Question no 1 – Audits

Audit are important and essential part for any project. Audit means inspection and examination of work done. Audit means checking whether the work done or in progress is according to plan in all respect like work schedule, work format and allotted budget. Audit are important to analyze whether the project is on correct path or not and it helps to make estimation and further planning. Audits are of two types i.e Internal and External.

According to me following points will be consider for audit :

1. Documentation work
2. Maintenance of record
3. Maintenance of communication record with teams, stakeholder(Phone call , Meeting logs, Emails)
4. Record of Signoff regarding work done ,changes in requirements etc.
5. Utilization of resources and funds in proper way.
6. System which are followed during the project work.
7. System which are used during the project work.

Quarterly Audits will commenced as below :

**Quarter 1 Audit report**

|  |  |
| --- | --- |
| **Stage** | **Requirement Gathering Phase** |
| **Checklist** | 1. Business Requirement Documents (BRD) 2. RACI Matrix 3. User Requirement Document(URD)- Stakeholder Requirement 4. Documents regarding Eliciation techniques used 5. Eliciation Result Report 6. Duplicate Requirement Report 7. Client Sign off 8. E-mail communication – To ,CC,BCC |

**Quarter 2 Audit report**

|  |  |
| --- | --- |
| **Stage** | **Requirement Analysis Phase** |
| **Checklist** | 1. Mapping of Business Requirements to Functional Requirements 2. Software Requirement Specification (SRS) – Functional Requirements 3. Supplementary Support Document (SSD) – Non Functional Requirements 4. Sign off on SRS 5. Use Case Diagram & Activity Diagram 6. Requirement Traceability Matrix (RTM) 7. E-mail Communication – To, CC, BCC |

**Quarter 3 Audit report**

|  |  |
| --- | --- |
| **Stage** | **Design Phase** |
| **Checklist** | 1. Utilization tools 2. Solution Documents 3. Sign off solution documents 4. GUI , Design pages , Prototypes 5. Minutes of meeting with stakeholders 6. Updation of requirements Tracebility matrix (RTM) 7. E-mail communication – TO ,CC,BCC |

**Quarter 4 Audit report**

|  |  |
| --- | --- |
| **Stage** | **Development Phase** |
| **Checklist** | 1. Conduct of JAD Session with Stakeholders and Developers 2. Minutes of JAD session 3. Sign off Documents 4. Updation of End user Manual 5. Updation of Requirement Tracebility Matrix (RTM) 6. E-mail communication – TO ,CC,BCC |

**Quarter 5 Audit report :**

|  |  |
| --- | --- |
| **Stage** | **Testing Phase** |
| **Checklist** | 1. Test case documents 2. Minutes of meetings with Developers and Testers 3. Updation of End User Manuals 4. Preparation of UAT Documents 5. Sign off on documents 6. Updation of Requirements Tracebility Matrix (RTM) 7. E -mail communication -TO,CC,BCC |

Question 2 – BA Approach Strategy

Answer :-

As a BA following approach strategy to be adopted

1. **Elicitation Technique :**

In this project we are going to use Brainstorming as an elicitation technique for requirement gathering because this is a new kind of experiment in remote areas where there is no existing system available. The number of stakeholders are also limited there is less scope of frequent changes in requirements. Face to Face communication will be beneficial for both stakeholder and for us as BA.

1. **Stakeholder Analysis:**

We have to identify who are the stakeholders and their role in project in the sense,

we have to use RACI matrix i.e who are Responsible ,Accountable ,Supporting, Consulted and Informed. RASCI Matrix helps us to identify who are the decision makers and who are influencers.

1. **Document to Write**:

We have to prepare various documents like Business Requirements Documents(BRD)

which gives overall idea about the project. Software Requirement Specification (SRS) which include all the Functional Requirements, Supplementary Support Document (SSD) which include Non Functional Requirements.

1. **Sign off on Documents**:

Sign off to be taken on SRS as this is the primary and important document. Sign off can be taken by using E- mail confirmation from client. E-mail confirmation and face to face communication can be used to take approvals from client.

1. **Change Request** :

Change request should also be considered but this is Sequencial – V Model Project so the request should be considered only at the end of a phase. It should be properly communicated to client and stakeholders that change request can extend period of project and budget of project.

1. **Update progress of project to Stakeholders**:

The progress of the project can be updated to stakeholders timely by communicating through E-mail or meeting session. During interactions in JAD session with Development team and Testing team the client gets and idea about how the project is going on and what progress is taking place.

1. **Take sign off on UAT**:

After the approval from Test Manager, the client be invited for User Acceptance Testing. The client will check that all the functionality which he was expecting has been included and performing successfully or not. After satisfaction the client will accept the project by Sign off .

Question 3 - 3 Tier Architecture

**Answer** :-

It shows how a software/ application works. Tier means layers. Each tier runs on its own infrastructure. These can be developed simultaneously and they interact with each other. It segregates activity into 3 layers i.e

1. Application Layer -Front End Layer
2. Business Logic Layer – Back End Layer
3. Data Layer -Data Base
4. Application Layer :-

-User acess application here.

-It’s a client level.

-It is basically a Graphical User interface like Screen and pages, Basic functionalities, validations on pages, visualizations , functionalities etc.

2) Business Logic Layer:-

- Bunch of business logic running here, like application server or web server.

- here you can add more functionality.

- It include all reusable components, frequently changing components, governing

body rules and regulations and compliances.

Examples like Printer, Payment gateway, mail server, RBI rules for Bank etc.

3) Data Layer :-

- It is basically a Database Management system.

- All data stored here.to

- Database components are connected to database.

Question 4 – BA Approach strategy for framing questions

Answer :-

BA should keep following points in mind before framing and asking questions to the stakeholders i.e ( 5W 1H -SMART -RACI -3 Tier Architecture – Use Cases , Use case Specs, Activity Diagrams ,Models ,Page Design )

* 5W 1H – This tool is used for extracting consistent requirements from client and stakeholders. 5W 1H means Why , What ,Where ,Who ,When and How. We must ask questions to client so that we should get exact picture of business entity i.e answers which define the gist of project like Where – Location and Network,

Why – Motivation , What – Data and entities ,Who -People ,When -Time , How -Process or Functions.

* SMART – BA should gather the requirements and analyze it so that it can satisfy SMART criterion i.e Specific, measurable, attainable, realistic and traceable. With the help of this criterion the process and accuracy in achieving target gets enhanced.
* RACI – It is initial stage in any project which is essential to identify stakeholders in an organization . RACI matrix means responsible, accountable ,consulted and informed.With the help of RACI matrix BA should know who are the key stakeholders in an organization. RACI Matrix will help BA to identify who are the real decision makers and who are the influencer in an organization.
* 3 Tier Architecture - It shows how a software/application works. Tier means layers. Each tier runs on its own infrastructure. These can be developed simultaneously and they interact with each other. 3-Tier Architecture consist of application layer ,business logic layer and data layer.
* Use cases – Use case is a high level diagram which is used to identify the requirements. Use case diagram explains how an external users are interacting with the system. Use case diagram consists of 4 major elements i.e The Actors (who interacts with the system),The System,The Use Cases(service that systems knows how to perform) and the lines that represent the relationship between these elements.
* Use case specs – It is case description document which gives complete picture of an activity. It’s a complete document which consists of the Basic flow, Alternate flow and exception flows which helps to frame test cases.
* Activity diagrams – It is basically a flow chart representation of flows from one activity to another. In activity diagram functionality is described through systems perspective. Activity diagrams are drawn where systems involved only.
* Models -It is the representation of requirements via graphs, prototypes and diagrams. It gives an idea about how the actual project will look like and how it functions.
* Page Designs – It is a front end look of software/application hence more specifications required in page design.

Question 5 – Elicitation Techniques

Answer :-

1. Brainstorming

It is used to gather good number of ideas from individuals or group of persons most

effective with group of 8 -12 people. It is the most effective method as it come up

with innovative ideas and requirements. In Brainstorming there are more

possibilities that a solution to a problem may emerge through participants itself.

It should be performed in relaxed environment.

2. Document analysis

It is the easiest and important elicitation technique which could provide some input

for the new system requirements. It gets the information from the present system

and prepare the modified system as per requirement. The existing files,user manuals,

software details will be the relevant information for next system.

3. Reverse Engineering

This elicitation technique is used when the present system is unable to fulfill new

kind of requirements and based on existing system, modified and new version will be

prepared which will be capable of performing more efficiently. There are two types of

Reverse engineering.

Black box Reverse engineering – the system is studied without its internal structure .

White box Reverse engineering – the internal working is studied.

4. Focus group

In this technique a group of people tries to extract the ideas, views and observation

about specific product or service in an interactive group environment. It include 6-12

people for sharing their views about the specific product and services along with a

moderator.

There are two main composition of Focus group :

Homogeneous – People with same characteristic and same background.

Heterogeneous – People with different characteristics and different background.

5. Observation

In this technique the information is gathered by observing or shadowing the work

done / while doing the work. If the user is unable to explain clearly about the

requirement and needs towards the new system, this technique is useful. It is

beneficial if we do the same work to understand the system then it’s a very useful to

identify the actual requirements but it’s a slow process.

There are 2 types of Observation techniques :

Passive /invisible – In this method we can only observe the system and make note of

it. We cannot ask any question until the process gets completed.

Active/visible – In this method we cannot wait till completion of the process.

Whenever we have doubt, we can ask and clarify it immediately.

6. Workshop

It is the structured way for gathering the requirements which need preparation in

advance. It include 6-10 or more stakeholders/users working together to identify

their need and requirements. The well conducted workshops are most effective to

collect ,scope, requirements, need of the stakeholders in very efficient manner.

There are three stages involved in this technique :

Preparation for the requirement workshop – Clarify stakeholders needs and purpose

of the workshop .

Conduct the workshop – manage the meeting and maintain the track.

Post requirements workshop – follow up for action, complete the documentation.

7. JAD(Joint Application Development)

This technique facilitate the stakeholders and system developers to collaborate

with each other and identify needs or requirements in concentrated and focused

way. This technique produce large amount of high quality information in very short

period. Discrepancies are resolved immediately.

JAD process steps –

**Define session** – define purpose, scope and objectives of the session

**Research product** -gathering preliminary information about product or services.

**Prepare** – Make arrangement to conduct a session.

**Conduct session** – Gather information to achieve the objectives.

**Draft the documents** – Documentation of discussion during the session.

8 . Interview

It is a systematic approach to gather information from a person or a group of

persons by talking and listening carefully to them. An interviewee has been asked

relevant questions and the responses are documented . Less efforts are required

in comparison with workshops and it provides an opportunity to get more clarity

on requirements. This technique is suitable for limited number of stakeholders

only.

9. Prototyping

In this technique the mock -ups are used to show the functionality of the system.

In this technique the client can visualizes the functionality of the system. In this

technique the problems/discrepancies are identified at early stages.

10. Questionnaire (Survey)

It is useful technique to gather information by creating questionnaire and

distributing among stakeholders who are geographically remote. It can be either

offline or online. The cost involved is very low and there are chances of not

getting good responses due to low priority of filling the questionnaire.

Question 6 – This project Elicitation Technique

Answer :-

According to me following elicitation technique can be used in this project for requirements

gathering :

Brainstorming :-

* The number of stakeholders are less so it can be easy to gather them.
* It require less preparation and efforts.
* As there will be not much variation in requirements, maximum requirements can be identified along with its probable solutions.
* Within the short span of time more specific and appropriate requirements can be gathered .
* Requirements can be analyzed and prioritized easily.

Question 7 – Business Requirements

Answer :-

Following are the Business Requirements of the project :

BR001- Farmers should be able to create a new account with help of their E mail ID, other

basic information and set their password. For re-login only E- mail ID and password is

required .

BR002- Manufacturers also should be able to create new account with the help of their

E-mail ID, other basic information and set their password. For re-login only E mail id

and password is required.

BR003- Manufacturers should be able to upload and display their products in the

Application.

BR004 -Farmers should be able to search for available products in fertilizers, seeds and

pesticides.

BR005- Farmers should be able to able to view detailed catalogue of the product like

manufacturing year, features of product, usefulness, contents, pre and post

conditions for usage, expiry of the product etc.

BR006- If the farmers wants to buy the multiple products, they should be able to add the

products to cart or to buy later list.

BR007- Farmers should be make payment by 3 methods i.e cash on delivery, Debit/Credit

Card and UPI.

BR008- Farmers should get an E-mail confirmation after placing their order.

BR009 -Farmers should be able to track the status of their order.

BR010- In case of defective product delivery or unsatisfied about the quality of the product

farmers should be able to cancel the order and get refund the amount paid.

BR011- Farmers should be able to give feedback about their experience and suggestions to

improve mechanism for better experience.

BR012- Farmers should be able to clarify their doubts with customer care services.

Questions -8 Assumptions

Answer :-

Following are the assumptions for success of the application :

1. There should be proper internet and network at remote area.

2. Farmers must have an E-mail Id and knowledge to handle application.

3. Farmers must remember the Email- ID and password and there should not be

inserting wrong Id and Password.

4. The products which are shown in application must be available with manufacturers.

5. Bank server should support smooth payment.

6. Delivery should be done on promise date.

Question-9 – Project Requirements Priority

Answer –

|  |  |  |  |
| --- | --- | --- | --- |
| Req ID | Req Name | Requirement Description | Priority |
| BR001 | Farmers  Registration & Login | Farmers should be able to create a new account with the help of their E-mail id, other basic information and set their password. For re- login only E- mail Id and password is required. | 10 |
| BR002 | Manufacturers  Registration & Login | Manufacturers also should be able to create new account with help of their E-mail Id, other basis information and set their password. For re-login only E-mail Id and password is required. | 10 |
| BR003 | Upload details | Manufacturers should be able to upload and display their products in the application. | 9 |
| BR004 | Search of product | Farmers should be able to search for available products in fertilizers, seeds and pesticides. | 9 |
| BR005 | Check the product specification | Farmers should be able to view detailed catalogue of the product like manufacturing year, features of product, usefulness, contents, pre and post conditions for usage, expiry of the product etc. | 8 |
| BR006 | Check review | If farmers wants to buy the multiple products, they should be able to add the products to cart or buy later list. | 8 |
| BR007 | Make payment | Farmers should be able to make payment by three methods i.e Cash on delivery, Debit/Credit card and UPI | 9 |
| BR008 | Confirmation of order | Farmers should get an E-mail confirmation after placing their order. | 9 |
| BR009 | Tracking of order | Farmers should be able to track the status of their order. | 8 |
| BR010 | Return of product | In case of defective product delivery or unsatisfied about the quality of the product, farmers should be able to cancel the order and get refund the paid amount. | 8 |
| BR011 | Give Feedback | Farmers should be able to give feedback about their experience and suggestions to improve mechanism for better experience. | 8 |
| BR012 | Customer care support | Farmers should be able to clarify their doubts with customer care services. | 8 |

Question 10 – Use case Diagram

Answer :-



Question 11 – Use case Specs

Answer :-

1. Registration :-

* Brief Description :- This use case describes how the farmers will register themselves in application.
* Actors : Primary actor -Farmers, Secondary Actor – Active server.
* Preconditions : The internet connectivity should be there and farmers should enter basis information like Name, Address, Mobile no and Email -id.
* Basic flow of Events :
* The farmers visit the application and select the option ‘ New Registration ‘ from menu .
* Enter personal details like Name, address, Mobile no.
* Set Registration Id as Email id .
* Set Password .
* Submit.
* Alternative Flows :
* E-mail id insertion is incorrect (short/wrong).
* Unable to provide confirmation due to ‘ Network Unavailable ‘.
* Post Conditions : Farmers successfully registered in application with confirmation on Email & mobile no.

2. Login :-

* Brief Description :- This use case describes how the farmers will login the application.
* Actors : Primary Actor – Farmers ,Secondary Actor – Active server.
* Preconditions : The internet connectivity should be there and farmers should enter valid E-mail Id and password.
* Basic Flow of events :
* The farmers visit the application and select the option ‘login’ from Menu.
* Enter valid E-mail Id.
* Enter valid password.
* Submit.
* Alternative Flows :
* Email Id insertion is incorrect (short/wrong)
* Unable to provide confirmation due to ‘Network Unavailable’.
* Post Conditions : Farmers successfully login the application.

3. Search Product & Place an order :

* Brief Description :- This use case describes how the farmers will search for products and place order for it.
* Actors : Primary Actor – Farmers, Secondary Actor – Active server.
* Preconditions :
* The internet connectivity should be there and farmers should enter valid E-mail Id and password.
* The product should be uploaded by manufacturer and it should be available.
* Product name, contents, manufacturing date and date of expiry should also be there.
* Basic Flow of Events :
* After Successful login, the farmers will go for ‘Search Product ‘option from Menu and search for Fertilizers, seeds and pesticides as per requirements.
* Farmers select products they wanted option ‘Add to Cart’.
* Farmers can view the order and select option ‘Place an order and Confirm’.
* Alternative flows :
* Product is unavailable with manufacturers.
* Unable confirm order due to ‘Network Unavailable’.
* Post Conditions : Farmers can search from the product available and place an order successfully.

4. Make Payment :-

* Brief Description :- This use case describes how the farmers will make payment for an order placed.
* Actors : Primary Actor – Farmers ,Secondary Actor – Active Server & Bank Server.
* Preconditions :
* The internet connectivity should be there and farmers should enter E-mail Id and password.
* Payment option by mode ‘Cash on Delivery ,Debit/Credit Card, UPI’ should be available.
* If payment by Mode ‘Debit/Credit Card ‘or ‘UPI ‘payment gateway should be available and connected any time.
* Basic Flow of Events :
* After searching and confirming the order, the farmer will go for ‘Make Payment ‘ option.
* Farmers can select the mode ‘Cash on Delivery , Debit/Credit Card, UPI’.
* If payment by mode ‘Credit /Debit card or ‘UPI’ the payment gateway /ACH should be connected.
* After successful insertion of PIN or OTP the payment should be made.
* Order confirmation Id/Transaction Id should be generated.
* Confirmation E- mail should be send.
* Alternative Flows :
* Unable to connect with gateway/ACH.
* Wrong insertion of credentials of Debit/Credit Card.
* Wrong insertion of password.
* Unable to confirm payment due to ‘Network Unavailable’.
* Post Conditions : Farmers can successfully make payment for order .

5. Track the order & Delivery :-

* Brief Description :- This use case describes how the farmers will track the order and get delivery of product at door step.
* Actors : Primary Actor – Farmers, Secondary Actor – Delivery Agent .
* Preconditions :
* Order confirmation Id/Transaction Id should be used for tracking the order.
* Address mentioned should be clear and reachable.
* Basic Flow of Events :
* After successful login, farmers will go for ‘Track the order ‘option from Menu.
* Enter Order Confirmation Id /Transaction Id.
* Submit.
* Farmers can view the status of order i.e Delivered from Godown, In Transit, Reaching on Date.
* Make Payment if selected mode ‘Cash on Delivery ‘after getting the delivery.
* Confirmation of successful delivery of order by E-mail.
* Alternative Flows :
* Address not found by delivery agent.
* Other product delivered than selected one.
* Post conditions : Farmers can track the order and get delivery.

Question 12 – Activity Diagrams

Answer :-

1. New User Registration :-



2. Login



3. Search a Product and place an Order :-



4. Make Payment :-



5. Delivery of Product :-

