**Capstone Project1 – Part -2/3**

**Question 1 – Audits**

Auditing is defined as the one-site verification activity, such as inspection or examination of process or quality system to ensure compliance to requirements.

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| Quarter 1 Audit Report (Requirement Gathering Phase) |  |
| Tenure (Completed) | 15 weeks (Week 1 to week 15) |
| Checklist | * BRD * Elicitation results report * Email Communication (To,CC,BCC) * Duplicate requirement report * Grouping of functionalities / features * Client sign off |

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| Quarter 2 Audit Report ( Requirement Analysis Phase) |  |
| Tenure (Completed) | **7 Weeks (week 16 to week 23)** |
| Checklist | * UML Diagrams * Business to functional requirement mapping * Client sign off documents * RTM document version control * Email Communication (To,CC,BCC) |

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| Quarter 3 Audit Report ( Design & Development) |  |
| Tenure (Completed) | **30 weeks (week 23 to 53)** |
| Checklist | * Utilization of tools * Documented evidence on client communication * Stakeholder MOM / BA & Developer MOM * Email Communication (To,CC,BCC) * JAD session report * End user Manual preparation document |

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| Quarter 4 Audit Report(Testing) |  |
| Tenure (Completed) | **25 weeks (week 54 to week 78)** |
| Checklist | * Test case summary * Training report to end user * Lessons learnt documents * Email Communication (To,CC,BCC) |

**Question 2 – BA Approach Strategy**

* **What elicitation technique to apply**

We have many elicitation technique to apply used to gather requirements.

Some of them are:-

1. Brainstorming 2> Document Analysis 3> Reverse Engineering

4> Focus Group 5> Observation etc.

* **How to do Stakeholder Analysis RACI/ILS**

Stakeholder analysis can be done by using RACI matrix involves identifying stakeholders and defining there roles and responsibilities within a project.

Identify stakeholders, Define Roles and Responsibilities, Create the RACI Matrix, Assign RACI Roles.

* **What documents to write**

BRD, FRD, Use Case Documentation, Test Case Documents etc.

* **What process to follow to sign off on the documents**

Sign off to be taken on SRS as this is the important document. Sign off can be taken by using E-mail confirmation from client.

* **How to taker approval from the client**

Establish a formal meeting with the clients to keep them informed and get continuous feedback.

* **What communication channels to establish n implement**

Regular meetings- Weekly status meeting, bi-weekly sprint reviews, and monthly stakeholder updates.

* **How to Handle Change Request**

Change Request Form, Do Impact Analysis, Approval Process, Documentation.

* **How to update the progress of the project to the stakeholders**

Weekly Status Reports, Monthly Review Meetings

* **How to take signoff on the UAT- Client Project Acceptance Form**

UAT Preparation, Conduct UAT, Fix Issues, Acceptance Form, Final Review Meeting, Obtain Sign-off.

**Question 3 – 3-Tier Architecture**

Three tier architecture a software development model that organizes an application into three logical tiers

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| **3-Tier Architecture** |  |
| Client Tier | Client Computer |
| Business Logic Tier | Application Server |
| Database Tier | Database Server |

This divides the application into 3 logical layers:-

* **Application Layer**

1. Topmost layer architecture
2. It also known as Presentation Layer
3. It handles user interface (UI) components such as screens, pages

Ex: E-commerce Website

* **Business Logic Layer**

1. Middle layer of architecture
2. Acts as intermediary between the presentation layer and data storage layer
3. Layer contains the core logic of application

Ex: Printer, payment gateways

* **Database Layer**

1. Bottom most layer of the architecture
2. Responsible for storing and retrieving data

Ex: MySQL, Oracle database

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

* **5W1H** -> It is a useful tool for gathering information and understanding a situation by answering questions about Who, What, When, Where, Why and How.
* **SMART** -> This technique can helps in creating questions

S – Specific

M – Measurable

A – Attainable

R – Relevant

T – Time Bound

* **RACI**-> This chart helps in defining and clarifying roles and responsibilities within team by outlining who is responsible, accountable, consulted, and informed for each task.
* **3 tier Architecture**-> This is a software development model that organizes an application.

1. Presentation Tier 2> Application Tier 3> Data Tier

* **Use Cases** ->It askscenario-specific questions to define user interactions

**Use Case Specs** -> it questions about detailed workflows

**Activity Diagram** -> It questions about process flow

* **Page Design** -> It ensure the application is user friendly

**Question 5 – Elicitation Techniques**

1. **B – Brainstorming: -** It is a creative thinking technique for coming up with new ideas and solving problems.
2. **D – Document Analysis: -** It is a process of reviewing or evaluating documents both printed and electronic in a methodical manner.
3. **R – Reverse Engineering: -** This process involves working backwards fromthe original design process with limited knowledge of the techniques and tools used to create the products.
4. **F – Focus Groups: -** It is a form of qualitative research in which a group of people are asked about their attitude and feelings towards a product, service, concept, advertisement or ideas.
5. **O – Observation: -** It involves recording and analyzing what is seen through the use of one’s senses.
6. **W – Workshops:-** It serves as a critical platform for gathering insights, aligning expectations , and fostering collaboration among stakeholders
7. **J – JAD (Joint Application Development): -** It is a collaborative process that involves clients, stakeholders, and developers to define and develop a product**.**
8. **I – Interview: -** It is a method used to gather information from participants through interviews.
9. **P – Prototype: -** It involves creating a prototype of the final product and then refining it based on feedback.
10. **Q – Questionnaire:-** It is a method for gathering information through questionnaires, surveys and other tools
11. **U – Use Case Specs: -** It involves methods like brainstorming, stakeholder interviews, prototyping, user observation, document analysis, and scenario planning to gather detailed description of how users will interact with a system.

**Question 6 – This project Elicitation Techniques**

For this project, I would use the following elicitation techniques:

1. Prototyping

* Justification: - This is highly visual approach that helps stakeholders (like farmers and manufacturers) understand what the final application may look like.

Mock-ups or wireframes of the login page, product catalog, search options, and payment gateways can help validate requirements.

1. Use case Specs

* Justification: - Creating use case helps understand how the application will handle scenarios like farmers logging in, browsing catalogs, making purchases, and tracking orders. This ensures clarity in functional requirements.

1. Document Analysis

* Justification: - Existing reports, market studies, or processes related to the agriculture industry can provide insights into challenges farmers and manufacturers face. This would help in building features relevant to the domain.

1. Brainstorming

* Justification: - Collaborative brainstorming with stakeholders like Mr. Henry, Peter, Kevin and Ben can help generate ideas about features and functionalities needed in the application. This would ensure to key functionality is overlooked.

**Question 7 – 10 Business Requirements**

Business Requirements are the specific needs or conditions that a business must meet to achieve its objectives.

* User Registration and Login: - The application must provide functionality for users (farmers & manufacturers) to register and login securely.
* Product Catalog Management: - Manufacturers must be able to upload and manage the details of fertilizers, seeds and pesticides in the catalog.
* Product search and Filtering:- Famers should have an advance search option to search products by name, category, or price range
* Add to Cart and Buy Later: - Farmers must be able to add products to a cart or “buy later” list for future purchases.
* Payment Gateway Integration :- The application must include payment method like COD, Credit/ Debit Card, UPI for seamless transaction
* Order Confirmation :- The system must send an order confirmation email to farmers once a purchase is completed
* Delivery Tracking: - Farmers should have the ability to track their order’s status in real-time.
* User Friendly Interface: - The application must have a simple and intuitive interface to cater to user with limited technical expertise.
* Multi-Language Support:- To cater to farmers in remote areas, the application should support multiple languages based on their locality
* Support and Feedback System: - The application must provide a feedback and support mechanism for farmers and manufacturers to address issues or give suggestion.

**Question 8 –Assumptions**

* **Internet Connectivity and Device Availability**

Farmers and manufacturers have an access to stable internet access and mobile or computer device to use app and web

* **Multilingual Support**

The application will provide support in multiple languages including regional language for ease use of farmers

* **Delivery Services**

A logistic system will be available to handle delivery of the products to the farmer’s location

* **Regulatory Compliance**

The application will comply with local agriculture product regulations and standards.

* **Payment Systems**

Farmers and manufacturers will have access to digital payment methods and the platform will support secure payment gateways.

* **Technical Literacy**

The farmers have a basic understanding of how to operate the application or training/guidance will be provided.

* **Manufacturer Engagement**

Manufacturers are willing to onboard their product information and manage their inventory through the application

**Question 9 – This project Requirement Priority**

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| --- | --- | --- | --- | --- |
| Req ID | Req Name | Req Description Priority | |  |
| BR001 | Farmer Creates login | User should be able to create login id he is new user | 1 | |
| BR002 | Farmer search for product | Farmers should be able to search for available products | 3 | |
| BR003 | Farmer browse through products | Farmer should be able to browse through available products | 2 | |
| BR004 | Email Confirmation | Famers should get confirmation for their orders | 4 | |
| BR005 | Add to cart option | Famers must be able to add the product in cart if they want to buy any product | 7 | |
| BR006 | Product Information | Farmers should get information for each product | 6 | |
| BR007 | Payment Gateway | All payment method should be available (Cash, Card, UPI, Wallet) | 5 | |
| BR008 | Delivery Tracking | Farmer must be able to track the delivery of the product | 9 | |
| BR009 | Manufacturers can add product in product catalog | Manufacturer must be able to add the product and also should be able to display the product | 8 | |

**Question 11 – Use Case Specs**

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 1: Register Farmer/Manufacture**

* **Actors:** Farmer. Manufactures
* **Preconditions:** User must valid internet connectivity and identification details
* **Main Flow**

1. Farmer/Manufacturer access the application
2. Select “Register” option
3. Provide required details ( Name, Location, Contact details etc)
4. Submit registration details
5. System validate details and approves or requests correction
6. Registration confirmation send to user

* **Postconditions:** Farmers/Manufactures successfully register in the system
* **Exception:**

1. Invalid or missing details
2. Duplicate registration attempt

**Use Case 2: Upload Products (Manufacturer)**

* **Actor:** Manufacturer
* **Preconditions:** Manufacturer must be registered and logged in
* **Main Flow**

1. Manufacturer logs into the application
2. Navigates to the “Upload Products” section
3. Fill product details (Type, Description ,price, stock)
4. Upload product images
5. Upload product pricing
6. System validates and approves the product for listing

* **Postconditions:** Product listed for farmers to view
* **Exception**

1. Incomplete product details
2. Invalid file formats for images

**Use Case: Browse Products (Farmer)**

* **Actor:** Farmer
* **Precondition:** Farmers must be registered and logged in
* **Main Flow**

1. Farmer logs into the application
2. Select “Browse Products” option
3. Applies filters (Type, Price. Location)
4. Views product details
5. Adds selected product to cart

* **Postconditions**: Products added to cart for purchase
* **Exceptions**

1. No products available in selected filters

**Use Case 4: Place Order (Farmers)**

* **Actor:** Farmer
* **Precondition:** Farmer must be logged in and have products in the cart
* **Main Flow**:

1. Farmer reviews cart items
2. Confirms delivery location
3. Selects payment option
4. Place the order
5. System confirms order and shares tracking details

* **Postconditions:** Order placed and recorded
* **Exceptions:**

1. Payment failure
2. Invalid delivery location

**Use Case 5: Track Order (Farmer)**

* **Actors:** Farmer
* **Preconditions:** Farmer must have placed an order
* **Main Flow:**

1. Farmer logs into the application
2. Navigates to the “Track Order” section
3. Selects the order to track
4. System displays current order status and estimated delivery date

* **Postconditions:** Order status displayed
* **Exceptions:** System delays in updating order tracking

**Question No 10- Use Case Diagram**



**Question No 12- Activity Diagram**

1. **Farmer Registration and Logging In**



1. **Farmer Browsing and Purchasing**



1. **Manufacturer Adding Products**



1. **Admin Moderating Products**



1. **Order Delivery**

