Capstone Project - Prep 1 Part 1

Submitted by: Bhavana Padol

Batch: 10th Aug 2024

Online Agriculture Products Store

Mr. Henry, after being successful as a businessman and has become one of the wealthiest persons in the city. Now, Mr. Henry wants to help others to fulfil their dreams. One day, Mr. Henry went to meet his childhood friends Peter, Kevin and Ben. They live in a remote village and do farming. Mr. Henry asked his friends if they are facing any difficulties in their day-to-day work. Peter told Mr. Henry that he is facing difficulties in procuring fertilizers which are very important for farm. Kevin said that he is also facing the same problem in-case of buying seeds for farming certain crops. Ben raised his concern on lack of pesticides which could help in greatly reducing pests in crops. After listening to all his friends' problems, Mr. Henry thought that this is a crucial problem faced not only by his friends but also by so many other farmers. So, Mr. Henry decided to make an online agriculture product store to facilitate remote area farmers to buy agriculture products. Through this Online Web / mobile Application, Farmers and Companies (Fertilizers, seeds and pesticides manufacturing Companies) can communicate directly with each other. The main purpose to build this online store is to facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet connectivity. Since new users are involved, Application should be user friendly. This new application should be able to accept the product (fertilizers, seeds, pesticides) details from the manufacturers and should be able to display them to the Farmers. Farmers will browse through these products and select the products what they need and request to buy them and deliver them to farmers location.

Mr. Henry has given this project through his Company SOONY. In SOONY Company, Mr Pandu is Financial Head and Mr Dooku is Project Coordinator. Mr. Henry, Mr Pandu, and Mr Dooku formed one Committee and gave this project to APT IT SOLUTIONS company for Budget 2 Crores INRand18 months Duration under CSR initiative. Peter, Kevin and Ben are helping the Committee and can be considered as Stakeholders share requirements for the Project.

Mr Karthik is the Delivery Head in APT IT SOLUTIONS company and he reached out to Mr Henry through his connects and bagged this project. APT IT SOLUTIONS company have Talent pool Available for this Project. Mr Vandanam is project Manager, Ms. Juhi is Senior Java Developer, Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo are Java Developers. Network Admin is Mr Mike and DB Admin is John. Mr Jason and Ms Alekya are the Tester. And you joined this team as a BA.

Question 1 – BPM - 5 Marks

Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customer)

Answer:

Goal: To create an online platform for farmers in remote areas to easily purchase agriculture products such as fertilizers, seeds, and pesticides.

Inputs: Product details from manufacturers, customer orders, and payment information.

Resources: The website or mobile application, IT infrastructure, and human resources including developers, testers, and customer service staff.

Outputs: A user-friendly platform for farmers to browse and purchase products, delivery of products to customers, and financial transactions.

Activities: Development and maintenance of the website or mobile application Product management, which includes updating product information and pricing Order management, which includes processing customer orders, payment and delivery. Customer service, which includes responding to customer inquiries and addressing any issues that arise.

Value created to the end customer: Farmers can purchase products from the comfort of their own homes. Farmers no longer have to travel to purchase products. Farmers can now purchase products direct from manufacturers.

Question 2 – SWOT - 5 Marks

Mr Karthik is doing SWOT analysis before he accepts this project. What Aspects he Should consider as Strengths, as Weaknesses, as Opportunity and as Threats.

1. Strengths:

- **Alignment with Mission**: The project is in line with the company's mission to enhance the quality of life in rural areas through IT solutions.
- **Skilled Team:** The company has a team of experienced developers and IT professionals ready to contribute to the project.
- **Stakeholder Support**: The project benefits from backing by influential stakeholders like Mr. Henry, who can provide valuable insights and resources.
- **Growing Market:** The increasing popularity of online marketplaces suggests strong potential for the project's success.

2. Weaknesses:

- **Tight Timeline**: The 18-month timeline may be challenging for delivering a complex system.
- **Lack of Experience**: The company lacks prior experience in developing online agriculture product stores.
- **Budget Constraints**: The allocated budget of 2 Crores INR might be insufficient to cover all project expenses.
- **Limited Industry Knowledge**: The company may not have in-depth knowledge of the agriculture sector, which could affect understanding of farmers' and manufacturers' needs.

3. Opportunities:

- **New Business Avenues:** The project could open up new opportunities in the agriculture and rural development sectors.
- **Improved Access for Farmers**: It could significantly improve access to essential products for farmers in remote areas.
- **Reputation Building:** Successfully executing this project could enhance the company's reputation and serve as a model for future endeavors.
- **Community Building:** The online platform could faster connections among farmers and facilitate the sharing of experiences.

4. Threats:

- **Competitive Market**: The project may face competition from existing online agriculture product stores.
- **Technical Challenges**: Unexpected technical issues or delays might arise, leading to increased costs.
- **Adoption Resistance:** Farmers might be hesitant to adopt new technology due to reluctance to change or perceived lack of utility.

- **Trust and Cost Concerns**: There could be resistance due to concerns about costs and a lack of trust in the new system.

Question 3 – Feasibility study - 5 Marks

Mr Karthik is trying to do feasibility study on doing this project in Technology (Java), Please help him with points (HW, SW, Trained Resources, Budget, Time frame) to consider in feasibility Study.

Answer:

I. **Hardware Requirements:** Evaluate if the existing hardware, such as servers, storage devices, and networking equipment, meets the project's needs. Ensure that the hardware can accommodate future growth in terms of user traffic and data volume. Plan for potential upgrades or expansions if necessary.

II. **Software Requirements:** Assess the compatibility of existing software systems and libraries with Java. Determine if any new software, frameworks, or libraries are needed to support the project. Investigate how Java will integrate with current systems and whether additional tools or middleware will be required.

III. **Trained Resources:**

- **Skill Assessment:** Identify the availability of Java-trained developers within the company. Evaluate their experience and proficiency to ensure they can handle the project's technical requirements.
- **Training Needs:** Determine if there's a need for additional training for current staff or if hiring new, skilled developers is necessary.

IV. **Budget Considerations:**

- **Cost Analysis:** Break down the costs associated with hardware, software, and personnel. Ensure that the project budget of 2 Crores INR is adequate to cover all anticipated expenses.
- **Budget Adjustments:** If the initial budget proves insufficient, consider strategies to adjust the project scope or reallocate resources to stay within budget.

V. **Time Frame:**

- **Project Duration:** Evaluate the feasibility of completing the project within the 18-month timeline. Consider the complexity of the project and the potential for unforeseen delays.
- **Contingency Planning:** Identify possible risks and obstacles that could impact the project schedule. Develop a plan to address these challenges and ensure timely completion.

Question 4 – Gap Analysis - 5 Marks

Mr Karthik must submit Gap Analysis to Mr Henry to convince to initiate this project. What points (compare AS-IS existing process with TO-BE future Process) to showcase in the GAP Analysis

Answer:

A gap analysis identifies the differences between the current (AS-IS) state of processes and the desired (TO-BE) state. In the context of the proposed online agriculture product store, Mr. Karthik can present the following points to Mr. Henry to emphasize the need for this project:

1. **Ease of Access:**
    - **AS-IS:** Farmers in remote areas struggle to find and procure essential agricultural products like fertilizers, seeds, and pesticides.
    - **TO-BE:** The online store will provide farmers with easy, convenient access to these products from anywhere with internet connectivity, significantly simplifying the procurement process.
2. **Improved Communication:**
    - **AS-IS:** Current processes lack direct communication channels between farmers and manufacturers, often involving intermediaries that complicate the exchange of information.
    - **TO-BE:** The online platform will facilitate direct communication, enabling farmers to ask questions, clarify product details, and receive support directly from manufacturers.
3. **Better Pricing:**
    - **AS-IS:** Farmers often face inflated prices due to multiple intermediaries in the supply chain.
    - **TO-BE:** By connecting farmers directly with manufacturers, the online store can help reduce costs and enable better pricing for essential products.
4. **Increased Product Availability:**
    - **AS-IS:** Many agricultural products are not readily available in local markets, limiting farmers' options.
    - **TO-BE:** The online store will enhance product availability, ensuring farmers can access a wider range of products that may not be available locally.
5. **Increased Efficiency:**
    - **AS-IS:** The current manual procurement process is time-consuming, labor-intensive, and prone to errors.

- **TO-BE:** Automation of the procurement process through the online platform will streamline operations, improving efficiency and reducing the likelihood of mistakes.

6. **Enhanced Transparency:**
    - **AS-IS:** The existing manual process lacks transparency, making it difficult for farmers to track transactions and product flow.
    - **TO-BE:** The online store will provide a transparent system with detailed records of all transactions, enhancing trust and accountability.

Question 5 – Risk Analysis - 10 Marks

List down different risk factors that may be involved (BA Risks And process/Project Risks)

Answer:

BA Risks:

1.Requirements Gathering: Inadequate collection and analysis of requirements can lead to misunderstandings or overlooked needs, negatively impacting the final product.

2.Stakeholder Management: Conflicting requirements or opinions among diverse stakeholders (e.g., farmers, companies, project team) can complicate consensus-building on project objectives.

3.Communication: Miscommunication among the business analyst, project team, and stakeholders may result in misunderstandings and incorrect assumptions about requirements.

4.Change Management: Shifts in requirements or stakeholder expectations during the project can lead to delays and increased costs.

Project Risks:

1.Budget Constraints: An insufficient project budget may hinder development and implementation, creating financial challenges.

2.Technical Challenges: Issues arising during the development and implementation phases can affect timelines and the overall quality of the online store.

3.User Acceptance: The project's success relies on the willingness of farmers and businesses to use the platform. Low user adoption can prevent the project from achieving its goals.

4.Integration Issues: Online stores require seamless integration with various systems (e.g., payment gateways, logistics, inventory management). Problems during these integrations can disrupt project schedules and compromise quality.

Question 6 – Stakeholder Analysis (RACI Matrix) - 8 Marks

Answer:

Responsible	Mr.Karthik - Delivery Head - APT IT Solutions
	Mr.Vandanam - Project Manager - APT IT Solution
	Ms.Juhi - Senior Java Developer - APT IT Solutions
	Mr.Teyson, Ms.Lucie, Mr.Tuker, Mr. Bravo - Java Developer - - APT IT Solutions
	Mr.Mike - Network Admin - - APT IT Solutions
	Mr.John - DB Admin - APT IT Solutions
	Mr.Jason and Ms.Alekya - Testers - - APT IT Solutions
Accountable	Mr.Henry - Client - Soony Company
	Mr.Pandu - Financial Head - Soony Company
	Mr.Dooku - Project Coordinator Soony Company
Consulted	Peter, Kevin and Ben – Stakeholders (Farmers from the remote village)
Informed	Farmers & Companies (Manufacturers of fertilizers, seeds & Pesticides

Question 7 – Business Case Document - 8 Marks

Help Mr Karthik to prepare a business case document

Answer:

Business Case Document for Online Agriculture Product Store

Why is this Project Initiated?

This project has been initiated as part of Mr. Henry's desire to give back to society and address the specific problems faced by his childhood friends and other farmers in remote areas. The objective is to help farmers improve their agricultural productivity and overall quality of life by providing an efficient platform to access crucial agricultural inputs.

The current issues being faced by farmers include:

- Difficulty in procuring fertilizers, seeds, and pesticides due to limited access in remote regions.
- The lack of direct communication with manufacturers and suppliers, leading to delays and suboptimal pricing.
- Limited awareness of available products, often resulting in lower crop yields and productivity.

1. Executive Summary

The proposed online agriculture product store aims to solve the challenges faced by farmers in procuring essential items like fertilizers, seeds, and pesticides. This platform will connect farmers directly with manufacturers, streamlining the procurement process and making it more efficient. The project has a total budget of 2 Crores INR and an expected completion timeline of 18 months. It is being initiated under the CSR activities of Mr. Henry's company, SOONY.

2. Problem Statement

Farmers, especially those in remote areas, encounter significant hurdles in accessing vital agricultural inputs like fertilizers, seeds, and pesticides. These limitations negatively impact crop productivity, which in turn reduces their income. The inability to secure these essential items on time is a critical issue that the online platform will address.

3. Proposed Solution

The solution is an online agriculture product store, accessible via the internet, which will facilitate the procurement of fertilizers, seeds, and pesticides by farmers from anywhere. The store will enable direct interaction between farmers and suppliers, making it easier for

farmers to source products efficiently. The system will be designed with a simple, user-friendly interface to ensure ease of use.

Problems that Could Be Solved with this Project:

Farmers will have access to fertilizers, seeds, and pesticides, no matter how remote their location.

Direct interaction with suppliers reduces delays in procuring essential items.

Timely access to quality agricultural inputs will lead to better crop yields and enhanced income for farmers.

4. Business Requirements

The following functionalities are critical for the platform:

1. Product Listing: A comprehensive display of products, including fertilizers, seeds, and pesticides, with detailed descriptions for farmers to browse.
2. Order Placement: A streamlined process for farmers to order the required products.
3. Product Delivery: A mechanism for ensuring the delivery of ordered products to the farmers' locations.
4. User-Friendly Interface: A simple and intuitive interface for easy navigation and use by farmers, many of whom may have limited experience with technology.

5. Benefits of the Solution

The proposed online store is expected to bring the following advantages:

- Improved Access to Products: Farmers will gain access to a broader range of agricultural products, enhancing their choices and ensuring timely procurement.
- Increased Efficiency: The platform will make the procurement process faster and more convenient, reducing delays.
- Enhanced Crop Yields and Income: Better access to essential products will likely result in improved crop yields, which can increase the farmers' overall income.

6. Costs and Funding

The project is estimated to cost 2 Crores INR. This funding will be provided by Mr. Henry’s SOONY company as part of its corporate social responsibility (CSR) initiative.

7. Project Schedule

The project is planned to be completed within 18 months. The major phases include:

1. Project Initiation and Planning
2. Requirements Gathering and Analysis
3. Development and Integration

4. Testing and Quality Assurance
5. Deployment and Maintenance

8. Risks and Mitigation

The following risks have been identified, along with strategies for mitigating them:

- Technical Risks: Issues arising from the technology stack used for the platform. To mitigate this, regular technical reviews will be conducted.
- Delivery Risks: Potential difficulties in delivering products to remote areas. Reliable logistics partners will be engaged to address this issue.
- Adoption Risks: Farmers may be hesitant to adopt the new platform. Training and support will be provided to ensure smooth adoption.

9. Time Frame to Recover ROI

The return on investment for this project is expected to be realized over a period of 3 to 5 years. Increased adoption by farmers and the growing need for agricultural products in remote areas will drive profitability for the platform.

Question 8 – Four SDLC Methodologies - 8 Marks

The Committee of Mr. Henry, Mr Pandu, and Mr Dooku and Mr Karthik are having a discussion on Project Development Approach.
Mr Karthik explained to Mr. Henry about SDLC. And four methodologies like Sequential Iterative
Evolutionary and Agile. Please share your thoughts and clarity on Methodologies

Answer:

- **Sequential (Waterfall)**:
  This methodology adopts a linear and systematic approach, where each phase of the Software Development Life Cycle (SDLC) must be completed before the next one begins. The typical phases include requirements gathering, design, implementation, testing, deployment, and maintenance. Waterfall is best suited for projects with clearly defined requirements and minimal risk, such as governmental or regulatory software. Its predictability allows for thorough documentation, but its rigidity can be a downside; any changes in requirements during development can lead to significant delays and increased costs.

- **Iterative**:
  The iterative approach breaks the project into smaller parts or iterations, each focusing on a specific feature or component. After developing a version, feedback is gathered from stakeholders, and adjustments are made in subsequent iterations. This approach is beneficial for projects with complex and evolving requirements, as it allows for refinement based on real-world usage and insights. It encourages testing early and often, which helps identify issues sooner rather than later, leading to higher-quality outcomes.

- **Evolutionary**:
  Evolutionary development starts with a basic version of the software—often called a Minimum Viable Product (MVP)—that includes only the essential features needed to meet initial user needs. Over time, the software is incrementally enhanced based on user feedback and changing requirements. This methodology is particularly effective in environments with high uncertainty and rapid change, such as startups or projects in dynamic markets. It allows teams to prioritize features based on user input and market demands, ensuring that the final product is closely aligned with user expectations.

- **Agile**:
  Agile methodology integrates both iterative and incremental development practices, promoting a collaborative environment where teams work in short cycles known as

sprints (typically 1-4 weeks). Each sprint culminates in a potentially shippable product increment, enabling teams to release updates frequently. Agile emphasizes direct communication among team members and stakeholders, fostering a responsive approach to changing requirements. It incorporates regular feedback loops, such as sprint reviews and retrospectives, which facilitate continuous improvement and adjustment. Agile is particularly effective in projects with complex needs, high levels of uncertainty, and where user feedback is critical to success. Frameworks like Scrum and Kanban fall under this methodology, each with its own practices for managing workflows and enhancing productivity.

Question 9 – Waterfall RUP Spiral and Scrum Models – 8 Marks

They discussed models in SDLC like waterfall RUP Spiral and Scrum . You put forth your understanding on these models
When the APT IT SOLUTIONS company got the project to make this online agriculture product store, there is a difference of opinion between a couple of SMEs and the project team regarding which methodology would be more suitable for this project. SMEs are stressing on using the V model and the project team is leaning more onto the side of waterfall model. As a business analyst, which methodology do you think would be better for this project?
Answer:

Discussion on SDLC Models: Waterfall, RUP, Spiral, and Scrum

- Agile: This methodology is centered around iterative and incremental development, fostering close collaboration between the development team and stakeholders. It is particularly effective for projects with rapidly changing requirements, high risks, and complex environments.

- Waterfall: This model adopts a linear, sequential approach where each phase of development must be completed before the next one begins. It works best for projects with well-defined requirements and clear goals, making it suitable for less complex scenarios where changes are minimal.

- RUP (Rational Unified Process): RUP is a unified and iterative framework that incorporates best practices for software development. It is especially advantageous for complex projects where requirements may evolve over time, allowing for flexibility while maintaining structure.

- Spiral: This model combines both sequential and iterative methodologies, with each iteration building on the previous one. It is particularly suitable for high-risk projects characterized by uncertain requirements, as it allows for continuous refinement based on user feedback.

- Scrum: A specific agile framework, Scrum emphasizes teamwork, collaboration, and adaptability. It is well-suited for projects with rapidly changing requirements and complex problem-solving needs, promoting regular feedback and iterative progress.

Recommended Methodology for the Online Agriculture Product Store

As per the suggestion of SME V model will be more appropriate for the reason that it provides more flexibility and can adapt some changes to project if required. As chances are the project may need more changes during the project timeline.

Question 10 – Waterfall Vs V-Model - 5 Marks

Write down the differences between waterfall model and V model.

Answer:

Waterfall Model:

- **Structure**: The Waterfall Model is a linear and sequential development process, where each phase must be completed before the next one begins. Progress flows downwards through distinct stages such as requirements, design, implementation, verification, and maintenance.
- **Requirements**: It is best suited for projects with well-defined and fixed requirements. Changes in requirements are challenging to accommodate once the project is underway.
- **Testing**: In this model, testing occurs only after the development phase is complete. This can lead to the discovery of defects late in the process, which may increase costs and time for corrections.

V-Model:

- **Structure**: The V-Model, or Verification and Validation Model, is an extension of the Waterfall Model. It emphasizes the relationship between development stages and corresponding testing phases, forming a V shape.
- **Requirements**: It is well-suited for projects with stringent quality and regulatory requirements, allowing for better alignment between development and testing.
- **Testing**: Testing is integrated throughout the development process, with each development phase having a corresponding testing phase. This approach enables early detection and correction of defects, which helps reduce the cost and effort of fixing issues later in the project.

Question 11 – Justify your choice - 3 Marks

As a BA, state your reason for choosing one model for this project

Answer:

V model is selected. It is recommended by the SME and is more suited for the project. The V model allows changes in between the project which might be suitable for project where change requirement can arise due to regulator.

Question 12 – Gantt Chart - 5 Marks

The Committee of Mr. Henry, Mr Pandu, and Mr Dooku discussed with Mr Karthik and finalised on the V Model approach (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT) Mr Vandanam is mapped as a PM to this project. He studies this Project and Prepares a Gantt chartwith V Model (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT) as development process and the resources are PM, BA, Java Developers, testers, DB Admin, NW Admin.

Answer:

Project Timeline											
UAT											Client/BA
Testing 4										TEST	
Design 4									DEV		
testing 3								TEST			
Design 3							DEV				
Testing 2						TEST					
Design 2					DEV						
Testing 1				TEST							
Design1			DEV								
Requirement analysis		BA/PM									
Requirement gathering	BA										
	1 Month	1 Month	3Months	1 Month	3 Months	1 Months	3 Months	1 Month	3 Months	1 Month	Deploym

Question 13 – Fixed Bid Vs Billing - 5 Marks

Explain the difference between Fixed Bid and Billing projects

Answer:

Fixed Bid vs. Billing Models

1. Fixed Bid Model:

The Fixed Bid Model is a project delivery approach where the total cost is agreed upon at the start of the project. In this model, both the scope and deliverables are clearly defined and agreed upon by the client and the vendor. The vendor commits to delivering the project within the established budget and timeline. Any cost overruns or schedule delays are the vendor's responsibility, which means they bear the financial risk associated with unforeseen challenges.

2. Billing Model:

The Billing Model, on the other hand, involves charging the client based on the actual time and resources utilized throughout the project. In this approach, the scope is typically flexible and can evolve as the project progresses. Clients are billed for the actual hours worked and materials used, allowing for adjustments to be made in response to changes in project requirements. This model provides greater adaptability but can lead to less predictability in terms of overall costs.

Question 14 – Preparer Timesheets of a BA in various stages of SDLC - 20 marks

- Design Timesheet of a BA
- Development Timesheet of a BA
- Testing Timesheet of a BA
- UAT Timesheet of a BA
- Deployment n Implementation Timesheet of a BA

Answer:

Design Timesheet of a BA:

Date	**Activity**	**In Time**	**Out Time**	**Total Hours**
01/09/2024	Prepare use case diagram	11:00 AM	07:00 PM	8 Hours
02/09/2024	Prepare Test cases from use case diagram	11:00 AM	03:00 PM	4 Hours
03/09/2024	Discuss with Clients about design	11:00 AM	07:00 PM	8 Hours
04/09/2024	Initiate preparation of end user manuals	10:00 AM	04:00 PM	6 Hours
05/09/2024	Update RTM	11:00 AM	03:00 PM	4 Hours
06/09/2024	From use case diagram solution	11:00 AM	03:00 PM	4 Hours
09/09/2024	ER Diagram or Schema	11:00 AM	02:00 PM	3 Hours
10/09/2024	Updating design	10:00 AM	04:00 PM	6 Hours
11/09/2024	Finalizing design documents	11:00 AM	07:00 PM	8 Hours
12/09/2024	Reviewing and approving design	11:00 AM	06:00 PM	7 Hours
Total				**58 Hours**

Development Timesheet of a BA:

Date	Activity	In Time	Out Time	Total Hours
01/10/2024	Meeting with Developers	10:00 AM	04:00 PM	6 Hours
02/10/2024	Developers refer Diagrams and code their unit	11:00 AM	07:00 PM	8 Hours
03/10/2024	Update end user and RTM	10:00 AM	03:00 PM	4 Hours
04/10/2024	Reviewed test plans for upcoming release	10:00 AM	04:00 PM	6 Hours
Total				**24 Hours**

Testing Timesheet of a BA:

Date	Activity	In Time	Out Time	Total Hours
01/11/2024	Prepare test cases or assist the test manager to do test cases	10:00 AM	12:00 PM	2 Hours
02/11/2024	Perform high level testing	10:00 AM	03:00 PM	5 Hours
03/11/2024	Prepares client for UAT	10:00 AM	03:00 PM	5 Hours
04/11/2024	Requests For Test data	10:00 AM	12:00 PM	2 Hours
05/11/2024	Updates end user manual and RTM	10:00 AM	03:00 PM	5 Hours
06/11/2024	Signoff from client on Client Project Acceptance form	10:00 AM	01:00 PM	3 Hours
Total				**22 Hours**

UAT Timesheet of a BA:

Date	Activity	In Time	Out Time	Total Hours
01/12/2024	Prepare UAT test plans and test cases	10:00 AM	03:00 PM	5 Hours
02/12/2024	Review UAT test plan with stakeholders	10:00 AM	04:00 PM	6 Hours
03/12/2024	Execute UAT test cases	11:00 AM	07:00 PM	8 Hours
04/12/2024	Troubleshoot and report defects found in UAT	10:00 AM	03:00 PM	5 Hours
05/12/2024	Retest defects after fixes from development	10:00 AM	12:00 PM	2 Hours
06/12/2024	Obtain sign-off on UAT completion	11:00 AM	12:00 PM	1 Hour
Total				**27 Hours**

Deployment and Implementation Timesheet of a BA:

Date	Activity	In Time	Out Time	Total Hours
01/01/2025	Forwards RTM to client	11:00 AM	07:00 PM	8 Hours
02/01/2025	Coordinates to complete and share end user manuals	12:00 PM	07:00 PM	7 Hours
03/01/2025	Plans Training Session for end user	10:00 AM	07:00 PM	9 Hours
04/01/2025	Organizes Training Session for end user	11:00 AM	11:00 PM	12 Hours
05/01/2025	Prepares Lessons learned from this project	10:00 AM	09:00 PM	11 Hours
Total				**47 Hours**

Capstone Project - Prep 1 Part 2

Submitted by: Bhavana Padol

Batch: 10th Aug 2024

Question 1 – Audits - 5 Marks

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?

Answer:

Stage	Quarter 1 – Audit Report (Requirement gathering phase)
completed	10 weeks
Check List	BRD Template
	Elicitation result report
	Duplicate requirement report
	Grouping of functionalities / features – client signoff
	Email communication – TO, CC, BCC

Stage	Quarter 2 – Audit Report (Requirement analysis phase)
Completed	7 weeks
Check list	UML diagrams
	Business to functional requirement mapping
	Client signoff- documents
	RTM document version control
	Email communication- TO, CC, BCC

Stage	Quarter 3 – Audit Report (Design)
Completed	7 weeks
Check list	Utilization of tools
	Documented evidence on client communication
	Stakeholder MOM
	Email communication- TO, CC, BCC

Stage	Quarter 4 – Audit Report (Development)
Complete	20 weeks
Check list	JAD session report
	End user manual preparation document
	BA and developer MOM
	Email communication- TO, CC, BCC

Stage	Quarter 5 – Audit Report (Testing)
Complete	20 weeks
Check list	Test case summary
	Training report to end user
	Lessons learnt document
	Email communication – TO, CC, BCC

Question 2 – BA Approach Strategy - 6 Marks

Before the Project is going to Kick Start, The Committee asked Mr Karthik to submit BA Approach Strategy.

Write BA Approach strategy (As a business analyst, what are the steps that you would need to follow to complete a project – What Elicitation Techniques to apply, how to do Stakeholder Analysis RACI/ILS, What Documents to Write, What process to follow to Sign off on the Documents, How to take Approvals from the Client, What Communication Channels to establish n implement, How to Handle Change Requests, How to update the progress of the project to the Stakeholders, How to take signoff on the UAT- Client Project Acceptance Form)

Your Team

Project Manager - Mr Vandanam Senior Java Developer - Ms. Juhi
Java Developers - Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo Network Admin - Mr Mike
DB Admin - Mr John.
Testers - Mr Jason and Ms Alekya
BA - You

Technical Team have assembled to discuss on the Project approach and have finalised to follow3-tier architecture for this project.

Answer:

- **What Elicitation Techniques to Apply**
    - **Workshops**: Conduct workshops with key stakeholders (Peter, Kevin, Ben) and technical leads (Ms. Juhi, Mr. Vandanam) to discuss high-level functional and non-functional requirements.
    - **Interviews**: Conduct one-on-one interviews with Mr. Henry, Mr. Pandu, and Mr. Dooku to understand their vision, expectations, and key goals for the project.
    - **Surveys/Questionnaires**: Distribute surveys to target farmers and manufacturers to gather insights on user requirements, ease of use, and the functionalities they expect.

- **Document Analysis**: Review existing processes, documentation, and research papers related to e-commerce and agriculture to identify relevant features for the online platform.
- **Observation**: Understand the current pain points by observing how Peter, Kevin, and Ben procure fertilizers, seeds, and pesticides.

- **How to do Stakeholder Analysis RACI**
  - Stakeholders:
    1. Mr. Henry: Sponsor
    2. Mr. Pandu: Financial Head
    3. Mr. Dooku: Project Coordinator
    4. Peter, Kevin, Ben: Farmers/Stakeholders
    5. Mr. Karthik: Delivery Head at APT IT Solutions
    6. Mr. Vandanam: Project Manager at APT IT Solutions
    7. Technical Team (Java Developers, Network Admin, DB Admin, Testers)

  - Roles and Responsibilities:
    Each stakeholder has a specific role and set of responsibilities in the project. This breakdown ensures clarity in expectations and minimizes confusion during project execution.
    1. Responsible (R): Who is responsible for carrying out the task? These are the doers.
    2. Accountable (A): Who is ultimately accountable for the task? This is usually a senior person who delegates the work.
    3. Consulted (C): Who needs to be consulted before a decision is made or an action is taken? These are typically subject matter experts.
    4. Informed (I): Who needs to be informed about decisions or progress? They are kept in the loop but not involved in the task's execution.

  - RACI Matrix:

Task	Responsible	Accountable	Consulted	Informed
Requirements Gathering	You (BA)	Mr. Henry	Peter, Kevin, Ben, Mr. Karthik	All Stakeholders
Project Planning	Mr. Vandanam	Mr. Karthik	Technical Team	Mr. Henry, Mr. Pandu, Mr. Dooku
Design Phase	Ms. Juhi	Mr. Vandanam	Technical Team	You (BA)
Development	Technical Team	Mr. Vandanam	You (BA)	Stakeholders
Testing	Mr. Jason,	Mr.	Technical	Stakeholders

	Ms. Alekya	Vandanam	Team, You (BA)	
Change Request Management	You (BA)	Mr. Vandanam	All Stakeholders	Stakeholders
User Acceptance Testing (UAT)	You (BA)	Mr. Henry	Mr. Dooku, Technical Team	All Stakeholders

- **What documents to write**
    - **Business Requirements Document (BRD)**: Detailed documentation of all business requirements gathered from stakeholders.
    - **Functional Requirements Specification (FRS)**: Describes how the system will function to meet the business requirements.
    - **Non-Functional Requirements (NFR)**: Capture performance, scalability, and user experience expectations.
    - **Use Cases/User Stories**: Define specific scenarios of user interaction with the system.
    - **Wireframes and Mockups**: Visual representation of the user interface and flow.
    - **Stakeholder Communication Plan**: Define how and when to communicate project updates.
    - **Change Request Log**: Track all changes requested during the project life cycle.
    - **UAT Plan**: Detailed steps and criteria for User Acceptance Testing.

- **What process to follow to Sign off on the documents**
    - **Drafting**: Create drafts of BRD, FRS, NFR, and other relevant documents.
    - **Review**: Share the documents with key stakeholders (Mr. Henry, Mr. Pandu, Mr. Dooku, and APT IT Solutions team) for review.
    - **Feedback Incorporation**: Update documents based on stakeholder feedback.
    - **Approval**: Send final versions of documents to the Committee (Mr. Henry, Mr. Pandu, Mr. Dooku) for formal sign-off.
    - **Version Control**: Use version control to track changes and maintain signed copies.

- **How to take approvals from the client**
    - **Formal Meetings**: Schedule formal meetings to review key milestones and documents (BRD, FRS).
    - **Change Request Management**: Keep the client informed about changes via documented requests and approvals to avoid scope creep. Use tools like Jira or emails for tracking.
    - **Sign-off Process**: Ensure that the client signs off at key stages (requirements, development, UAT) through formal approval forms.

- **What communication channels to establish and implement**
    - **Emails and Official Communication**: Use email for formal communication with the committee and stakeholders.
    - **Daily Standups**: Conduct daily or weekly standup meetings with the technical team (developers, testers, etc.) to monitor progress.
    - **Project Management Tools**: Implement tools like Jira or Trello for task tracking and updates, ensuring all stakeholders can track progress.

- **How to handle change request**
    - **Change Request Form**: Create a standardized change request form that documents the requested changes, their impact on the timeline and budget, and the approval process.
    - **Impact Analysis**: Perform an impact analysis for every change request and review it with the committee before making adjustments.
    - **Change Control Board**: Establish a change control board (CCB) comprising key stakeholders who approve or reject change requests.

- **How to update the progress of the project to the stakeholder**
    - **Weekly Progress Reports**: Share weekly reports highlighting key milestones achieved, pending tasks, and potential risks.
    - **Monthly Steering Committee Meetings**: Present a detailed progress report to the committee (Mr. Henry, Mr. Pandu, Mr. Dooku) once a month.
    - **Burndown Charts**: Use burndown charts to visually display project completion against timelines.

- **How to take signoff on the UAT- Client Project Acceptance Form**
    - **UAT Preparation**: Define acceptance criteria clearly in the **UAT Plan** and ensure that these criteria are agreed upon by the client (Mr. Henry).
    - **UAT Execution**: During UAT, have key stakeholders (Peter, Kevin, Ben) test the system based on predefined test cases.
    - **Issue Resolution**: Document all issues found during UAT, and ensure they are resolved before final signoff.
    - **Final Acceptance**: Once UAT is complete and all issues are resolved, present the **Client Project Acceptance Form** to Mr. Henry and the committee for their signatures.
    - **Project Closure**: Once signoff is obtained, prepare a **Project Closure Report** and hand over all documentation to the client.

Question 3 – 3-Tier Architecture - 5 Marks

Explain and illustrate 3-tier architecture?

Answer:

1. **Application layer**
   - **Purpose**: This layer is responsible for the user interface and user experience. It handles all interactions with the user and presents data to them.
   - **Components**: Web browsers, mobile apps, or desktop applications.
   - **Responsibilities**:
     - Displaying information to the user.
     - Capturing user input.
     - Sending requests to the business logic layer.

2. **Business Logic Layer**
   - **Purpose:** This layer contains the business rules and logic. It processes user requests from the application layer and makes decisions based on the business rules.
   - **Components**: APIs, server-side applications, and middleware.
   - **Responsibilities:**
     - Validating user input.
     - Processing data and implementing business logic.
     - Communicating with the database layer to fetch or modify data.

3. **Database layer**
   - **Purpose**: This layer manages data storage and retrieval. It ensures data integrity and provides access to the database.
   - **Components**: Database management systems (e.g., MySQL, PostgreSQL, MongoDB).
   - **Responsibilities**:
     - Storing and managing data.
     - Performing CRUD (Create, Read, Update, Delete) operations.
     - Ensuring data security and integrity.

Question 4 – BA Approach Strategy for Framing Questions – 10 Marks

Business Analyst should keep What points in his/her mind before he frames a Question to ask to the Stakeholder (5W 1H – SMART – RACI – 3 Tier Architecture – Use Cases, Use case Specs, Activity Diagrams, Models, Page designs)

Answer:

1. 5W1H Framework

- **Who**: Identify key stakeholders.
  Question:
  - Who will be the primary users (farmers, manufacturers)?
  - Who is responsible for managing product listings?
- **What**: Define the specific needs and features.
  Questions:
  - What types of products need to be listed (fertilizers, seeds, pesticides)?
  - What functionalities are essential for the application?
- **Where**: Understand the usage context.
  Questions:
  - Where will users access the application (mobile, web)?
  - Are there specific geographical constraints we should consider?
- **When**: Clarify timelines.
  Questions:
  - When do farmers typically need these products?
  - What is the timeline for project milestones?
- **Why**: Explore the underlying reasons.
  Questions:
  - Why is this application important for the farmers?
  - What specific problems are we trying to solve?
- **How**: Investigate processes and methods.
  Questions:
  - How do farmers currently source their products?
  - How will the application facilitate communication between farmers and manufacturers?

2. SMART Criteria

- **Specific**: Ensure clarity and precision.
  Questions:
  - What specific features should the application have for product search?
- **Measurable**: Enable quantifiable outcomes.
  Questions:
  - How many products do you expect to be available at launch?
- **Achievable**: Assess feasibility.
  Questions:
  - Is it realistic for farmers to use mobile devices for this application?

- **Relevant**: Align with project goals.
    Questions:
    - How does this application fit into the farmers' daily routines?
- **Time-bound**: Set deadlines.
    Questions:
    - When do you expect to place your first order through the application?

3. RACI Model

- **Responsible**: Identify task performers.
    Questions:
    - Who will input product details into the application?
- **Accountable**: Determine decision-makers.
    Questions:
    - Who is ultimately accountable for the project's success?
- **Consulted**: Identify who should provide input.
    Questions:
    - Who among the farmers should we consult for feedback on usability?
- **Informed**: Clarify who needs updates.
    Questions:
    - Who should be kept informed about project progress and milestones?

4. 3-Tier Architecture

- **Application Layer**: Focus on user experience.
    Questions:
    - What key features are most important for the user interface?
- **Business Logic Layer**: Inquire about operational rules.
    Questions:
    - What rules should govern the listing and ordering of products?
- **Database Layer**: Gather data management needs.
    Questions:
    - What types of data do we need to store for products and users?

5. Use Cases and Use Case Specifications

- **Identify Use Cases**: Discuss different user scenarios.
    Questions:
    - Can you describe a typical buying process for a farmer using the app?
- **Detail Requirements**: Focus on specific functionalities.
    Questions:
    - What information must farmers provide when placing an order?

6. Activity Diagrams and Models

- **Process Understanding**: Ask about existing workflows.
    Questions:
    - How do farmers currently purchase their agricultural products?

- **Identify Pain Points**: Discuss challenges in current processes.
    Questions:
    - What specific difficulties do you encounter in sourcing fertilizers or seeds?

7. Page Designs

- **User Interface Needs**: Explore preferences for design.
    Questions:
    - What layout and design elements do you find most user-friendly?
- **User Experience**: Inquire about the user journey.
    Questions:
    - app What steps do you envision for a farmer placing an order through the?

Question 5 – Elicitation Techniques - 6 Marks

As a Business Analyst, What Elicitation Techniques you are aware of? (BDRFOWJIPQU)

- **Brainstorming (B)**: Gathering a group to generate a wide range of ideas and solutions quickly.
- **Document Analysis (D)**: Reviewing existing documentation to extract relevant information and understand current processes.
- **Requirements Workshops (R)**: Facilitated sessions where stakeholders come together to discuss and define requirements collaboratively.
- **Focus Groups (F)**: Engaging a small group of stakeholders to discuss their needs and perspectives on a particular topic or product.
- **Observation (O)**: Watching users in their environment to understand workflows and identify needs based on their actual behaviour.
- **Interviews (W)**: Conducting one-on-one or small group discussions to gather in-depth information from stakeholders.
- **Joint Application Development (J)**: Collaborative workshops that involve stakeholders and developers to refine requirements and solutions.
- **Prototyping (I)**: Creating preliminary versions of the application to visualize and validate requirements with users.
- **Questionnaires (P)**: Distributing surveys to gather information from a larger audience, which can help identify trends and requirements.
- **Use Cases (U)**: Defining scenarios that describe how users will interact with the system, which helps clarify requirements.

Question 6 – This project Elicitation Techniques - 5 Marks

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

- Prototyping
- Use case Specs
- Document Analysis
- Brainstorming

Fertilizers, seeds, pesticides details from the manufacturers and should be able to display them to the Farmers.

To gather the business requirements from the client, you went to SOONY and met Mr. Henry. When Mr. Henry was asked about the project and what are they expecting from the project, Mr. Henry stated that he is expecting to have a login for all its users (fertilizers, seeds, pesticides manufacturers and Farmers) , a product catalogue of fertilizers, seeds, pesticides, a search option to search for products, payment process, and delivery tracking. After doing the stakeholder analysis, you have found out that Peter, Kevin, Ben are the key stakeholders and you have scheduled an appointment to meet them. After meeting with them and trying to gather the stakeholder requirements, Kevin said that, a Farmer should be able to browse through the products catalogue once they visit the website and need to have a search option so that they can search for any product they need. Peter said that, if a farmer wants to buy any product or add them to buy-later list, they need to login first using their email id and password. If it is a new user, then they can create a new account by submitting their email ID and creating a secure password. Ben added saying that, Farmers needs to have an easy-to-use payment gateway which should include cash-on-delivery (COD), Credit/Debit card and UPI options so that the user's experience should be better. Kevin mentioned that, a user gets an email confirmation regarding their order status. A delivery tracker to track the whereabouts of their order.

Identify Business Requirements (which includes Stakeholder Requirements)

BR001 – Farmers should be able to search for available products in fertilizers, seeds, pesticides

BR002 – Manufacturers should be able to upload and display their products in the application

Answer:

Brainstorming can be used in this project because this type of project is completely new so understanding the requirement sitting together what possible needs of the farmers and to make it a user friendly we need the client too. We can have multiple ideas coming from other side would also add helping hand to the project.

Question 7 – 10 Business Requirements- 10 Marks

Make suitable Assumptions and identify at least 10 Business Requirements.

Answer:

Business Requirements:

1. **BR001**: Farmers should be able to search for available products (fertilizers, seeds, pesticides) using a search function with filters such as product category, price, and manufacturer.
2. **BR002**: The platform should allow manufacturers to upload and manage their product catalogue, including product details like name, price, description, and availability.
3. **BR003**: The system should support user authentication and registration, where both farmers and manufacturers can create an account with email verification and login using a secure password.
4. **BR004**: Farmers should be able to add products to a shopping cart and proceed with the checkout process, which includes updating the cart, applying discounts, and reviewing orders before payment.
5. **BR005**: The system should provide multiple payment options, including Credit/Debit card, UPI, and Cash on Delivery (COD).
6. **BR006**: The platform must have a delivery tracking system, allowing farmers to track their orders in real time from dispatch to delivery.
7. **BR007**: Farmers should receive email notifications for critical actions such as order confirmation, shipment status, payment confirmation, and delivery completion.
8. **BR008**: The system should allow manufacturers to update product availability in real-time, reflecting current stock levels and preventing farmers from purchasing out-of-stock items.
9. **BR009**: The platform should ensure secure data transmission and storage, using encryption for sensitive data like payment information and personal details, complying with relevant data protection laws.
10. **BR010**: The system should provide user-friendly navigation and a responsive design, ensuring that the platform is accessible on various devices such as desktops, tablets, and smartphones.

Question 8 –Assumptions- 5 Marks

List your assumptions

Answer:

Assumptions:

1. The platform is a web-based marketplace where farmers can buy fertilizers, seeds, and pesticides directly from manufacturers.
2. Users (farmers and manufacturers) need an easy-to-use interface with secure access and clear navigation.
3. The system must handle multiple forms of payments and track deliveries for orders.
4. Manufacturers require a simple way to upload and manage their product catalogue.
5. The platform needs to send notifications to users regarding their order status, payment confirmations, and delivery tracking.

Question 9 – This project Requirements Priority - 8 Marks

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

Req. ID	Req. Name	Req. Description	Priority
BR001	Farmer search for product	Farmers should be able to search for available products in fertilizers, seeds, pesticides.	8
BR002	Manufactures upload their products	Manufacture should be able to upload and display their products in the application	8

Once the requirements are finalized, as a business analyst, one of the major roles is to act as a liaison between the client and the project team. To gather the requirements correctly from the client side and then to deliver those requirements to the project team in a way they understand.

To make the project team understand the requirements, you need to convert those requirements into UML diagrams and screen mock-ups.

Answer:

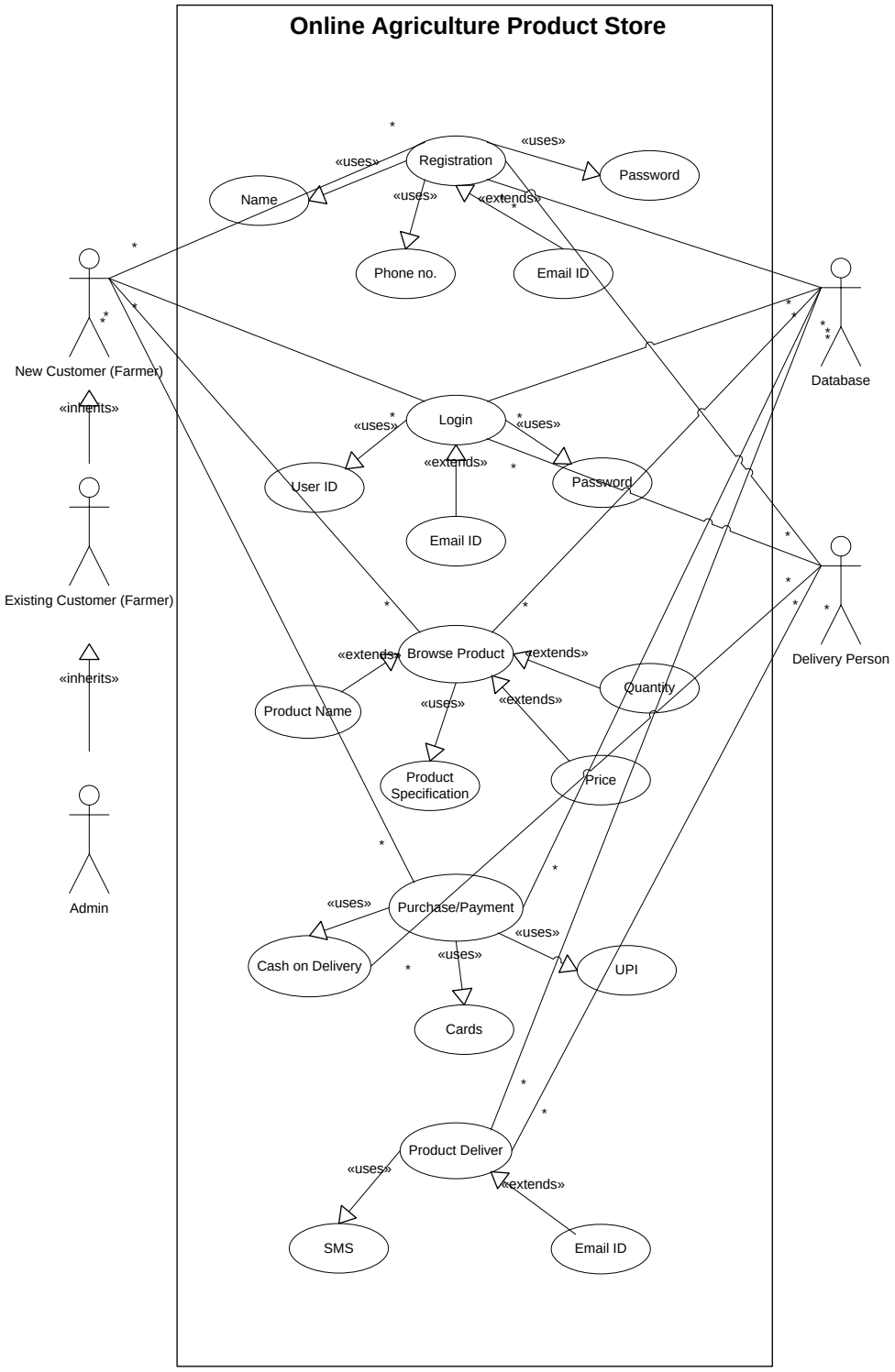
Req. ID	Req. Name	Req. Description	Priority
BR001	Farmer search for product	Farmers should be able to search for available products in fertilizers, seeds, pesticides.	8
BR002	Manufactures upload their products	Manufacture should be able to upload and display their products in the application	8
BR003	User authentication and registration	The platform should support account creation with email verification and secure login for both farmers and manufacturers.	9
BR004	Shopping cart and checkout	Farmers should be able to add products	9

		to the shopping cart, update it, and proceed with the checkout process.	
BR005	Multiple payment options	The system should provide payment options including Credit/Debit card, UPI, and Cash on Delivery (COD).	10
BR006	Delivery tracking system	Farmers should be able to track their order status from dispatch to delivery	7
BR007	Email notifications	Farmers should receive email notifications for actions like order confirmation, payment, shipment status, and delivery 6completion.	7
BR008	Real-time product availability	Manufacturers should be able to update product availability in real-time to prevent farmers from purchasing out-of-stock items.	6
BR009	Secure data transmission	The platform must ensure secure data handling and encryption for sensitive information like payments and personal data.	10
BR010	User-friendly and responsive design	The platform should have responsive design, ensuring accessibility on multiple devices (desktop, tablet, smartphones).	9

Question 10 – Use Case Diagram - 10 Marks

Draw use case diagram

Answer:



Question 11 – (minimum 5) Use Case Specs – 15 marks

Prepare use case specs for all use cases

Answer:

Use case ID	US001		
Use case Name	New User Registration		
Created by	Ms. Bhavana	Last Updated	
Date created	Sep 25th 2024	Last Revision Date	
Actor	Farmer, Manufacturer		
Description	This use case allows a new user to create an account by providing required details such as phone number, email ID		
Pre-condition	The user is not yet registered in the system.		
Post-condition	A new user account is created, and the user can log in.		
Basic flow	1. The user selects the "New User" option. 2. The system prompts the user to enter details like name, phone number, email ID, and password. 3. The system validates the details. 4. The system creates a new account for the user and sends a confirmation email or SMS.		
Alternative flow	If the email or phone number is already in use, the system informs the user and asks them to try logging in or using a different email/phone number.		
Exceptions	If the user-provided details are invalid or incomplete, the system prompts the user to correct the input.		
Frequency of use	Medium		
Assumptions	The user has a valid email ID or phone number to register.		

Use case ID	US002		
Use case Name	Login		
Created by	Ms. Bhavana	Last Updated	
Date created	Sep 25th 2024	Last Revision Date	
Actor	Farmer, Manufacturer		
Description	This use case allows a user to access the system by entering their credentials.		
Pre-condition	The user must be registered in the system with valid login credentials.		
Post-condition	The user is successfully logged into the system and can access their account.		
Basic flow	1. The user selects the "Login" option. 2. The system prompts the user to enter their phone number/email ID and password. 3. The user enters their credentials. 4. The system verifies the credentials. 5. Upon successful verification, the user is logged in and redirected to the dashboard.		
Alternative flow	If the credentials are incorrect, the system displays an error message and asks the user to re-enter their credentials.		
Exceptions	If the system is down or the server is unavailable, the user will be notified, and they will not be able to log in.		
Frequency of use	High		
Assumptions	The user has already created an account.		

Use case ID	US003		
Use case Name	Browse Products		
Created by	Ms. Bhavana	Last Updated	
Date created	Sep 25th 2024	Last Revision Date	
Actor	Farmer		
Description	The user can browse through the products listed on the platform to check for availability and details before making a purchase.		
Pre-condition	The user must be logged in. Products must be uploaded by manufacturers.		
Post-condition	The farmer views a list of products and selects those they are interested in.		
Basic flow	1. The farmer logs in. 2. The farmer navigates to the "Browse Products" section. 3. The system displays available products with details (price, description, availability). 4. The farmer can apply filters to refine the search. 5. The farmer selects a product for more information or to add to the cart.		
Alternative flow	If no products are available, the system displays a message indicating that the stock is empty		
Exceptions	If there is a system error, the farmer may not be able to browse products.		
Frequency of use	High		
Assumptions	Products are listed and available in the system.		

Use case ID	US004		
Use case Name	Perform Online Purchase		
Created by	Ms. Bhavana	Last Updated	
Date created	Sep 25th 2024	Last Revision Date	
Actor	Farmer		
Description	The user (Farmer) can perform an online purchase by browsing, selecting, and paying for products through the system.		
Pre-condition	The user must be logged in. Products must be available for browsing.		
Post-condition	The farmer successfully places an order, and the system sends confirmation details.		
Basic flow	1. The farmer logs into the system. 2. The farmer browses available products. 3. The farmer selects desired products and adds them to the cart. 4. The system checks product availability. 5. The farmer proceeds to payment. 6. The system confirms the order and provides an order confirmation		
Alternative flow	If the product is out of stock, the system informs the farmer and suggests alternatives.		
Exceptions	If there is a payment failure, the system informs the farmer and prompts them to retry.		
Frequency of use	High		
Assumptions	Products are in stock, and payment options are available.		

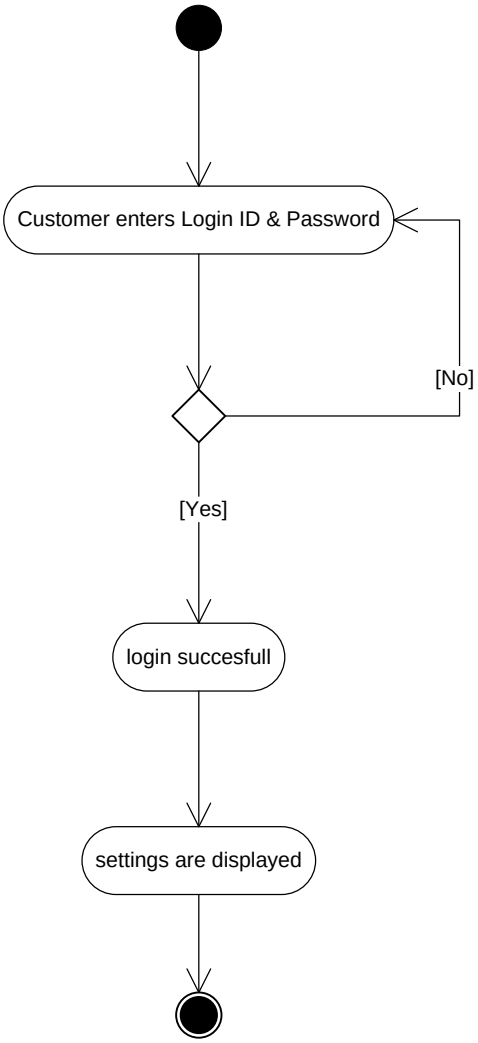
Use case ID	US005		
Use case Name	Upload Product Details		
Created by	Ms. Bhavana	Last Updated	
Date created	Sep 25th 2024	Last Revision Date	
Actor	Manufacturer		
Description	The manufacturer can upload product details (name, price, description, availability) to the system for farmers to view and purchase.		
Pre-condition	1. The manufacturer must be logged in. 2. The manufacturer has valid product details to upload.		
Post-condition	The product details are uploaded and visible to farmers on the platform.		
Basic flow	1. The manufacturer logs into the system. 2. The manufacturer navigates to the "Upload Product Details" section. 3. The system prompts the manufacturer to enter the product information (name, description, price, stock availability). 4. The system validates the entered details. 5. Upon successful validation, the product is listed in the system.		
Alternative flow	If the product details are incomplete or invalid, the system notifies the manufacturer to correct the errors.		
Exceptions	If the system encounters an error, the product details may not be uploaded successfully.		
Frequency of use	Medium		
Assumptions	The manufacturer has access to valid product information		

Question 12 – (minimum 5) Activity Diagrams - 15 Marks

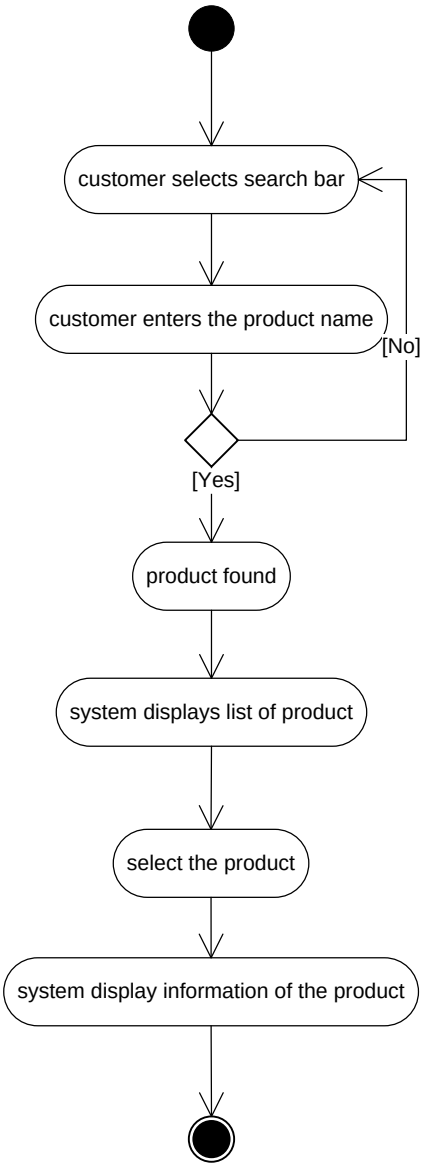
Activity diagrams

Answer:

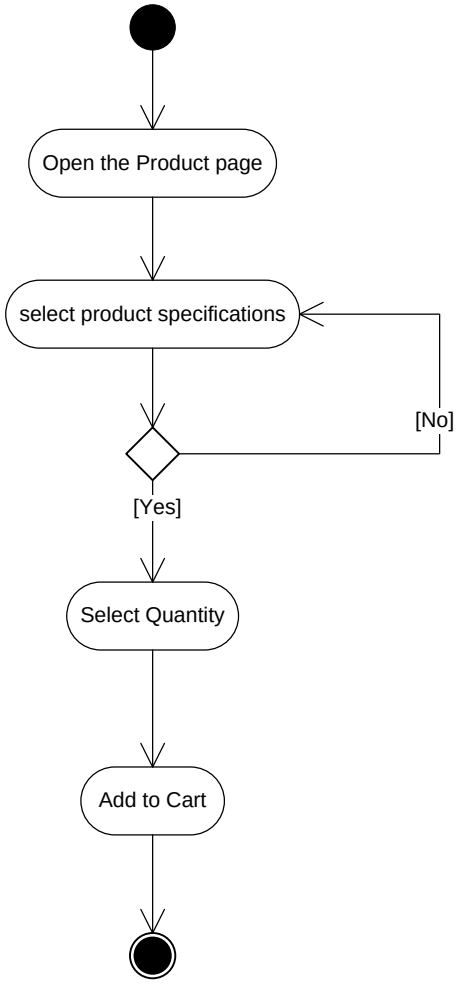
Activity diagram 1- Registered Customer Login



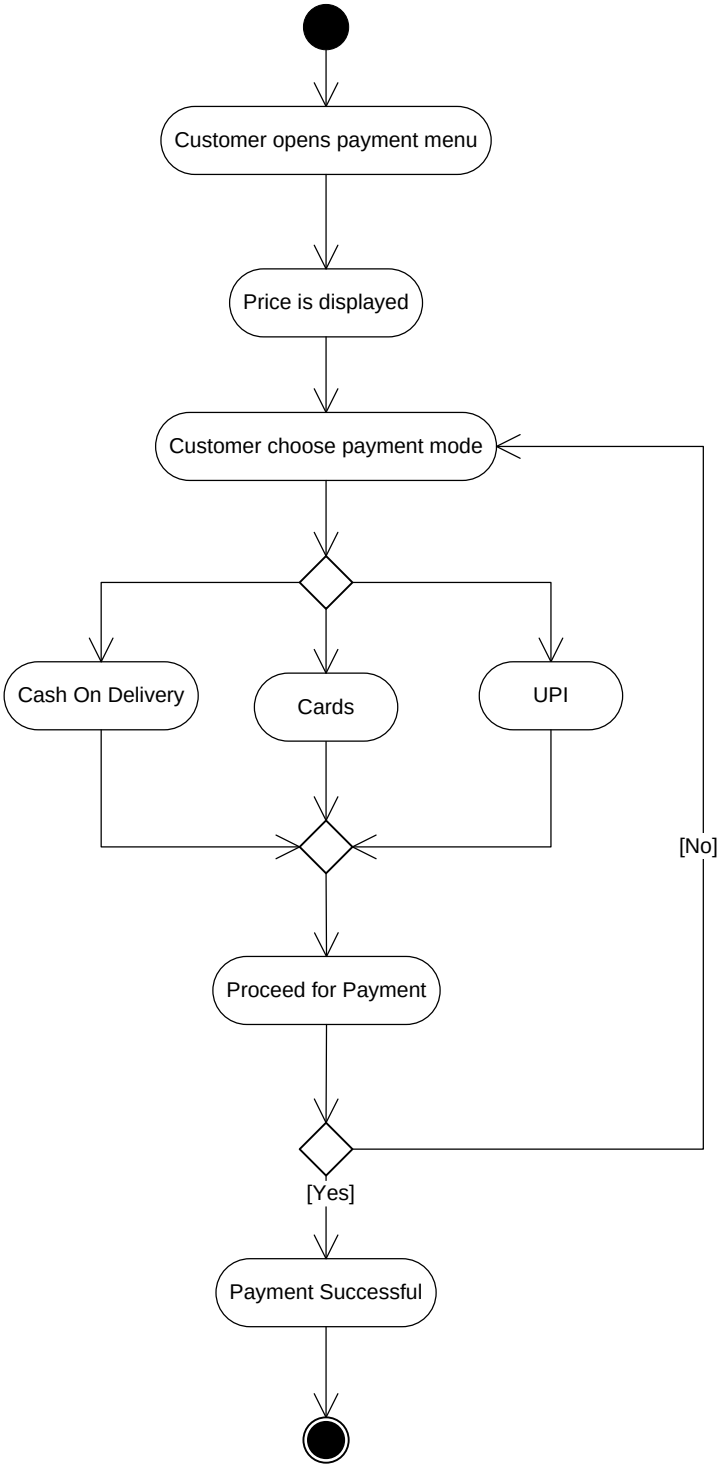
Activity diagram 2 – Search Product



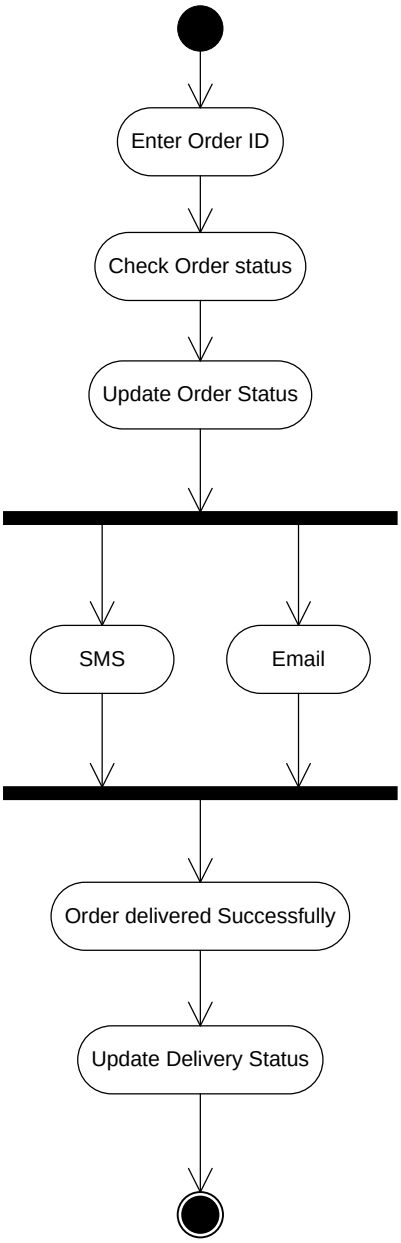
Activity diagram 3 – Add Product to Cart



Activity Diagram 4 – Making a Payment



Activity Diagram 5 – Delivery



Capstone Project - Prep 1 Part 3

Submitted by: Bhavana Padol

Batch: 10th Aug 2024

Question 1 – Functional Requirements - 15 Marks

Identify minimum 20 functional requirements

Answer:

Functional Requirements-

Req. ID	Req. Name	Req. Description
FR001	User Registration	The system shall allow farmers and manufacturers to register by providing required details (name, contact, location).
FR002	User Login	The system shall allow users (farmers and manufacturers) to log in using their credentials.
FR003	Browse Products	The system shall allow farmers to browse available products (fertilizers, seeds, pesticides) by category or search.
FR004	Search Products	The system shall allow farmers to search for specific products using keywords.
FR005	View Product Details	The system shall display detailed information (price, quantity, description, reviews) of each product.
FR006	Add Products to Cart	The system shall allow farmers to add selected products to the shopping cart.
FR007	Manage Cart	The system shall allow farmers to view and update the shopping cart (add, remove, modify quantity).
FR008	Place Order	The system shall allow farmers to place an order for products in the cart.
FR009	Payment Processing	The system shall provide payment options (credit, debit, net banking) for farmers to pay for their orders.
FR010	Order Confirmation	The system shall send an order confirmation notification to farmers after successful payment.
FR011	Product Upload	The system shall allow manufacturers to upload and update product information (fertilizers, seeds, pesticides).
FR012	View Orders	The system shall allow farmers to view their past and current orders along with order status.
FR013	Order Tracking	The system shall provide real-time tracking information for deliveries.
FR014	Review and Rating System	The system shall allow farmers to review and rate products after purchase.

FR015	Manage User Profile	The system shall allow users (farmers and manufacturers) to view and update their profile information.
FR016	Communication Channel	The system shall provide a communication feature for farmers to ask questions directly to manufacturers.
FR017	Inventory Management	The system shall allow manufacturers to manage product inventory, including stock updates.
FR018	Notifications	The system shall send notifications to users for order updates, new product listings, and payment status.
FR019	Product Categories	The system shall categorize products into sections such as fertilizers, seeds, and pesticides.
FR020	Manage Admin user	The system shall allow the admin (SOONY) to manage user roles, permissions, and access control.

Non-Functional Requirements-

Req. ID	Req. Name	Req. Description
NFR001	Usability	The system must be easy to navigate and understand by farmers with basic computer and mobile literacy.
NFR002	Response Time	The system should load pages and process user requests within 2 seconds for optimal user experience.
NFR003	Scalability	The system must be scalable to accommodate up to 500,000 concurrent users without degradation of performance.
NFR004	Availability	The system should have 99.9% uptime to ensure it is available for use by farmers and manufacturers at all times.
NFR005	Security	The system must use SSL encryption for all transactions and sensitive data handling (e.g., user details, payments).
NFR006	Accessibility	The system should meet WCAG 2.1 AA standards to ensure it is accessible to users with disabilities.
NFR007	Data Backup	The system must perform daily automatic backups to ensure data can be restored in case of failure.
NFR008	Mobile Responsiveness	The system must be fully responsive and optimized for use on mobile devices of various screen sizes.
NFR009	Load Handling	The system should handle up to 10,000 product uploads per hour without failure or performance issues.
NFR010	Interoperability	The system should be able to integrate with popular payment gateways and logistics service providers.
NFR011	Data Retention	User transaction data should be retained for a minimum of 5 years for regulatory and reporting purposes.
NFR012	Localization	The system must support multiple languages (e.g., English, Hindi) to cater to farmers in different regions.
NFR013	Legal Compliance	The system must comply with all relevant data privacy laws (e.g., GDPR, Indian IT Act) for handling user data.
NFR014	Maintainability	The system should allow easy updates and maintenance by the IT team without downtime.
NFR015	Error Handling	The system must provide user-friendly error messages and

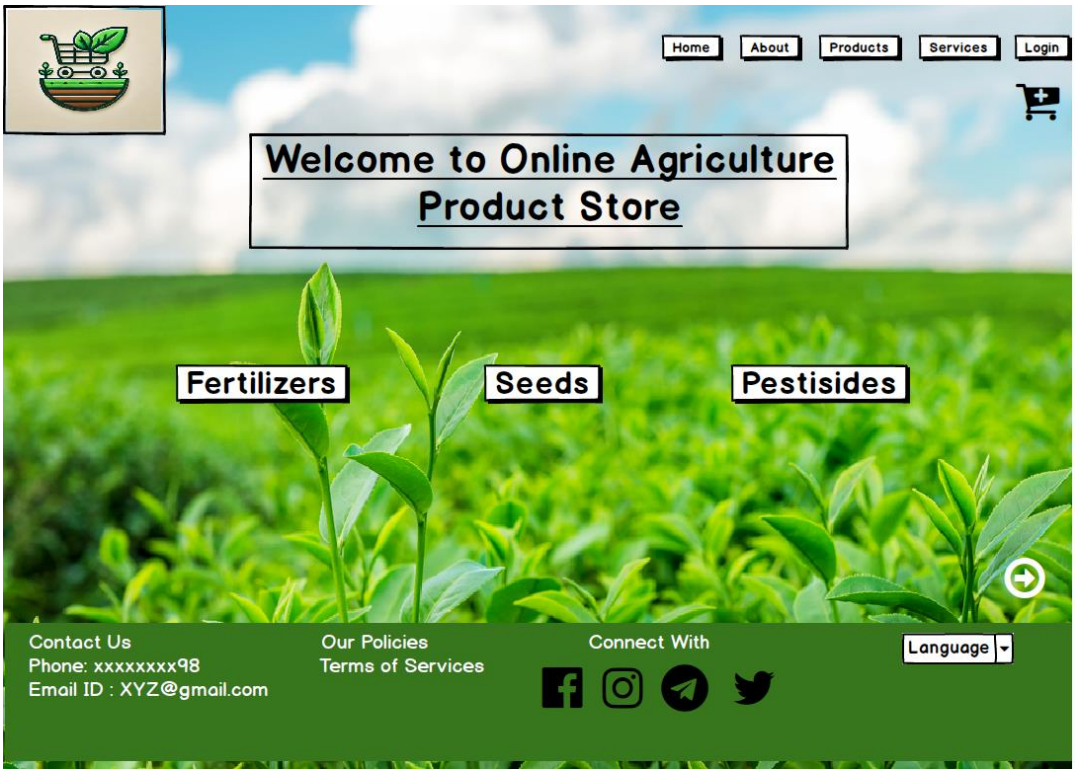
		error logging for critical failures.
NFR016	Transaction Processing	The system must process payments securely, ensuring that no transaction takes longer than 5 seconds.
NFR017	Audit Logging	The system should keep a complete audit log of user actions, including order placements and product uploads.
NFR018	Session Timeout	User sessions should automatically log out after 15 minutes of inactivity to ensure security.
NFR019	Disaster Recovery	The system must have a disaster recovery plan in place to restore operations within 4 hours after a major failure.
NFR020	Database Performance	The database should support up to 1 million records without performance degradation during queries.

Question 2–Minimum 5 page designs - 15 Marks

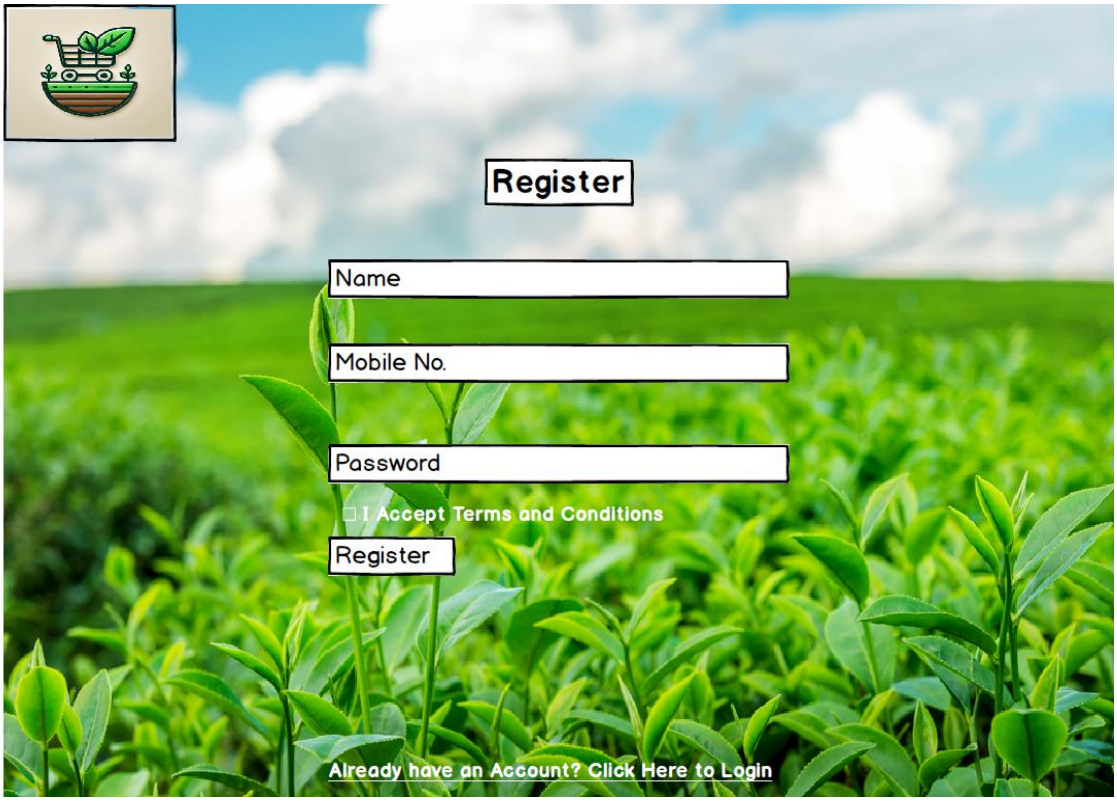
Make wireframe and prototypes

Answer:

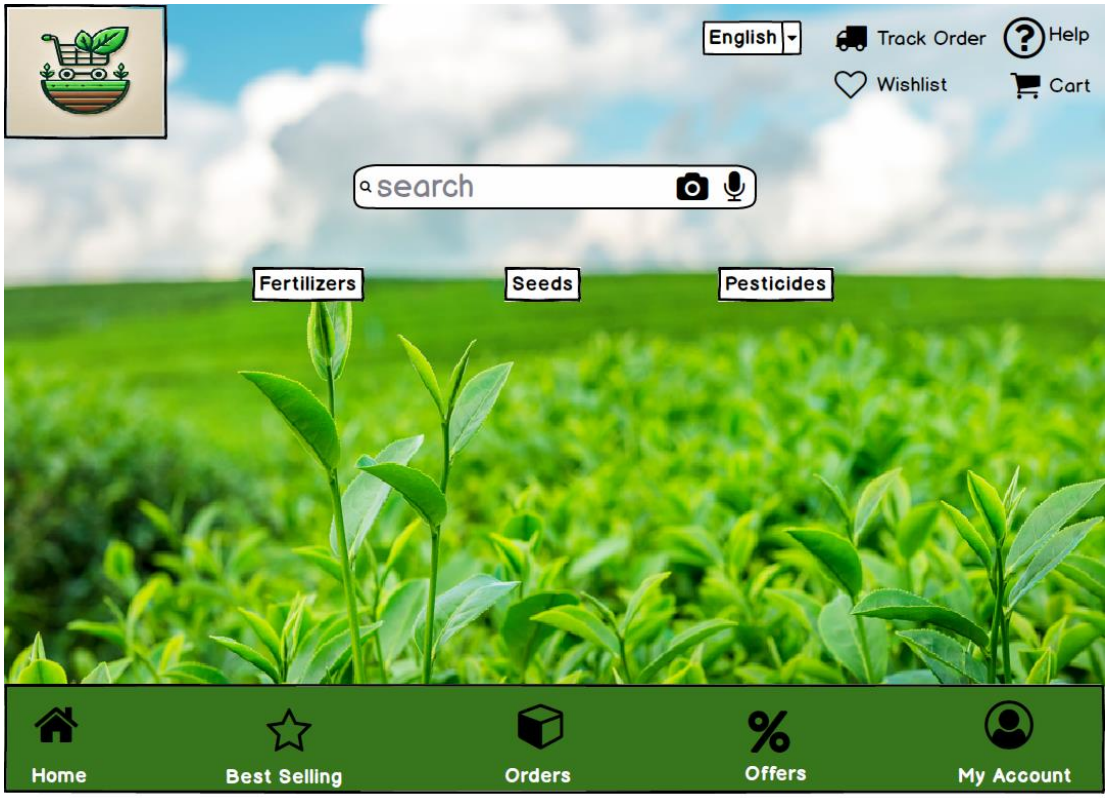
1. **Home Page**



2. New User Registration/Login



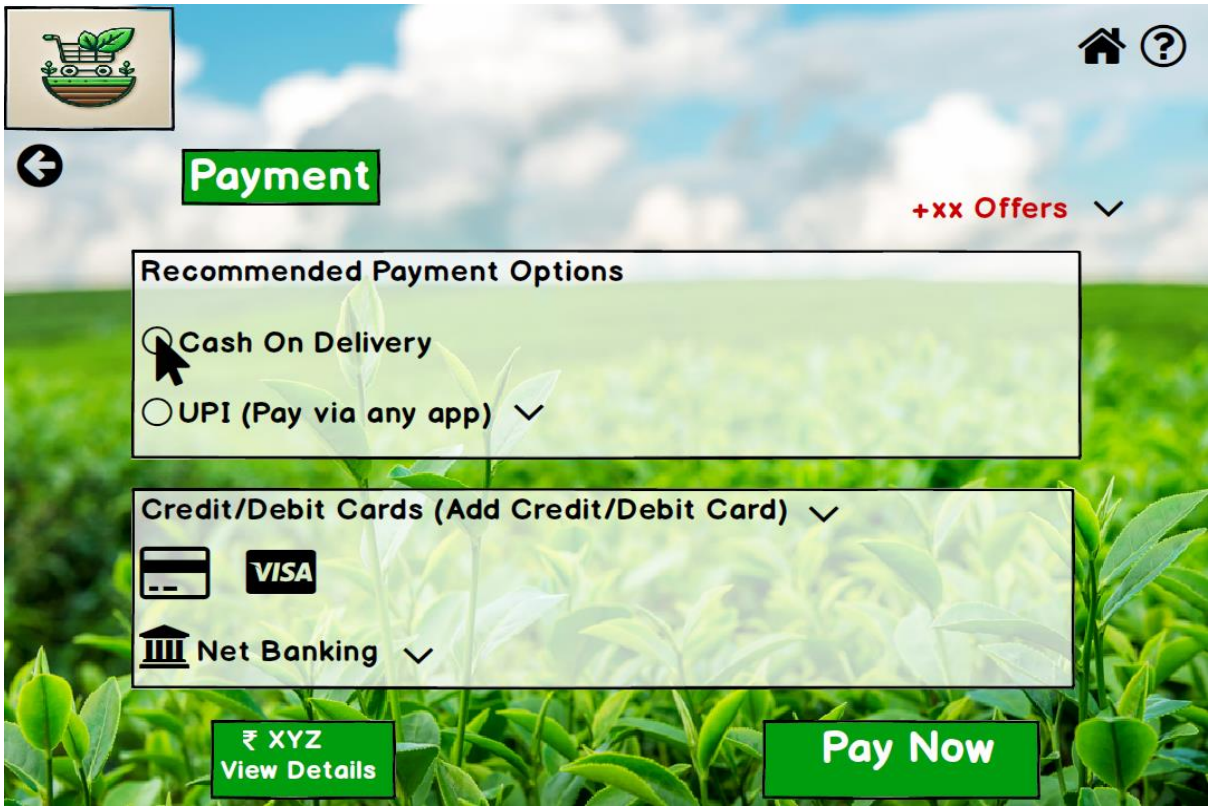
3. Browse Product



4. Add to Cart


Track Order
Help
Wishlist
Cart
Product Name
Product Name
(xx Reviews)
Price₹ xx
Size xyz ml
Variants
500ml
₹ xyz
1 ltr
₹ xyz
Add to Cart
Buy Now
Product Description

5. **Purchase/Payment**



Question 3 – Tools (Visio, Balsamiq)

Make a note of the Tools, which you are using for above concepts.

Answer:

1. I have used Balsamiq tool to create wireframes and prototypes. As a Business Analyst one of my key responsibilities is to clearly visualize the application flow and user experience to ensure that the project meets all the stakeholder's requirements. To achieve this, Balsamiq is a tool for designing and wireframes that outline the flow and functionality of the store.
2. It provides a simple drag-and-drop interface that lets me quickly create wireframes for each of the important pages of the online store.
3. Balsamiq enables quick creation of wireframes, which is essential for collaborating with stakeholders like Mr. Henry, Peter, Kevin, and Ben.
4. The wireframes provide a visual representation of how the online store will function, ensuring everyone is aligned on the project goals.
5. Developers, testers, and designers can easily understand the structure and flow of the application, ensuring smooth coordination across the team.
6. By using Balsamiq, I can effectively create the design and layout of the Online Agriculture Product Store.

Question 4 – RTM - 6 Mark

A business analyst's key responsibilities are to keep track of the requirements and make sure that no requirement is missed Mr. Henry and peter have approached you regarding the current status of the project. How will you tackle this situation?

Answer:

RTM for Functional Requirement:

Req. ID	Req. Name	Req. Description	Design	Code	UT (Unit Testing)	CT (Component Testing)	ST (System Testing)	SIT	UAT (User Acceptance Testing)
FR001	User Registration	Farmers/manufacturers register with details.	Complete	Complete	Complete	Complete	Complete	Complete	Incomplete
FR002	User Login	Users log in with credentials.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR003	Browse Products	Farmers browse available product categories.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR004	Search Products	Farmers search products by keywords.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR005	View Product Details	Product details (price, reviews) displayed.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR006	Add Products to Cart	Farmers add products to cart.	Complete	Complete	Complete	Complete	Complete	Complete	Complete
FR007	Manage Cart	Farmers update shopping cart items.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR008	Place Order	Farmers place orders for products.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR009	Payment Processing	Payment options for order provided.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR010	Order Confirmation	Order confirmation sent to farmers.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR011	Product Upload	Manufacturers upload product information.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR012	View Orders	Farmers view order history/status.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR013	Order Tracking	Real-time delivery tracking provided.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR014	Review and Rating System	Farmers review/rate purchased products.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR015	Manage User Profile	Users update personal profile details.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR016	Communication Channel	Communication between farmers/manufacturers enabled.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR017	Inventory Management	Manufacturers manage product inventory.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR018	Notifications	Notifications sent for updates/products.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR019	Product Categories	Products categorized by type.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR020	Manage Admin user	Admin manages user roles/permissions.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete

RTM for Non-Functional Requirement:

Req. ID	Req. Name	Req. Description	Design	Code	UT (Unit Testing)	CT (Component Testing)	ST (System Testing)	SIT	UAT (User Acceptance Testing)
NFR001	Usability	Easy navigation for farmers	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR002	Response Time	Pages load in 2 seconds	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR003	Scalability	Support 500,000 concurrent users	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR004	Availability	99.9% uptime required	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR005	Security	SSL encryption for transactions	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR006	Accessibility	Meet WCAG 2.1 AA standards	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR007	Data Backup	Daily automatic backups	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR008	Mobile Responsiveness	Optimized for mobile devices	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR009	Load Handling	Handle 10,000 product uploads per hour	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR010	Interoperability	Integrate with payment gateways	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR011	Data Retention	Retain user data for 5 years	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR012	Localization	Support multiple languages	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR013	Legal Compliance	Comply with data privacy law	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR014	Maintainability	Easy updates without downtime	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR015	Error Handling	User-friendly error messages	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR016	Transaction Processing	Payments processed in 5 seconds	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR017	Audit Logging	Keep audit log of user actions	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR018	Session Timeout	Auto log-out after 15 minutes inactivity	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR019	Disaster Recovery	Restore operations within 4 hours	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
NFR020	Database Performance	Support 1 million records	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete

Question 5 – 10 Test Case Documents - 10 Marks

Prepare 10 Test Case Documents

Answer:

Test case ID	TC001	**Test Case Name**	Customer Registration form		
Project ID	OAPS001	**Project name**	Online Agriculture Product Store.		
PM ID	PM001	**PM Name**	Mr. Vandanam		
Test strategy ID	TS001	**Tester ID**	T001, T002		
Test plan ID	TP001	**Tester Name**	Mr Jason and Ms Alekya		
Test schedule ID	TSC001	**Date of Test**	To be scheduled		
Scenario	Customer Registration form				
Link to that page	Customer Registration Page				
	Set 1	**Set 2**	**Set 3**	**Set 4**	**Set 5**
Input data	Name	Email ID	Password	Mobile No.	User ID
Expected behaviour	Customer is successfully registered				
Actual behaviour	To be tested				
Comments	NA				
Result (Pass/Fail)	Pass/Fail				

Test case ID	TC002	**Test Case Name**	Manufacturer Registration Form		
Project ID	OAPS002	**Project name**	Online Agriculture Product Store.		
PM ID	PM002	**PM Name**	Mr Vandanam		
Test strategy ID	TS002	**Tester ID**	T001, T002		
Test plan ID	TP002	**Tester Name**	Mr Jason and Ms Alekya		
Test schedule ID	TSC002	**Date of Test**	To be scheduled		
Scenario	Manufacturer Registration Form				
Link to that page	Manufacturer Registration page				
	Set 1	**Set 2**	**Set 3**	**Set 4**	**Set 5**
Input data	Company Name	Email ID	Password	Mobile No.	User ID
Expected behaviour	Manufacturer is successfully registered.				
Actual behaviour	To be tested				
Comments	NA				
Result (Pass/Fail)	Pass/Fail				

Test case ID	TC003	**Test Case Name**	Product Upload form	
Project ID	OAPS003	**Project name**	Online Agriculture Product Store.	
PM ID	PM003	**PM Name**	Mr Vandanam	
Test strategy ID	TS003	**Tester ID**	T001, T002	
Test plan ID	TP003	**Tester Name**	Mr Jason and Ms Alekya	
Test schedule ID	TSC003	**Date of Test**	To be scheduled	
Scenario	Product Upload Form			
Link to that page	Product Upload Page			
	Set 1	**Set 2**	**Set 3**	**Set 4**
Input data	Product Name	Price	Quantity	Description
Expected behaviour	Product details are successfully uploaded			
Actual behaviour	To be tested			
Comments	NA			
Result (Pass/Fail)	Pass/Fail			

Test case ID	TC004	**Test Case Name**	Product Search
Project ID	OAPS004	**Project name**	Online Agriculture Product Store.
PM ID	PM004	**PM Name**	Mr Vandanam
Test strategy ID	TS004	**Tester ID**	T001, T002
Test plan ID	TP004	**Tester Name**	Mr Jason and Ms Alekya
Test schedule ID	TSC004	**Date of Test**	To be scheduled
Scenario	Farmers searching for products		
Link to that page	Product Search Page		
	Set 1	**Set 2**	**Set 3**
Input data	Fertilizers	Seeds	Pesticides
Expected behaviour	Products matching search criteria are displayed		
Actual behaviour	To be tested		
Comments	NA		
Result (Pass/Fail)	Pass/Fail		

Test case ID	TC005	**Test Case Name**	Product Purchase
Project ID	OAPS005	**Project name**	Online Agriculture Product Store.
PM ID	PM005	**PM Name**	Mr Vandanam
Test strategy ID	TS005	**Tester ID**	T001, T002
Test plan ID	TP005	**Tester Name**	Mr Jason and Ms Alekya
Test schedule ID	TSC005	**Date of Test**	To be scheduled
Scenario	Product purchase by farmers		
Link to that page	Purchase Page		
	Set 1	**Set 2**	**Set 3**
Input data	Select product	Delivery address	Payment details
Expected behaviour	Farmers can successfully purchase products		
Actual behaviour	To be tested		
Comments	NA		
Result (Pass/Fail)	Pass/Fail		

Test case ID	TC006	**Test Case Name**	Order Confirmation Email
Project ID	OAPS006	**Project name**	Online Agriculture Product Store.
PM ID	PM006	**PM Name**	Mr Vandanam
Test strategy ID	TS006	**Tester ID**	T001, T002
Test plan ID	TP006	**Tester Name**	Mr Jason and Ms Alekya
Test schedule ID	TSC006	**Date of Test**	To be scheduled
Scenario	Order confirmation email is sent after purchase		
Link to that page	NA		
	Set 1	**Set 2**	
Input data	Email address	order details	
Expected behaviour	Email is sent successfully with correct details		
Actual behaviour	To be tested		
Comments	NA		
Result (Pass/Fail)	Pass/Fail		

Test case ID	TC007	**Test Case Name**	Product Delivery Status Update
Project ID	OAPS007	**Project name**	Online Agriculture Product Store.
PM ID	PM007	**PM Name**	Mr Vandanam
Test strategy ID	TS007	**Tester ID**	T001, T002
Test plan ID	TP007	**Tester Name**	Mr Jason and Ms Alekya
Test schedule ID	TSC007	**Date of Test**	To be scheduled
Scenario	Farmers view delivery status updates		
Link to that page	Delivery Status Page		
	Set 1	**Set 2**	
Input data	Order ID	Delivery status	
Expected behaviour	Delivery status is displayed correctly		
Actual behaviour	To be tested		
Comments	NA		
Result (Pass/Fail)	Pass/Fail		

Test case ID	TC008	**Test Case**	Payment Gateway Integration

		Name	
Project ID	OAPS008	**Project name**	Online Agriculture Product Store.
PM ID	PM008	**PM Name**	Mr Vandanam
Test strategy ID	TS008	**Tester ID**	T001, T002
Test plan ID	TP008	**Tester Name**	Mr Jason and Ms Alekya
Test schedule ID	TSC008	**Date of Test**	To be scheduled
Scenario	Payment gateway works properly for online transactions		
Link to that page	Payment Gateway Page		
	Set 1	**Set 2**	
Input data	Payment method	Transaction amount	
Expected behaviour	Payments are processed successfully		
Actual behaviour	To be tested		
Comments	NA		
Result (Pass/Fail)	Pass/Fail		

Test case ID	TC009	**Test Case Name**	User Profile Update
Project ID	OAPS009	**Project name**	Online Agriculture Product Store.
PM ID	PM009	**PM Name**	Mr Vandanam
Test strategy ID	TS009	**Tester ID**	T001, T002
Test plan ID	TP009	**Tester Name**	Mr Jason and Ms Alekya
Test schedule ID	TSC009	**Date of Test**	To be scheduled
Scenario	User profile details can be updated		
Link to that page	User Profile Page		
	Set 1	**Set 2**	**Set 3**
Input data	Name	address	Contact details
Expected behaviour	User profile is updated successfully		
Actual behaviour	To be tested		
Comments	NA		
Result (Pass/Fail)	Pass/Fail		

Test case ID	TC010	**Test Case Name**	Farmer Feedback
Project ID	OAPS010	**Project name**	Online Agriculture Product Store.
PM ID	PM010	**PM Name**	Mr Vandanam
Test strategy ID	TS010	**Tester ID**	T001, T002
Test plan ID	TP010	**Tester Name**	Mr Jason and Ms Alekya
Test schedule ID	TSC010	**Date of Test**	To be scheduled
Scenario	Farmers can leave feedback on products		
Link to that page	Feedback Page		
	Set 1	**Set 2**	
Input data	Feedback content	rating	
Expected behaviour	Feedback is submitted and displayed correctly		
Actual behaviour	To be tested		
Comments	NA		
Result (Pass/Fail)	Pass/Fail		

Question 6 – DB Design – 8 Marks

After the requirements are thoroughly explained to the entire project team by business analyst, the Database architects have decided to do the database design and also to represent the in-flow and out-flow of data.

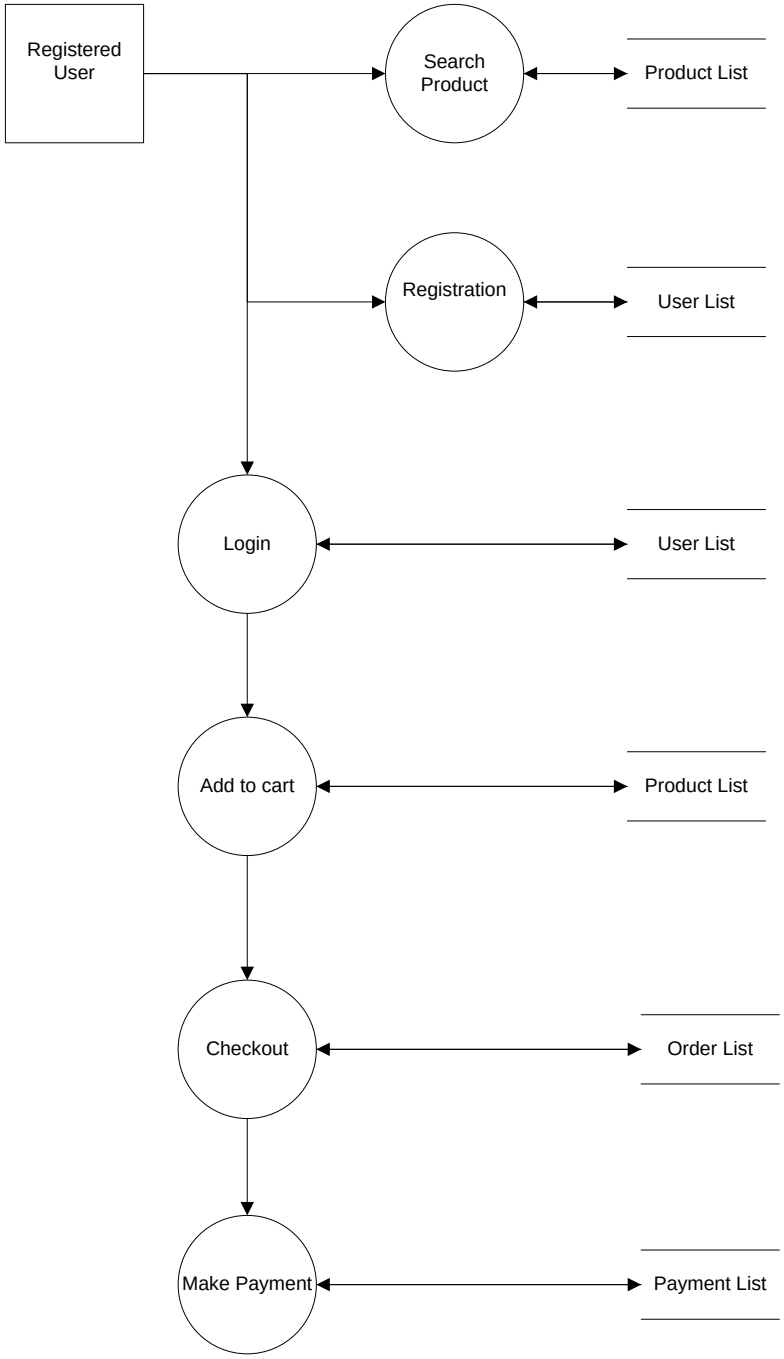
Draw database schema and ER diagram

Answer:

Question 7 – Data Flow Diagram - 3 Marks

What is a data flow diagram? Draw a data flow diagram to represent the in-flow and out-flow of data when a Farmer is placing an order for the product

Answer:



Question 8 – Change Request - 10 Marks

Due to change in the Government Taxation structure. we should change the Tax structure

How do you handle change requests in a project?

Answer:

1. **Understand the Scope of the Change Request and Document It**
    - **Scope Clarification**: Identify the specific changes in the government taxation structure and how it will impact the online agriculture product store.
    - **Documentation**: Use a formal change request document to capture details like the reason for the change, urgency, and impact areas (taxes on fertilizers, seeds, pesticides).
2. **Do the Impact Analysis**
    - **Project Scope Impact**: Understand how this tax change will affect the current functionality of the application (e.g., how prices are displayed to farmers).
    - **Schedule**: Determine whether the change will delay any project milestones or deliverables.
    - **Budget**: Assess any additional costs involved in making these changes.
    - **Resources**: Check if you need additional development or testing resources for this change.
    - **Risks**: Identify risks
3. **Prioritize the Change Request**
    - Evaluate the urgency and importance of the change based on regulatory deadlines.
    - Discuss with the committee (Mr. Henry, Mr. Pandu, and Mr. Dooku) and stakeholders (Peter, Kevin, Ben) to understand how critical this change is for project success.
4. **Seek Approval from the Project Sponsor (Committee)**
    - Submit the impact analysis to the change control board
    - Obtain their approval before moving forward with the change.
5. **Communicate the Change Request**
    - Share the change details with all relevant stakeholders, including the development and testing teams (Ms. Juhi, Mr. Jason, Ms. Alekya).
    - Ensure everyone understands how this will impact the system and the timeline.

Question 9 – Change Request Vs an Enhancement - 5 Marks

As the project is in process, Ben and Kevin have contacted you. The reason is to inform you that they want the Farmers to sell their crop yields through this application i.e. Farmers should be able to add their crop yields or products and display to general public and should be able to sell them. They also want to introduce Auction system for their Crop yields. As a BA, what will be your response?

Is this a change request or an enhancement?

Answer:

Response as a BA:

- Acknowledge the Request: Recognize that the addition of selling crop yields and an auction system is a valuable idea that can benefit the farmers and the platform.
- Impact Analysis: As a next step, perform an impact analysis on how these new features will affect the project in terms of:
    - Scope: How much additional work is needed to implement the selling and auction systems.
    - Timeline: Whether the current 18-month timeline can accommodate these features.
    - Budget: Assess if the 2 Crore INR budget can cover these new features or if additional funding is needed.
    - Resources: Determine if more development, testing, or design work is required to handle these new functionalities.
- Consult Stakeholders: Discuss the request with key stakeholders, including Mr. Henry, Mr. Pandu, Mr. Dooku, and the development team to:
    - Prioritize the new features.
    - Decide whether to include these features in the current phase or defer them to a later stage.

This is an enhancement.

- This request introduces new features and functionalities that were not part of the original project scope.
- It enhances the platform by expanding its use case from a buying platform to a marketplace for both buying and selling, as well as adding a completely new auction system.
- It does not modify the existing features but adds additional value and complexity to the system.

Question 10 – Estimations - 6 Marks

Come up with estimations – How many Manhours required

Answer:

Estimation of Manhours:

1. Number of Working Days in 18 Months:

   18 months * 20 working days per month = 360 working days

2. Total Hours for One Team Member in 18 Months:

   360 working days * 8 hours per day = 2,880 hours

Team Roles and Estimated Allocation:

The roles and team composition provided include the following people:

- Business Analyst (you) – 1 person
- Project Manager – 1 person
- Senior Java Developer – 1 person
- Java Developers (4 people: Mr. Teyson, Ms. Lucie, Mr. Tucker, Mr. Bravo) – 4 people
- Network Admin – 1 person
- DB Admin – 1 person
- Testers (2 people: Mr. Jason, Ms. Alekya) – 2 people

Estimating Manhours for Each Role:

- Business Analyst (BA): Likely to be involved full-time in the initial stages and intermittently afterward for change management, user acceptance testing, etc.

  Estimation: Full-time for 6 months, part-time (50%) for the rest.

  Manhours: (6 months * 160 hours) + (12 months * 80 hours) = 960 manhours

- Project Manager: Involved throughout the project lifecycle, but generally part-time.

  Estimation: 50% involvement for the full 18 months.

  Manhours: 18 months * 80 hours = 1,440 manhours

- Senior Java Developer: Lead on development activities, full-time for the project duration.

  Manhours: 18 months * 160 hours = 2,880 manhours

- Java Developers (4): Full-time throughout the development phase.

  Manhours per developer: 18 months * 160 hours = 2,880 hours

Total for 4 developers: 4 * 2,880 = 11,520 manhours

- Network Admin: Primarily involved during deployment and setup phases, likely part-time.

  Estimation: 25% of the project duration.

  Manhours: 18 months * 40 hours = 720 manhours

- DB Admin: Involved for database setup, management, and support, part-time.

  Estimation: 25% of the project duration.

  Manhours: 18 months * 40 hours = 720 manhours

- Testers (2): Full-time during the testing phase, likely part-time during early development.

  Estimation: Full-time for 6 months, 25% involvement for the rest.

  Manhours per tester: (6 months * 160 hours) + (12 months * 40 hours) = 1,680 manhours

  Total for 2 testers: 2 * 1,680 = 3,360 manhours

Total Manhour Estimation:

Role	**Number of people**	**Manhours per person**	**Total Manhours**
Business Analyst	1	960	960
Project Manager	1	1440	1440
Senior Java Developer	1	2880	2880
Java Developers	4	2880	11520
Network Admin	1	720	720
DB Admin	1	720	720
Testers	2	1680	3360
Total	11		21600 manhours

For the full duration of 18 months, the estimated total manhours required for the project would be 21,600 manhours based on the team's structure and involvement levels.

Question 11 – UAT – 6 Marks

Project has finally completed all the stages i.e., design, development, testing etc. Now, it is the role of a business analyst to contact the client for testing of the final product and have to successfully complete it. How are you going to handle this situation? And once it is done, what will be the process to close the project?

Explain UAT Acceptance process

Answer:

1. **Contact the Client for Testing:**
    - Initial Communication: Reach out to Mr. Henry and the other stakeholders (Peter, Kevin, and Ben) to schedule a meeting. Explain the purpose of the UAT and how their feedback will be invaluable in ensuring the final product meets their requirements.
    - Set Expectations: Clearly outline what UAT entails, including timelines, objectives, and the importance of their involvement. Provide a brief overview of the application's features.
2. **Planning:**
    - Define Objectives: Clearly specify what you aim to achieve during UAT. This includes verifying that the application functions as intended and meets the user's needs.
    - Create a UAT Plan: Develop a detailed UAT plan that includes:
        - Scope: Define which functionalities will be tested.
        - Timeline: Establish a timeline for UAT, including start and end dates.
        - Resources: Identify who will participate in the testing (stakeholders, end-users).
3. **Designing:**
    - Test Cases: Collaborate with stakeholders to design test cases based on user stories and requirements gathered during the project. Each test case should outline:
        - Test Scenario: Describe what will be tested.
        - Expected Outcome: Define the expected results for each test scenario.
    - User Documentation: Prepare user manuals or guides to assist stakeholders during testing.
4. **UAT Tester**:
    - Select Testers: Confirm who will be participating in the UAT. This typically includes stakeholders and end-users who can provide valuable feedback.

- Conduct Training: If necessary, provide training for testers on how to use the application and execute the test cases effectively.

5. **Bug Fixing:**

   - Gather Feedback: During the UAT phase, collect feedback and any issues encountered by testers. This could be done through:

     ○ Feedback Forms: Use structured forms to gather insights.
     ○ Regular Check-ins: Schedule daily or weekly check-ins to address any immediate concerns.

   - Prioritize Bugs: Categorize and prioritize bugs based on severity. Ensure the development team is prepared to fix these bugs in a timely manner.

   - Retesting: After bugs are fixed, conduct retesting to ensure that the issues have been resolved and that no new issues were introduced.

6. **Sign Off:**
   - Final Review Meeting: Organize a meeting with the stakeholders to review the UAT results, discuss any remaining concerns, and demonstrate how the feedback has been implemented.
   - Obtain Approval: Once all issues have been addressed and stakeholders are satisfied with the application, obtain formal sign-off. This can be in the form of an email confirmation or a signed document indicating that the product meets their requirements and is ready for deployment.

Question 12 – Project Closure Document - 6 Marks

Explain Project closure document

Answer:

- A project closure document, also known as a project closure report - is a formal document that summarizes the key outcomes, lessons learned, and final details of a completed project.
- It serves as a comprehensive record of the project's accomplishments, challenges, and overall performance, providing valuable insights for stakeholders and future projects

Points to be included in the Project closure document are:

- Project Overview- A summary of the project's objectives, scope, and overall timeline.
- Achievements- Key successes and milestones achieved during the project.
- Lessons Learned- Insights and knowledge gained from both positive and negative experiences throughout the project.
- Quality Assurance- A report on how the project met its quality standards and benchmarks.
- Resource Utilization- An analysis of how resources (time, personnel, budget) were used and managed.
- Risk Management- A review of how potential risks were identified, mitigated, and addressed.
- Challenges- Difficulties and obstacles encountered during the project, and how they were overcome.

Project Closure Document:

Sr. No.	Points to include	Details	Reference link
1.	**Did the client sign off on the UAT Testing?**		
	Date of the sign-off:		
	Name of the resource:	Mr. Henry	
2.	**Objectives of the project**		
	User-friendliness	Achieved	
	Customer satisfaction	ROI in 6 months	
	More categories	Achieved	
3.	**Functionalities worked on**		
	Secure payment processing	Achieved	
	Categories	Achieved	
4.	**Infrastructure**		
	Software installed	Achieved	
	Laptops purchased	Achieved	
5.	**Funding**		
	Amount approved	2 Crore	
	Amount used	2 Crore	
6.	**Overall project information**		
	Escalations	25	
	Customer satisfaction	High	
7.	**Value to the company**		
	Positive / Negative	Positive 95% Company has successfully made an application to help remote farmer to get the product on door step	