Question 1 BA Audits

Project is planned in four quarterly audits (Q1, Q2, Q3, and Q4). These audits are checkpoints to ensure that the project is progressing as expected, adhering to the budget, timeline and quality standards.

Q1 Audit:

* Confirming project initiation activities.
* Making sure that stakeholder analysis, elicitation techniques, and requirements gathered are documented.
* Review of the initial BRD and its alignment with the projects goal.

Q2 Audit

* Assessment of the system design and architecture (3-tier architecture).
* Verify the documentation of use cases, activity diagrams, and screen mock-ups.
* Ensure the development team has clear understanding of the requirements.
* Confirm stakeholder sign-offs on finalized documents.

Q3 Audit:

* Mid-development review to track progress against deliverables.
* Evaluate prototypes or demo builds for adherence to requirements.
* Ensure feedback from farmers and manufacturers is incorporated.

Q4 Audit:

* Final review of UAT (User Acceptance Testing) plans and execution results.
* Ensure all requirements are met, and no critical issues remain unresolved.
* Review of project closure activities, including sign-off from stakeholders.

Role of BA in Audits

* Ensure that all requirements are captured and documented. And they are in line with deliverables
* Validate that each requirement is implemented and tested as per the expectations.
* Providing documentation of use cases, specifications, activity diagram and mock-ups as evidence during audit.
* Confirm all the BA processes align with organizational standards i.e. elicitation techniques, stakeholder analysis, documentation formats.
* Verifying all the documents like BRD, FRD, RTM are viewed and signed off.
* Ensuring that feedback from key stakeholders (Mr. Henry, Peter, Kevin, Ben and others) has been addressed.
* Document evidence of communication are maintained like meeting minutes, email and other communication with stakeholders.
* Ensuring all change requests raised by stakeholders or the project team are documented, approved, and implemented.
* Validate all the test cases are aligned with the requirements.
* Ensure that user acceptance testing results and client sign-offs are documented and archived.

Question 2: BA Approach Strategy

BA approach strategy

Elicitation techniques:

* Brainstorming, interviews, workshops, document analysis, prototyping and use case modelling.
* Brainstorming with the committee and key stakeholders for high level requirements; workshops with farmers for user friendly application design; and prototyping for validating interfaces and functionality.

Stakeholder analysis and RACI matrix

* Identify key stakeholders like Mr. Henry (sponsor), Peter, Kevin, Ben (farmers), Manufacturers, and internal team members (e.g., developers and testers)
* Developing RACI (Responsible, Accountable, Consulted, and Informed) matrix to clearly define roles.

Documents to be prepared

* Business Requirement Document
* Functional Requirement Document
* Use case documents
* Activity diagrams
* Requirement Traceability matrix

Approval process

* Presenting BRD and FRD for client review.
* Conducting formal meeting with stakeholder to keep informed about progress in the project and to get feedback on the same.
* Sign off can be taken on SRS as a primary and important document. Sign off can be taken by using email confirmation from client.

Communication channels

* Regular meetings – weekly status meetings, biweekly sprint reviews, and monthly stakeholder update. Using collaborative tools like MS Teams, Slack, or Jira

Handling Change Requests;

* Using structured change request form
* Assessing impact of change request in terms of time, cost and scope and document. Later taking permission from project manager on the same.

UAT Sign off

* Prepare UAT scripts.
* Conduct UAT sessions with stakeholders.
* Obtaining signoff using the client project acceptance form.

Question 3 – 3 Tier Architecture

The 3-tier architecture divides the application into three layers;

1. Application layer: It is also called as presentation layer it handles user interface (UI) components such as screens, pages.
2. This layer interact with users.
3. Handles user’s inputs and displays output.
4. Communicates with business logic layer to produce output

For example: HTML, JavaScript.

1. Business logic layer: It contains the core logic of the application, it acts as intermediary between application layer and database layer. Ex; printer and payment gateways.
   * 1. This layer the users input and executes the business rules.
     2. Contains core functionality and decision-making logic of the application.
     3. Processes requests from the presentation layer.
     4. Communicates with the data layer to retrieve or update data. For example: Java, Python.
2. Database layer: It is the bottom most layer responsible for storing and retrieving data.
   * 1. This layer is responsible for data storage and retrieval.
     2. Stores the application data securely.
     3. Handles data queries and transactions.
     4. Ensure data consistency and integrity.

For example: relational Databases (MySQL).

Question 4 – BA Approach Strategy for Framing Questions.

5W1H approach:

* Who are the users (Farmers/Manufacturers)?
* What features are essentials (catalogue, search, payment and delivery)?
* When product will be used (seasonal or year-around)?
* Where will the application be functional (remote villages)?
* Why are these features important?
* How will the users navigate the system?

SMART questions

* This technique will help in framing questions that are specific, Measurable, Achievable, Relevant and Time bound.
* These questions help in getting clarity on requirement.

RACI matrix:

* RACI matrix will help in clarifying roles and responsibilities within the team by outlining who is responsible, accountable consulted and informed for each task.

Unified modelling language

* It is a standardized way of diagramming and modelling software system to aid in design, development and communication between team members.
* It helps in developing diagrams to structure questions logically.

Question 5 – Elicitation Techniques

1. Brainstorming:

It can be utilized to gather good number of ideas from group of people. Usually brainstorming is used in identifying all possible solution to problems and simplifies the detail of opportunities.

1. Document analysis:

It is one of the elicitation technique where any existing process document is collected and reviewed to understand what is required. It helps in understanding as is process and assist in to be process.

1. Reverse engineering:

In this technique the existing system is reviewed to understand implemented requirements from the software code.

1. Focus group:

It is to elicit ideas and attitude about specific product or service in an interactive group environment. In this usually 6-12 individuals are taken and topic is given and they are free to share their opinion. Basically these groups are of two types homogeneous (of same background) and heterogeneous (are from different background).

1. Observation:

In this elicitation technique one visits a client office to understand how the system is working and this technique helps when client is not able to clearly explain what they need.

1. Workshop:

In this 6-10 or more users/stakeholders, work together to identify the requirement. These are tend to be of defined duration rather than the outcome. These are faster than a group interview to elicit the requirement.

1. Joint application development:

This technique is the extended version of the workshop here system analyst and stakeholder interact with each other to get high quality requirements. In this technique simultaneous gathering and consolidation of high amount of information happens.

1. Interview:

This is a systematic approach to elicit requirement from individual or group of people in formal or informal setting by talking to a person. It is easy method as not much preparation is needed.

1. Prototyping:

Screen mock-ups can support requirement gathering process but only if they are introduced at the right time. If not then it will be problematic. This helps the client and stakeholders to visualize the functionality of the system.

1. Questionnaire:

In this technique questions are prepared based on requirement to get specified answer. Good for getting input at low cost and time saving. These are slow to create and may not get proper response as filling questionnaire is low priority for most of the people.

Question 6: This project elicitation techniques.

1 Prototyping

1. This technique provide stakeholders with a visual representation of the proposed system.
2. Creating wireframes or mock-ups showing the login page, product catalogue, search bar, payment gateway, and delivery tracker
3. Sharing the same with farmers and Mr. Henry to confirm usability and functionality.
4. Helps stakeholders like peter, Kevin and Ben and Mr. Henry visualize how the application will look and function.
5. Allows in change of requirements like the login system, product catalogue, search option, payment process, and delivery tracker.
6. Reduces misunderstandings and helps align expectation with reality.

2 Use Case Specifications

1. This defines the systems functional requirements through detailed used cases. Such as “browse product catalogue” “search for products” “add to cart” “make payment” and “track order”.
2. Farmers (end-users) can clearly see how they will interact with the system to browse, search, and purchase products.
3. Manufacturers will see how they will add and manage their product details.
4. It shows how specific scenarios like payment gateway usage and order tracking are documented and understood.
5. Documenting actors and their interaction with the system.

3 Document Analysis

1. In this we analyse existing documents and reports for insights.
2. Helps in understanding SOONYs organizational goals and policies related to CSR initiative.
3. Helps in reviewing any existing agricultural product procurement process to align the application with industry standards.
4. Provides the background knowledge to structure the product catalogue effectively.

4 Brainstorming

1. This technique helps in generating innovative ideas and solutions collaboratively.
2. It engages stakeholders like Peter, Kevin, and Ben and development team in suggesting user friendly features for the platform.
3. Helps In identifying the features like specific payment gateway options like UPI or COD and delivery tracker details and notifications.
4. This promotes creativity and ensures no critical requirement is overlooked.

Using these elicitation technique ensures that all the stakeholders’ requirements are gathered comprehensively, the system is user friendly, and the features align with both client expectations and end user’s needs.

Question 7: Business Requirements

BR001: Users must be able to search for products (fertilizers, seeds and pesticides)

BR002: Users should be able to browse through product catalogue.

BR003: User need to create login ID and Password.

BR004: If the user is new to the platform he/she must be able to sign up.

BR005: Manufacturers must be able to upload, update and manage their products.

BR006: Users must be able to search specific products by name, type or category.

BR007: Each product should have dedicated page displaying detailed information.

BR008: Users must be able to add product to shopping cart and wish list for future consideration.

BR009: The system must support multiple payment options like debit/credit card, UPI and COD

BR010: Payments must be secure and send confirmation to the user.

Question 8 - Project Requirements Priority

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement ID | Requirement Name | Requirement Description | Priority |
| BR001 | Former Product Search | Farmers can search products (fertilizers, seeds and pesticides) | 8 |
| BR002 | Manufacturer product upload | Manufacturers upload and display products. | 8 |
| BR003 | User login system | All users must have login credentials. | 10 |
| BR004 | Payment gateway | Payment options(COD, UPI, debit/credit cards) | 10 |
| BR005 | Delivery tracker | Track orders easily. | 9 |
| BR006 | User notification | Email/text message confirmation. | 8 |
| BR007 | Product catalogue | Detailed product catalogue with search functionality. | 9 |
| BR008 | Users account creation. | Users can create account easily. | 9 |
| BR009 | Secure system | Secure database and user information. | 10 |
| BR010 | Report generation | Reports of sale and order history. | 7 |

Question 9: Assumptions

1. Farmers and manufacturers in remote areas have basic access to smartphone and internet connectivity.
2. Manufacturers are responsible for maintaining accurate product details of stock.
3. Payments methods like UPI and COD are commonly used and preferred in the targeted demography.
4. The system will adhere to government regulations and industry standards for online transactions and data protection.

Question 10: Use Case Diagram



Question 11: Use Case Specs

1 User Registration.

|  |  |
| --- | --- |
| Use case 1: | User Registration. |
| Use Case ID: | UC-01 |
| Actors: | Farmers and Manufacturers |
| Description: | Allows users to create a new account to access the application. |
| Preconditions: | Users must have Email ID/Phone number. |
| Normal Flow: | 1. The users select the register option on login page. 2. The system prompts the user to enter details such as Name, Email ID, Phone Number and Password. 3. The user submit the details. 4. A confirmation email is sent to the user. 5. By confirming OTP sent to mailed user get access to application |
| Post conditions: | Registered user can login to the system. |
| Alternative Flow: | If the Email ID is already registered then popup shows already registered text. |

2 Browsing Product Catalogue

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| --- | --- |
| Use case 2: | Browse product catalogue |
| Use Case ID: | UC-02 |
| Actors: | Farmers |
| Description: | Allows farmers to browse through available product catalogue |
| Preconditions: | The users must be logged in. |
| Normal Flow: | 1. The user navigates through the product catalogue. 2. The system displays the available products categorized by fertilizers, seeds and pesticides. 3. The user selects a category to view more details. |
| Post conditions: | The user can view product details and add items to cart or wish list for future consideration. |

3 Product Purchase

|  |  |
| --- | --- |
| Use case 3: | Product Purchase |
| Use Case ID: | UC-03 |
| Actors: | Farmers |
| Description: | Farmers can purchase products from the catalogue |
| Preconditions: | The user must be logged in and have items in the cart. |
| Normal Flow: | 1. The user navigates to the cart 2. User selects proceed to checkout 3. The system open payment page there will have multiple payment methods ( Credit/Debit card, UPI or cash on delivery) 4. The user complete payment process 5. The system confirms order and sends confirmation mail to registered mail ID with order details. |
| Post conditions: | The order is placed successfully and delivery tracking is enabled. |

**4 Add Product by Manufacturer**

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| --- | --- |
| Use case 4: | **Add product by Manufacturer** |
| Use Case ID: | **UC-04** |
| Actors: | **Manufacturers** |
| Description: | **Manufacturers can list their products in the catalogue** |
| Preconditions: | **Manufacturers must be logged in.** |
| Normal Flow: | 1. **The manufacturer navigates to the add product page** 2. **The system allows manufacturer to input product details including name, category, description, price and stock quantity.** 3. **The manufacturer submits the details.** 4. **The system validates and adds product to the catalogue.** |
| Post conditions: | **The product will be verified by the system and Is uploaded in the product catalogue** |
| **Alternative flow** | **If mandatory fields are missing, the system displays an error message.** |

5 Delivery Tracking

|  |  |
| --- | --- |
| Use case 5: | Delivery Tracking |
| Use Case ID: | UC-05 |
| Actors: | Farmers |
| Description: | Farmers can track the delivery status of their orders. |
| Preconditions: | The users must have placed an order. |
| Normal Flow: | 1. The user navigates to the My order section 2. The system displays a list of orders. 3. The user selects an order to view tracking details. 4. The system retrieves and display the current status and estimated time. |
| Post conditions: | Users can track their orders. |
| **Alternative flow** | If the order status is unavailable, the system displays a message indicating that the tracking information will be updated soon. |

Question 12: Activity diagram.







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