivity issues during the search, the system alerts the user to check their connection and retry.</p>		
Expectations	<p>The search should support filters like price range, product category, and manufacturer.</p> <p>The search results should be accurate and relevant, enhancing user satisfaction.</p>		
Frequency of use	High		
Assumptions	Farmers have access to devices with stable internet connectivity for seamless search experiences		

Use case ID	BR007		
Use case name	Add to cart option		
Created by	Ashwadeepa	Last updated by	Jan 7 th 2024
Date created	Jan 1 st 2024	Last revision date	Jan 8 th 2024
Actor	Farmer		
Description	Farmers should be required to create an account or log in to add products to the cart or the buy-later list		
Pre – condition	Farmer is logged in. The products catalog is displayed.		
Post – condition	Selected products are added to the buy-later list		
Normal flow	<p>Step 1 - The user visits the website and browses through the product catalog.</p> <p>Step 2 - The user logs into their account using their email ID and password.</p> <p>Step 3 - The user selects a product they are interested in but does not wish to purchase immediately.</p> <p>Step 4 - The user clicks the "Add to Buy-Later List" option associated with the product.</p> <p>Step 5 - The system confirms the addition of the product to the Buy-Later List.</p> <p>Step 6 - The user can view the Buy-Later List at any time by navigating to their account dashboard.</p>		
Alternate flow	<p>Step 1 - If the user is not logged in and tries to add a product to the Buy-Later List, the system prompts the user to log in or create an account.</p> <p>Step 2 - If the user enters incorrect login details, the system displays an error message and allows them to retry.</p> <p>Step 3 - If the user does not have an account, they can register by providing their email ID and creating a secure password.</p>		
Expectations	The system should notify users if an item in their Buy-Later List goes out of stock or has a price change.		
Frequency of use	Low		
Assumptions	Users are familiar with the concept of a Buy-Later List and understand its purpose.		

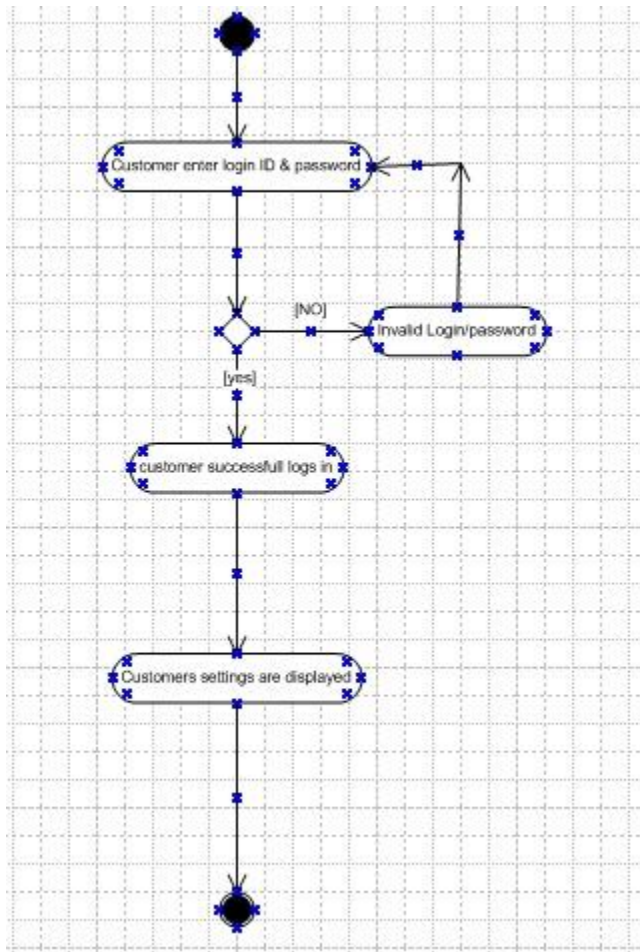
Use case ID	BR009		
Use case name	Payment Gateway		
Created by	Ashwadeepa	Last updated by	Jan 12 th 2024
Date created	Jan 10 th 2024	Last revision date	Jan 13 th 2024
Actor	Farmer		
Description	The application should provide multiple payment options, including Cash-on-Delivery (COD), Credit/Debit cards, and UPI.		
Pre – condition	Farmer has selected products for purchase.		
Post – condition	Payment is processed and confirmed.		
Normal flow	<p>Step 1 - The user selects the desired products and proceeds to the checkout page.</p> <p>Step 2 - The payment gateway displays available payment options: Credit/Debit card, UPI, and Cash on Delivery (COD).</p> <p>Step 3 - The user selects a payment method and provides necessary details (e.g., card number or UPI ID).</p> <p>Step 4 - If using COD, no additional details are required, and the order is confirmed.</p> <p>Step 5 - Upon successful payment, the user receives a confirmation message on the website.</p> <p>Step 6- An email confirmation is sent to the user, detailing the order summary and payment status.</p> <p>Step 7 - The order is forwarded for processing and shipping.</p>		
Alternate flow	<p>Step 1 - If the payment fails due to incorrect details, insufficient funds, or technical issues, the user is notified immediately.</p> <p>Step 2 - The user can retry with the same method or choose an alternate payment method.</p> <p>Step 3 - In case of persistent failure, the system provides a contact support option to assist the user.</p> <p>Step 4 - If COD is selected, and the user wants to modify the payment method later, they can do so before order processing begins.</p>		
Expectations	<p>The payment gateway should be secure and comply with industry standards</p> <p>Transaction success or failure notifications must be instantaneous and clear.</p> <p>Email confirmations must include all order details, payment status, and estimated delivery timelines.</p>		
Frequency of use	High		
Assumptions	<p>All users have access to the internet and a valid payment method (card, UPI, or COD).</p> <p>Users understand basic online payment processes.</p>		

Use case ID	BR010		
Use case name	Product delivery tracking		
Created by	Ashwadeepa	Last updated by	Jan 17 th 2024
Date created	Jan 15 th 2024	Last revision date	Jan 18 th 2024
Actor	Farmer		
Description	A delivery tracker should be available to track the current status and location of the or order.		
Pre – condition	Farmer has made a purchase and received order confirmation.		
Post – condition	Delivery status is displayed		
Normal flow	<p>Step 1 - The user logs into the platform using their registered email ID and password.</p> <p>Step 2 - The user navigates to the "Order History" or "Delivery Tracking" section.</p> <p>Step 3 - The platform displays a list of recent orders with details such as order ID, product name, and status.</p> <p>Step 4 - The user selects an order to view its delivery tracking details.</p> <p>Step 5 - The system fetches the delivery status in real-time and displays details such as dispatch date, current location, estimated delivery date, and delivery progress.</p> <p>Step 6- The user reviews the tracking information and logs out or navigates to other sections of the platform.</p>		
Alternate flow	<p>Step 1 - If a delivery is delayed, the system sends an updated notification with the revised estimated delivery time.</p> <p>Step 2 - If the order is canceled by the user or due to unforeseen circumstances, the system processes a refund and updates the user via email.</p> <p>Step 3 - If the real-time delivery tracking system is temporarily unavailable, the platform displays the last known status of the order and an estimated delivery date.</p>		
Expectations	<p>Users receive email notifications with updates on critical delivery milestones, such as dispatch, transit, and delivery completion.</p> <p>Delivery tracking information includes comprehensive details like package current location, expected delivery time, and delivery agent contact (if applicable).</p>		
Frequency of use	High		
Assumptions	The delivery tracking system is robust and functions seamlessly across different devices, including desktops and smartphones.		

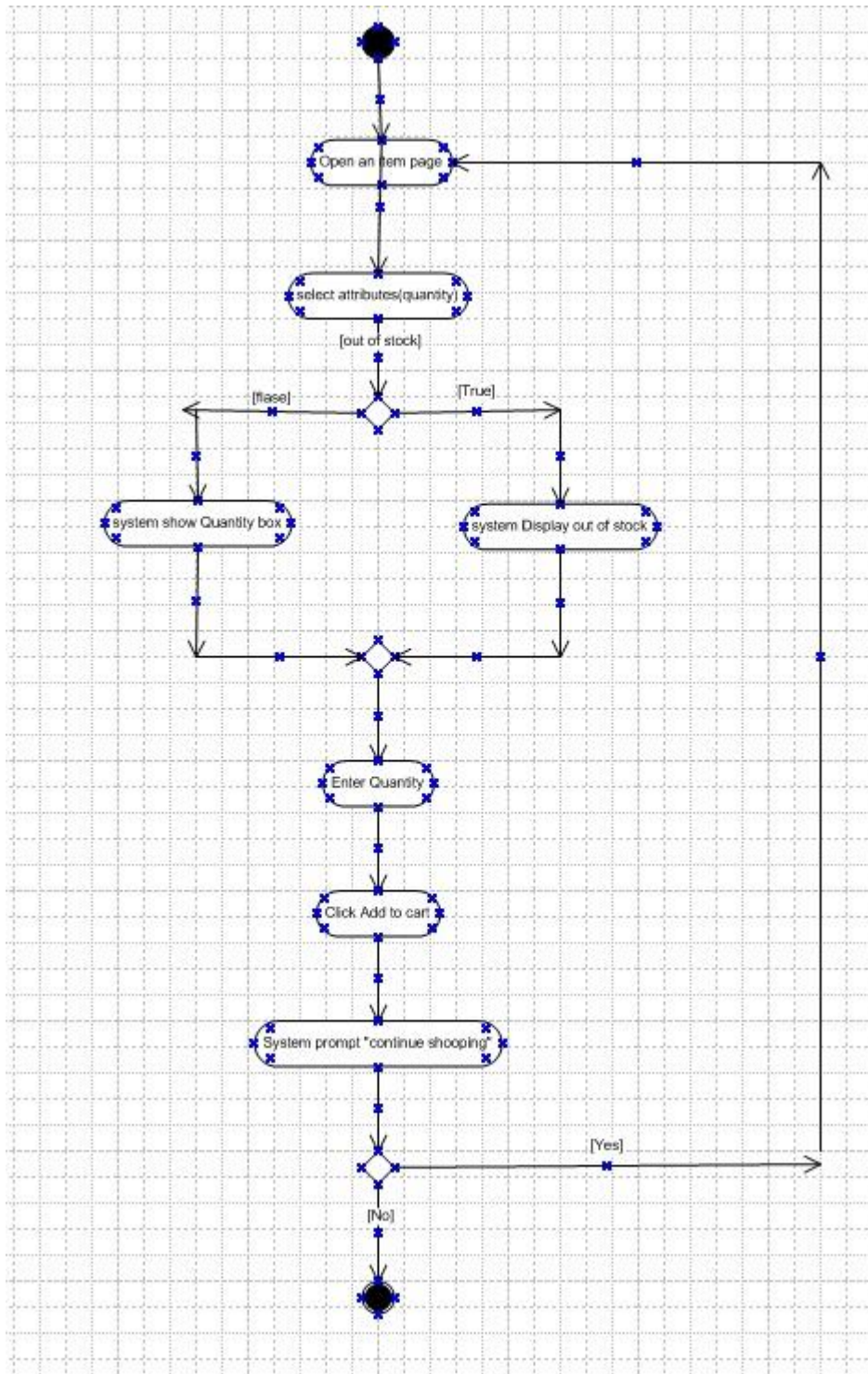
Q12 Activity Diagrams

Ans An activity diagram is a type of diagram in the unified modeling language (UML) that visually represents the flow of activities within a system .

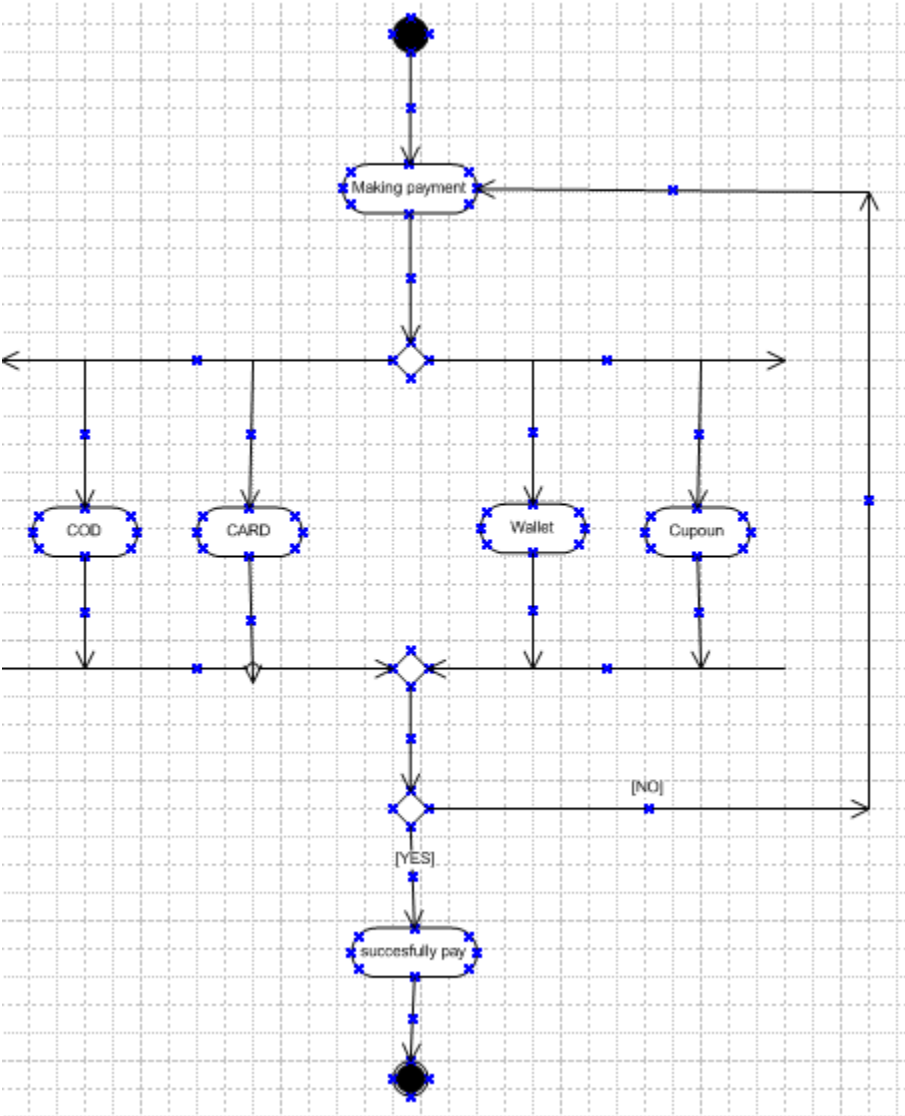
USER LOGIN



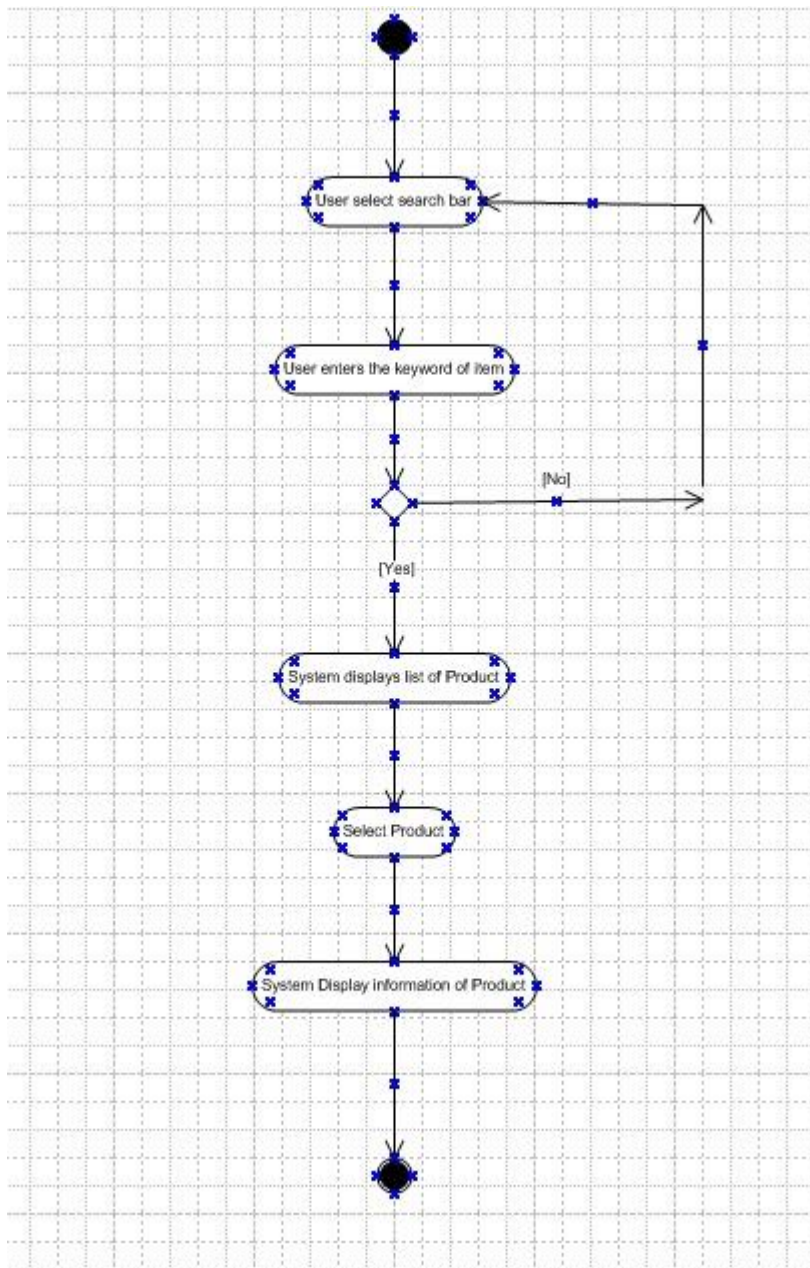
ADD TO CART



PAYMENT PROCESS



SEARCH PRODUCTS



DELIVERY

