**TRADITIONAL DEVELOPMENT**

**CAPSTONE PROJECT 1-PART-2/3**

Q.1. 4 Quarterly audits are planned Q1,Q2,Q3,Q4 for this project what is your knowledge on how these audits will happen for BA?

ANS:

**AUDITS:**

An Audit is a formal review of a person or a company’s financial records and operational practices by professional accountants, audit can be conducted by external or internal auditors it plays a crucial role in assessing a company’s operational efficiency and integrity of its accounting processes.

**TYPES OF AUDITS:**

Internal audits and external audits

Internal audits:

internal audits are employed by the company or organization for whom there performing the audit. the resulting audit is directly given to management and board of directors.

Internal audits are used to make managerial changes and improvements to internal controls, it helps to maintain accurate and timely financial reporting and data collection, before its review by external auditors

external audits:

audits performed by the outside parties, which helps to reviewing the state of a company’s financials, used to identify whether there are any misstatements in financial statements.

They follow a set of standards that are different from those of the company or organization hiring them to work, they are candid and honest, they won’t affect daily work relationships within the company.

**Benefits of quarterly audits:**

* Operational efficiency
* Accuracy in financial reporting
* Risk management
* Continuous improvements
* Stakeholder confidence
* Benchmarking performance

|  |  |  |
| --- | --- | --- |
| **Quarter** | **activity** | **BA to assist in audit process** |
| Q1 | Requirement gathering  | Provide, collect and document stakeholders’ requirements documents like BRD, FRD etc. |
|  | Stakeholder analysis | Identify and analyze stakeholders’ needs and expectations |
|  | Feasibility study | Assess technical and financial feasibility of proposed solutions with the auditor |
|  | Business Requirement Document (BRD) | Review a comprehensive BRD for stakeholder sign-off |
| Q2 | Requirement validation | Review requirements with stakeholders for accuracy |
|  | Use case development | Review developed use cases and user stories |
|  | Prototyping  | Review initial prototypes or wireframes for feedback |
|  | Change request management | Review document and changes to requirement |
| Q3 | Requirement traceability | Review audit compliance of all requirements are traceable throughout SDLC phases  |
|  | Impact analysis | Review impact of changes on project scope and timelines |
|  | Risk assessment  | Review risk documents related to the requirements |
|  | User acceptance criteria | Review defined criteria for UAT |
| Q4 | Performance review | Review effectiveness of business analysis activities |
|  | Lesson learned | Review lesson learned from the business analysis process |
|  | Stakeholder feedback | Review feedback documents from stakeholder on the requirements process |
|  | Process improvement recommendations | Suggest improvements based on audit fingers |

**Conclusion:**

audits plays crucial role and maintaining high standards of operational efficiency and accuracy in financial reporting, during audits I will give relevant information and documentation concerning project requirements,design,development,testing and deployment ,I will actively participate in discussions, provide updates on projects status

**Q2. BA Approach strategy**

Elicitation technique:

Elicitation techniques are used to gather the requirements some techniques are:

1.brainstorming:

Conducting sessions, so participants can share their ideas openly, encouraging creativity without criticism, main goal is to generate ides quickly

2.interviews:

Conducting one-on-one interviews with each stakeholders to gather detail requirements which are used to complete the project

3.workshops/focused groups:

Workshops focused to bring key stakeholders and subject matter experts(SME’s) for planning,analysis,design,scoping and requirements elicitation, used to discuss on new features and helps to reach typical topics.:

4.Surveys/questionnaire’s:

It will be distributed to stakeholders and SME’s which contain both open and closed-ended questions which are used to gather insights of products and behavioral attitudes.

**B. Stakeholder analysis:**

Stakeholder analysis involves identifying and analyzing those who impacted by the project changes

Identifying stakeholders are:

**Internal stakeholders**:

Project manager: Mr. Vandanam

Senior java developer: Ms. Juhi

Java developers: Mr. Tyson, Ms. Lucie, Mr. Tucker, Mr. Bravo

Db admin: Mr. John

Network admin: Mr. Mike

Testers: Mr. Jason, Ms. Alekhya

Business analyst: Ms. Shoba

**External stakeholders:**

Project sponsor: Mr. Henry

Financial head: Mr. Pandu

Project coordinator: Mr. Dooku

Key stakeholders: Peter, Kelvin, Ben

**Stakeholder analysis RACI Matrix:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tasks | Mr. henry(sponsor) | Peter, kelvin, ben (key stakeholders) | Mr. Karthik (Delivery Head) | Mr.vandanam (PM) | Ms.juhi (senior java developer) | Teyson,Lucie,Tucker,Bravo(java developers) | Mr. Jason and Ms.Alekya(Testers) | Ms. Shoba(BA) |
| Requirement gathering | c | I |  |  |  |  |  | R |
| Requirement analysis |  | I |  | A |  |  |  | R |
| Design |  |  |  |  | A | R | R |  |
| Development | R/A | A/C | R |  | R | R |  |  |
| TESTING | I | I | R | I |  |  | R |  |
| IMPLEMENTATION |  | R | I |  | R |  |  |  |
| UAT | I |  | R/A | R |  |  | I |  |

**C. Documentation:**

* key documents are
* project vision document
* business analysis plan
* project feasibility study document
* stakeholder analysis (RACI)
* Business approach strategy
* Business requirements document (BRD)
* Functional requirements specification (FRS)
* System requirement specification (SRS)

**D. Document sign-off:**

* Sign-off will be via email and physical signatures from relevant stakeholders:
* Project vision document
* Project feasibility study document
* Business requirement document
* FRS/SRS

**E. Approval process:**

To discuss approvals, I will contact with stakeholders and follow up with detailed emails, highlight it in regular meetings.

**F. Communication channels:**

* Face to face communication
* Video conferencing
* Phone calls
* Emails

**G. Handling change requests:**

Understand the scope of the change

Securing necessary approvals on cost and time

Communicate and implement the changes with help of stakeholders

**H. Project progress updates:**

Regular updates will be submitted to stakeholders, project manager and technical team

* Status report
* Meetings
* Dashboard reports

**I.User acceptance testing (UAT):**

Allowing clients to test the system and provide feedback. After completion of project I will prepare a brief report for stakeholders and execute summarizing details of project plan any issues or risk encrypted and for overall project user acceptance testing (UAT) is conducted to validate the project deliverables, based on UAT results obtaining sign-off from the client and project acceptance form, make sure project meets the client requirements and expectations.

**Q.3 3-Tier Architecture**:

3-Tier Architecture is a software architecture that consists of three layers they are:

Application layer, business logic layer and data base layer

**Application layer:**

Application layer is a top layer of the architecture and is responsible for presenting, interact with the end-users’ using screens and pages it is also known as user interface layer or client layer. This layer handles interaction between the user and the system.

**Business logic layer:**

This layer is middle of the architecture and contains the business logic of the system it is also known as logic layer or server layer.

This layer manages the application logic, data validation, data processing.it communicate with the application layer and data layer.

Code for implementing business rules, connecting to 3rd party tools-API(application programmed interface).

Example:

Printers, pen-drive, internet

**Data base layer:**

It is bottom layer of the architecture and is responsible for managing the data storage and retrieval, it is also known as data layer or server layer.

This layer is responsible for storing and retrieving data from a database management system (DBMS), it provides an interface for the application layer to access and manipulate data.

**Q.4 BA Approach strategy for framing questions:**

**5W 1H**:

Who is client?

Who are the users?

what is the organization structure?

What is the approval process in the company?

Where will the product be deployed?

Who will benefit from this project?

What is the timeline for the project?

What is the project and what are the objectives?

Why client approached to develop the project?

How much is the budget?

What is the current process followed by the farmer to purchase the products?

What is shown in the first after opening the URL?

How manufactures will upload the product in to the application?

What things should keep in filter while searching the product?

How many users can use application at a time?

What things should use to login the application mobile/email/number?

When the application is used?

**SMART:**

Make sure that questions are specific, measurable, attainable, relevant and time-bound.

We can ensure that the questions we ask lead to clear, attainable and measurable responses that support the overall project goals.

**RACI Matrix:**

It is an essential tool for clarifying roles and responsibilities within a project.

**Responsible**: these are the individuals who carry out the tasks needed to achieve project objectives.

**Accountable:** this person is responsible for the overall success of the task.

**Consulted:** these stakeholders provide valuable feedback and insights throughout the project

**Informed:** this group consists of individuals who need to be kept updatedon project progress, while they do not participate in decision-making or provide feedback, it is important to keep informed about developments and outcomes.

**3-tier architecture:**

It is a structured frameworkthat separates in to 3 layers**:**

**Application layer:**

What functionalities should user interface provide to the end users?

What specific user interfaces need to be developed?

Are there any branding or design requirements for the presentation layer?

What types of inputs are required?

How will user feedback be collected and incorporated into the design?

**Business logic layer:**

What core business rules and logic need to be implemented?

What compliance and regulatory requirements must be considered?

Are there any existing reusable components?

How frequently do the business process change?

Who will responsible for maintaining and updating the business logic?

**Data layer:**

What types of data will be stored and what is the expected volume?

What data base management system (DBMS) will be used and why?

What operations will be required on the data?

How will data backup and recovery will be handled?

**Use Cases:**

This is a high-level diagram and mother of all diagrams, focus of the diagram will be how external interfaces will be interacting with the proposed IT System.

What type of product we will deliver?

Where should be the process be completed?

Who all are responsible for doing this?

Why this product will be used?

How will we deliver this project?

**Use case specs:**

Who are the primary and secondary actors?

What are the actor goals?

What are the main tasks that are performed by the actor?

**Activity diagram:**

Activity diagrams are visual representations that depict a sequence of actions or flow of control within a system.

Main purpose of activity diagram is to provide a clear depiction of how activities are interconnected within the system.

**Types of models:**

Conceptual model: ahigh level representation of system structure and behavior

Data model: focus on the organization and relationships of data.

Physical model: Details of physical implementation of system, software and hardware specifications.

**Page designs:** creating mock-ups and wireframes of the application’s user interface

It provides a clear structure for application

User experience tools enable designers to identify potential usability issues in early stage

Sharing this design with users and stakeholders invite valuable feedback.

**Q.5.Elicitation techniques:**

BDRFOWJIPQ

1.**Brainstorming**: this technique encourages open and creative thinking among stakeholders to generate ideas and identify requirements or solutions.

2.**Document analysis**: reviewing the existing documentation like business plan, process flows and user manuals extract relevant information and identify gaps or areas for improvement.

3.**Requirement workshops**:

Conducting sessions with stakeholders enable discussions to gather requirement, clarify doughts, resolve issues.

4.**Focus groups:**

Bringing all stakeholders together and encouraging to interact and exchanging the ideas, providing valuable insights on specific topic of interest.

**5.Observation:** actively observing the stakeholders in their work environment which helps to understand of their needs, challenges and workflows

6**.****Interviews:** Conducting one-on-one or group discussions allows to gather information, which helps to understand the stakeholder perspective.

7.**Prototyping:** used to create visual representation, interactive models proposed solutions which facilitate feedback, validates the requirements and improves the stakeholder understanding

8.**Questionnaries** **and surveys**: by distributing questionnaires and surveys which helps to collect qualitative and quantitative data from the stakeholders on specific topics or requirements.

9.**User stories**: Capturing the requirements from the user perspectives in a informative way which focus on user goals, actions and expected outcomes

10**.Use cases:** it is used to describe interaction between users and system, how system should behave and what actions should it take.

Concluding using these elicitation techniques, offers various approaches to engage stakeholders and gather their information and understand their requirements.

Selecting the elicitation technique depends on projects nature, stakeholders’ availability and information needed.

**Q.6.** **Which elicitation technique can be used in this project?**

For this project I would like to utilize following elicitation techniques:

**Brainstorming:** this technique used to generate more ideas to enhance the online stores for farmers and other users, by conducting group discussions with 10-15 members, we can gather valuable information from users and stakeholders, after gathering ideas, we will analyse and select one idea for implementing

**Prototyping:**

used to create visual representation, interactive models proposed solutions which facilitate feedback, validates the requirements and improves the stakeholder understanding

**Use case specifications:**

This technique combines both diagrams and textual descriptions to provide a understanding of the requirements. it is used to describe interaction between users and system, how system should behave and what actions should it take.

**Interviews**: Conducting one-on-one or group discussions allows to gather information, which helps to understand the stakeholder perspective.

**Focus groups:**

Bringing all stakeholders together and encouraging to interact and exchanging the ideas, providing valuable insights on specific topic of interest**.**

**Q.7.Business requirements:**

|  |  |
| --- | --- |
| BR001 | Easy to sign in: all users including manufactures should be able to sign in easily on system. |
| BR002 | Login security: users must be login by submitting their email id and password |
| BR003 | Product browsing and searching: user should able to search all products and ability to browse all products by visiting the website |
| BR004 | Buy now option with user friendly payment: this option should be available for users who wants to buy products immediately and easy payment gateway should be available like COD, credit/debit, UPI |
| BR005 | Order tracking and confirmation: user should able to track orders once they are placed and user should receive email confirmation regarding their order status. |
| BR006 | Cancellation and returns: user should be able to cancel or return product if they are not satisfied. |
| BR007 | Product upload: manufactures should be able to upload product and display their products on app. |
| BR008 | Address management: once logging in to the portal, users should be able to update address details. |
| BR009 | Mobile optimization: online store should be optimized for mobile devices, allowing users to use on smartphones and tablets |
| BR010 | Wishlist feature: user should have the option to save products for later for future purpose. |
| BR011 | Data security: securing the users data, there personal information, payment details |

 **Q.8.ASSUMPTIONS:**

**Target audience:** the online agriculture product store is designed mainly for farmers and companies who manufactures fertilizers, seeds and pesticides.

**Accessibility:** store will be available for both web app and mobile app

User requirements:

* User should have access to a laptop, desktop or mobile device
* For account creation and notification active email address is required.
* Users should have an active bank account with payment options like, COD, credit/debit, UPI
* A registered mobile number is necessary to receive otp’s for payment and delivery confirmation.

**User login system**: the store will implement secure login system for manufactures and users

**Product catalogue:**

a detailed product catalogue will be available, to showcase the information regarding products

**Product search functionality**: users have the capability of searching the product

**Account creation for farmers**:

users need to register for an account using mail id and password to make purchases or to add in Wishlist

**Payment gateway**:

it has multiple options which is very convenient to users such as COD, credit/debit and UPI

**Order confirmation**: users will receive confirmation regarding order status

**Order tracking**: tracking the status of product to be delivered

**Customer support chart:**

the application having chart feature to communicate with customer support regarding product inquiries

**Competition in manufactures**: competitors allow the manufactures to provide effective price and avoid lack of competition in market.

**Q.9.Project requirement priority:**

|  |  |  |
| --- | --- | --- |
| ID | Requirement description | Priority |
| BR001 | Easy to sign in: all users including manufactures should be able to sign in easily on system. | 1 |
| BR002 | Login security: users must be login by submitting their email id and password | 2 |
| BR003 | Product browsing and searching: user should able to search all products and ability to browse all products by visiting the website | 3 |
| BR004 | Buy now option with user friendly payment: this option should be available for users who wants to buy products immediately and easy payment gateway should be available like COD, credit/debit, UPI | 4 |
| BR005 | Order tracking and confirmation: user should able to track orders once they are placed and user should receive email confirmation regarding their order status. | 5 |
| BR006 | Cancellation and returns: user should be able to cancel or return product if they are not satisfied | 6 |
| BR007 | Product upload: manufactures should be able to upload product and display their products on app. | 6 |
| BR008 | Address management: once logging in to the portal, users should be able to update address details | 7 |
| BR009 | Mobile optimization: online store should be optimized for mobile devices, allowing users to use on smartphones and tablets | 8 |
| BR010 | Wishlist feature: user should have the option to save products for later for future purpose | 9 |
| BR011 | Data security: securing the users data, there personal information, payment details. | 10 |

**Q.11.Use case Specs:**

|  |  |
| --- | --- |
| Use case specification | Details |
| Use case id | 1 |
| Use case name | This use case explains how a farmer uses the online agriculture product store to buy fertilizers |
| Brief description | User buying fertilizers from online agriculture product store |
| actors | 1.farmers2.database/admin |
| Pre-conditions | They should have laptop/mobile with an active internet connection |
| Basic flow | User login, user validation is performed, customer searches for product, user selects product, payment mode and delivery location, order placed and use case end successfully |
| Alternate flow | Invalid user: if user validation fails, app displays: user validation not completed successfully, use case ends with failure conditionproduct out of stock: if selected product is out of stockapp displays: product out of stock, select from similar product available.Product out of stock for selected location: if product not available for selected location App displays: product out of stock for selected location please try after few days, select from similar productsNo response from payment server: if server disconnects or no response during payment, use case ends. |
| Post condition | Successful completion: user bought the fertilizer successfully.Failure condition: user couldn’t buy the product due to financial/technical reason |
| Supplemental requirements | The price of all agriculture products should be as per government policy. The application shall keep a usage detail of all complete and incomplete transactions. |

|  |  |
| --- | --- |
| Use case specification | details |
| Use case id | 2 |
| Use case name | User registering in the application |
| Brief description | This use case describes how a user registers in an online agriculture store |
| actors | 1.Farmers2.Database/admin |
| Pre-conditions | Users should have mobile/laptop with active internet connectionUser must have active email address and mobile number |
| Basic flow | User register by entering personal details: name, address, mobile number and email idWhen Application is logged in, it sends otp to mobile number for verification, user enters otp and App confirms otp verification, user validation is performed, App confirms successful user creation, use case ends. |
| Alternate flow | Invalid otp: if incorrect otp is enteredApp displays: please enter correct otpMobile no. already used: if the entered mobile no. is already registered.The app displays: mobile no. is already in use, please enter different mobile no.Email address already used: if the entered email id is already registeredApp displays: email id is already in use, please enter different email addressUser id not available: if the user id is already usedApp displays: user id already used, please enter another user idServer issue: if the server is downApp displays: server busy, please try again later. |
| Post condition | Successful completion: user id has been successfully createdDetails are updated in the log accordingly |
| Supplemental requirements | The application should maintain a details like time and date of all complete and incomplete transactions |

|  |  |
| --- | --- |
| Use case specification | details |
| Use case id | 3 |
| Use case name | User making payment for the order placed |
| Brief description | This use case describes how the user utilize the payment mode after product selection |
| actors | 1.farmer2.admin3.bank |
| Pre-conditions | They should have laptop/mobile with an active internet connection user should have active mobile no. to receive otp with active bank account |
| Basic flow | User register by entering personal details: name, address, mobile number and email idWhen Application is logged in, it sends otp to mobile number for verification, user enters otp and App confirms otp verification, user validation is performed, App confirms successful user creation, use case ends. |
| Alternate flow | Incorrect account details: if user enters incorrect account details, user receives an SMS from the bank about payment failureDisplay message: payment not completedIncorrect otp: user enters incorrect otpDisplay message: payment declined incorrect OTP enteredInsufficient funds: payment is declined due to insufficient fundsDisplay message: payment declined, user receives SMS from bank, payment declined due to insufficient fundsServer busy: if payment doesn’t complete due to server issuesDisplay message: payment not completed, server busy, please try again later |
| Post condition | Successful completion: payment is completed and order placed successfully |
| Supplemental requirements | The application should maintain a details like time and date of all complete and incomplete transactions |

|  |  |
| --- | --- |
| Use case specification | details |
| Use case id | 4 |
| Use case name | Seller/manufactured adding/updating products in application |
| Brief description | It describes how seller/manufacturer upload/add products in application |
| actors | 1.Seller/manufacturer2.database/admin |
| Pre-conditions | user should have laptop/mobile with an active internet connection |
| Basic flow | Seller wants to add/update products in applicationSeller selects sales options before loginUser validation is performedApplication displays different products, seller choose product categoriesSeller enters product details: product name, type, price, offers, delivery date.App confirms product details are added successfullySeller receives a receipt by mail/SMSUse case ends |
| Alternate flow | Incorrect product categories: if the seller select wrong product Display message: incorrect product category, please select correct one. |
| Post condition | Successful completion: product is updated successfully |
| Supplemental requirements | The application should maintain a details like time and date of all complete and incomplete transactions |

|  |  |
| --- | --- |
| Use case specifications | details |
| Use case id | 5 |
| Use case name | User tracking the delivery |
| Brief description | It describes how the user tracks delivery of the product |
| actors | 1.farmers2.database/admin |
| Pre-conditions | They should have laptop/mobile with an active internet connectionUser should get order confirmation of product |
| Basic flow | Use wants to track the product at product storeUser validation is performedApp displays multiple confirmed orders that are already placedUser selects tracking for ordered productApp confirms product detailsUser receives the product tracking details: status of product deliveryUse case ends |
| Alternate flow | User attempts to track productApplication displays: product delivery is in progress, tracking details available after it is shipped |
| Post condition | Product is arriving as per delivery date or expecting a delayTalk to customer care |
| Supplemental requirements | The application should maintain a details like time and date of all deliverables |

 **Q.12. ACTIVITY DIAGRAM:**

1.**Login page:**



2.sign-up page



**3**.**Buying fertilizer:**

 

**4.order cancellation:**



5. Adding & updating product:



Q.10. use case diagram



