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 establish an online platform enabling farmers in remote areas to conveniently purchase agricultural products like fertilizers, seeds, and pesticides.

Inputs: Information regarding products from manufacturers, customer orders, and payment data.

Resources: The online portal which can be a website or mobile app, IT infrastructure, and human resources such as developers, testers, and customer support personnel.

Outputs: A user-friendly digital platform where farmers can browse, select, and purchase agricultural products; successful delivery of these products to the customers; and facilitation of payment transactions.

Activities: Building and maintaining the online platform (website/mobile app). Managing product details, including updates on pricing and availability. Handling customer orders, processing payments, and ensuring timely delivery. Providing customer support to address inquiries and resolve any issues that arise.

Value to the end customer:

Convenience: Farmers can purchase needed products from their homes.

Time-saving: Eliminates the need for farmers to travel for product purchases.

Q-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.

Answer:

As the Delivery Head, Mr. Karthik should consider the following factors when conducting a SWOT analysis for the online agriculture product store project:

Strengths:

- The project is well-aligned with the company's mission of providing IT solutions that benefit people in rural areas.
- APT IT SOLUTIONS has a skilled and experienced talent pool of developers and IT professionals who are available to work on the project.
- The project has backing from Mr. Henry, a prominent businessman, along with other key stakeholders who can provide valuable insights and resources.

- The increasing popularity of online marketplaces suggests a strong potential for the project's success.

Weaknesses:

- The 18-month timeline might be challenging for delivering a system with the complexity required.
- APT IT SOLUTIONS may lack prior experience in developing an online agriculture store.
- The 2 Crores INR budget may be insufficient to cover all project-related costs, especially unforeseen expenses.
- The company may not possess deep knowledge of the agricultural industry, making it harder to fully understand the unique needs of farmers and suppliers.

Opportunities:

- The project presents an opportunity for the company to tap into the agriculture and rural development sectors.
- It could significantly improve the lives of farmers in remote areas by simplifying access to essential products.
- A successful delivery of this project could enhance the company’s reputation and lead to new business opportunities.
- The platform could also serve as a networking tool for farmers to share experiences and collaborate.

Threats:

- The project may face competition from other established online agriculture stores, if any exist.
- Potential changes in government policies or regulations could impact the project’s progress.
- Technical challenges or development delays may arise, potentially increasing the project’s overall cost.
- Farmers may resist adopting new technology, especially if they are unfamiliar with online shopping or do not see its immediate value.
- There could be a reluctance to bear system costs, possibly due to distrust or lack of understanding of the platform’s benefits.

By considering these factors, Mr. Karthik can better anticipate potential risks and opportunities, allowing for a well-informed decision on whether to proceed with the project and how to address challenges effectively.

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:

In conducting the feasibility study for the online agriculture product store project using Java technology, Mr. Karthik should evaluate several key factors to determine the project's viability:

- **Hardware**: Mr. Karthik needs to ensure that the company has the required hardware infrastructure, such as servers, storage systems, and network components. He should also consider whether the system can scale to accommodate future growth in users and transactions.
- **Software:** Mr. Karthik should review the current software platforms and libraries to verify their compatibility with Java. Additionally, he needs to assess whether any new tools, frameworks, or software will be required to support the project.
- **Skilled Resources:** It's crucial to assess the availability of skilled personnel within the company who have experience in Java development. Mr. Karthik should determine whether there are enough trained Java developers and whether their expertise aligns with the technical requirements of the project. If necessary, he might need to arrange for additional hiring or training.
- **Budget:** Mr. Karthik must analyze the costs associated with hardware, software, and personnel. He should evaluate if the allocated budget of 2 Crores INR is adequate to cover these costs, and consider whether any adjustments to the project scope or resources are necessary to keep within budget.
- **Timeline:** The 18-month project duration must be assessed for realism, taking into account the complexity of the project. Mr. Karthik should factor in any potential risks, delays, or challenges that could affect the timeline, and ensure that the available resources are sufficient to meet the project deadlines without compromising quality.

By addressing these factors, Mr. Karthik will be able to assess whether the project can be completed within the allocated budget, timeframe, and with the available resources, ensuring it is feasible from both a technical and operational standpoint.

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: To help Mr. Karthik present a compelling Gap Analysis to Mr. Henry, the following points can be highlighted to demonstrate the difference between the current situation (AS-IS) and the envisioned future state (TO-BE) for the online agricultural product store:

Improved Accessibility: Currently, farmers in remote areas face challenges in acquiring essential farming products like fertilizers, seeds, and pesticides. The proposed online platform will provide easy access to these resources from anywhere, as long as there is internet connectivity.

Enhanced Direct Communication: The existing system lacks a streamlined way for farmers to interact directly with manufacturers. The new platform would facilitate direct communication between farmers and suppliers, cutting out middlemen and making the process more efficient.

Better Pricing and Cost Efficiency: The current model involves intermediaries, which can drive up costs for farmers. By allowing farmers to connect directly with manufacturers, the platform can help them secure better prices for the products they need.

Expanded Product Availability: Farmers in remote locations often face limited options when sourcing agricultural products. The online store will increase the availability of a broader range of products, ensuring farmers have access to necessary resources that may not be available locally.

Operational Efficiency: The current manual procurement process is often slow and prone to errors. Automating this process through the online platform will save time and reduce the risk of mistakes, leading to a more efficient purchasing experience for farmers.

Greater Transparency: The traditional process lacks visibility, making it hard to track transactions and product movement. The new system will offer clear and detailed records of transactions, ensuring transparency in both product distribution and financial dealings.

Q-5 - Risk Analysis - 10 Marks

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

Answer:

Business Analyst (BA) Risks:

Inadequate Requirements Gathering: Failing to thoroughly gather and analyze all necessary requirements may lead to misunderstandings or missing essential features, negatively affecting the final product.

Stakeholder Alignment: Managing diverse stakeholder expectations (farmers, companies, project team members, etc.) can be challenging, especially when there are conflicting needs or priorities, making it hard to reach a consensus.

Communication Gaps: Ineffective communication between the Business Analyst, the project team, and stakeholders can lead to misinterpretations, resulting in incorrect or incomplete understanding of the project requirements.

Handling Changes: Shifts in requirements or changes in stakeholder expectations during the project lifecycle can cause delays, increase costs, or introduce scope creep.

Project Risks:

Budget Constraints: The allocated budget may not be sufficient to cover the full scope of development and implementation, potentially leading to financial issues during the project.

Technical Challenges: Technical issues during the development process, such as system bugs or infrastructure limitations, could affect the project's timeline and the quality of the final deliverable.

Low User Adoption: The success of the platform depends on whether farmers and businesses actively use it. If the platform fails to gain sufficient traction, the project might not meet its objectives.

System Integrations: The online store will need to integrate with multiple systems, including payment gateways, logistics, and inventory management. Any issues with these integrations could cause delays and compromise the overall functionality and quality of the platform.

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

Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take Decisions and Who are the influencers

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 (Formers 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.

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:

1. Sequential Methodology

Also known as the Waterfall model, this approach follows a linear and step-by-step process. Each phase of development, such as requirements gathering, design, development, and testing, is completed fully before moving on to the next phase. This method is ideal for projects with well-defined and stable requirements, where the scope and risks are minimal, and changes are unlikely. It ensures clear documentation and structured progress, but lacks flexibility for handling changes mid-project.

2. Iterative Methodology

In this approach, development is carried out in iterations or cycles. Each iteration builds upon the previous one, gradually refining the system based on feedback and testing. This method is best suited for projects where requirements are complex and may evolve over time. The iterative model allows the team to make adjustments as they progress, reducing risk and improving the final product through continuous refinements.

3. Evolutionary Methodology

The Evolutionary model focuses on creating an initial version of the software quickly, which is then incrementally enhanced through multiple iterations. This method is useful in situations where requirements are likely to change rapidly, and the project carries a higher level of uncertainty. The evolutionary approach ensures that the product evolves and adapts over time, responding to new requirements or market demands.

4. Agile Methodology

Agile is an adaptive and flexible approach that emphasizes collaboration between the development team and stakeholders throughout the project. It follows an iterative and incremental process, with frequent releases and continuous feedback. Agile is well-suited for projects with rapidly changing requirements, high risk, and a complex environment. It focuses on delivering functional software in short cycles, ensuring customer satisfaction through ongoing engagement and flexibility to handle new priorities or features.

Q-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:

During the discussion on different Software Development Life Cycle (SDLC) models, various options like Waterfall, RUP, Spiral, and Scrum were considered. Each model offers a unique approach to software development, and here is an understanding of these methodologies:

1. Waterfall Model

The Waterfall model is a linear, sequential development approach where each phase—such as requirements gathering, design, implementation, and testing—must be completed before the next phase begins. This model is suitable for projects with well-defined and stable requirements and a clear scope, where changes are unlikely to occur during development.

2. RUP (Rational Unified Process)

RUP is an iterative and incremental approach that focuses on delivering the project through multiple iterations. It incorporates best practices in software development and is well-suited for complex projects where requirements might change over time. RUP provides a structured framework for handling complexity and risk in large-scale projects.

3. Spiral Model

The Spiral model combines elements of both sequential and iterative approaches. It involves developing the project in cycles, where each cycle builds upon the previous one, allowing for iterative refinement. This model is ideal for high-risk projects or projects with unclear or evolving requirements. It emphasizes risk assessment and mitigation at each stage.

4. Scrum (Agile Approach)

Scrum is an Agile methodology that promotes teamwork, collaboration, and flexibility. It follows an iterative and incremental development process, where small functional pieces of the software are delivered in sprints. Scrum is highly adaptive and is best suited for projects with rapidly changing requirements and complex challenges.

Methodology Selection: V-Model vs. Waterfall

Regarding the online agriculture product store project, there is a difference of opinion between the subject matter experts (SMEs) and the project team. The SMEs are advocating for the V-Model, while the project team favors the Waterfall Model. As a Business Analyst, my analysis is as follows:

- V-Model: This is an extension of the Waterfall model, where development phases correspond directly with testing phases (verification and validation). It allows for more flexibility in terms of validation at each stage. Since testing is involved early in the process, the V-Model ensures any issues or changes are detected and handled earlier. Given that this project may experience changes as it progresses, the V-Model offers a structured yet adaptable approach, making it a better fit for this scenario.
- Waterfall Model: While the Waterfall model is simpler and works well for projects with fixed requirements, it lacks the flexibility needed when changes arise mid-project. This could be limiting for this online platform, where the requirements may evolve based on user feedback or market conditions.

The **V-Model** is the more appropriate choice for this project, as it offers the required flexibility and allows for adaptation throughout the development process

Question 10 – Waterfall Vs V-Model - 5 Marks

Write down the differences between waterfall model and V model.

Answer:

Differences Between Waterfall Model and V-Model

1. Waterfall Model:

- The Waterfall Model is a linear and sequential development approach, where each phase must be fully completed before moving on to the next.
- It is best suited for projects with well-defined, stable requirements where no major changes are expected throughout the development process.
- Progress flows in a downward fashion through distinct phases like requirements, design, development, testing, and deployment.
- Testing is done only after the development phase is finished, making it difficult to identify issues early in the process.
- This model is easy to manage due to its simplicity but lacks flexibility in accommodating changes.

2. V-Model:

- The V-Model is an extension of the Waterfall approach, but for every development phase, there is a corresponding testing phase, creating a "V" shape when visualized.
- It is ideal for projects with strict quality standards and regulatory requirements, as it integrates verification and validation at each stage of development.
- Unlike the Waterfall model, testing happens alongside development, allowing for early detection of defects and reducing the cost and effort of fixing issues later.
- The V-Model provides a clear traceability between requirements, development, and testing, ensuring a higher quality product.

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 chart with 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/PA
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	Deployment

Question 13: Fixed Bid Vs Billing - 5 Marks

Explain the difference between Fixed Bid and Billing projects

Answer:

Fixed Bid Model: In this model, the total cost of the project is agreed upon in advance, and it stays the same no matter what happens during the project. The project's scope and timeline are clearly defined from the beginning. The vendor (service provider) is responsible for delivering everything within the agreed price, even if there are unexpected issues or extra costs.

Billing Model: In this model, the client pays based on the actual time and resources spent on the project. The scope of the project can change as it progresses, and the budget and timeline are adjusted accordingly. This approach offers more flexibility since the client only pays for the work that's actually done.

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 test Case	11:00 AM	07:00 PM	8 Hours
02/09/2024	Communicate with client on design	11:00 AM	03:00 PM	4 Hours
03/09/2024	Designing database schema	11:00 AM	07:00 PM	8 Hours
04/09/2024	Creating wireframes	10:00 AM	04:00 PM	6 Hours
05/09/2024	Reviewing and refining design	11:00 AM	03:00 PM	4 Hours
06/09/2024	Creating Design specifications	11:00 AM	03:00 PM	4 Hours
09/09/2024	Meeting with Development team	11:00 AM	02:00 PM	3 Hours
10/09/2024	Updating design based on feedback	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	Conduct a session to elucidate design	11:00 AM	07:00 PM	8 Hours
03/10/2024	Conducted session for design and development	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	BA Prepare Test case from use case	10:00 AM	12:00 PM	2 Hours
02/11/2024	BA perform high level testing	10:00 AM	03:00 PM	5 Hours
03/11/2024	Conducted regression testing of module Z	10:00 AM	03:00 PM	5 Hours
04/11/2024	Reviewed test plans for upcoming release	10:00 AM	12:00 PM	2 Hours
05/11/2024	Analyzed test results and reported issues	10:00 AM	03:00 PM	5 Hours
06/11/2024	Tested integration of Module A with B	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	Forward RTM To client or the PM which should be attached to the project closure document	11:00 AM	07:00 PM	8 Hours
02/01/2025	Coordinate to complete and share end user Manuals	12:00 PM	07:00 PM	7 Hours
03/01/2025	Plan and Organize training session for end user	10:00 AM	07:00 PM	9 Hours
04/01/2025	Prepare and Organize training session for end user.	11:00 AM	11:00 PM	12 Hours
05/01/2025	Finalize implementation and post-deployment	10:00 AM	09:00 PM	11 Hours
Total				**47 Hours**

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 throughthese products and select the products what they need and request to buy them and deliver them to 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 INR and 18 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 – 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
Checklist	BRD Template
	Elicitation result report
	Duplicate requirement report
	Grouping of functionalities/ features -client sign
	Email communication – to CC, BCC

Stage	**Quarter 2- Audit Report (Requirement analysis phase)**
Completed	7 weeks
Checklist	UML diagram
	Business to functional requirement mapping
	Client signoff- document
	RTM document version Control
	Email communication – to CC, BCC

Stage	**Quarter 3- Audit Report Design Phase**
Completed	7 weeks
Checklist	Utilization of tool
	Document evidence on client communication
	Stakeholder MOM
	Email communication – to CC, BCC

Stage	**Quarter 4- Audit Report (Development)**
Completed	20 weeks
Checklist	JAD session report
	End user manual preparation document
	BA and developer MOM
	Email communication – to CC, BCC

Stage	Quarter 5- Audit Report (Testing)
Completed	20 weeks
Checklist	Test Case summary
	Training report to end user
	Lesson 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 VandanamSenior
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 follow 3-tier

architecture for this project.

Answer:

1. Elicitation Techniques to Apply

- **Interviews**: Conduct individual or group interviews with key stakeholders like Mr. Henry, Peter, Kevin, and Ben to gather detailed requirements.
- **Workshops**: Arrange collaborative workshops involving farmers, manufacturers, and developers to capture high-level requirements and clarify expectations.
- **Surveys/Questionnaires**: Use these to gather feedback from farmers in different areas, especially regarding features they would like to see in the app.
- **Document Analysis**: Review existing documents related to agriculture products, regulations, and online commerce for a deeper understanding of the domain.

2. Stakeholder Analysis

- **RACI Matrix**: Develop a RACI matrix to define the roles and responsibilities of stakeholders. For example, the committee (Mr. Henry, Mr. Pandu, Mr. Dooku) will be Accountable, the farmers will be Consulted, and the development team (APT IT Solutions) will be Responsible for execution.
- **Identify Stakeholders**: Key stakeholders are Mr. Henry, the committee members (Mr. Pandu and Mr. Dooku), Peter, Kevin, Ben (farmers), and APT IT Solutions' technical team (project manager, developers, etc.).
- **Stakeholder Engagement Strategy**: Prioritize engagement based on influence and interest. For example, high-priority stakeholders like Mr. Henry and the farmers will need frequent updates and involvement in decision-making.

3. Documents to Write

- **Business Requirements Document (BRD)**: Captures the high-level business requirements, objectives, and the problem statement.
- **Functional Requirements Specification (FRS)**: Details the functionalities of the online store (e.g., product listing, purchasing, payment integration).
- **Non-Functional Requirements (NFR) Document**: Defines performance, scalability, and security aspects of the system.
- **Use Case Diagrams and Process Flows**: Visual representations of user interactions, especially for farmers, manufacturers, and the admin panel.
- **Test Cases**: Prepare a list of test cases to validate the functionalities and user experiences during the User Acceptance Testing (UAT) phase.

4. Process to Follow for Sign-off on Documents

- **Review with Stakeholders**: Ensure all major documents (BRD, FRS) are reviewed with stakeholders (committee, project manager, key users).
- **Document Approval Cycle**: Share the final versions via email or a document repository. Secure formal sign-offs from the committee through documented approvals or a project management tool.

5. Taking 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.

6. 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.

7. How to Handle Change Requests

- **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.

8. How to Update Progress to Stakeholders

- **Weekly Status Reports**: Send weekly status reports to stakeholders, highlighting progress, risks, issues, and upcoming milestones.
- **Monthly Steering Committee Meetings**: Schedule monthly meetings with the committee to present the overall project health, timelines, and any critical risks or changes.

9. How to Take Sign-Off on the UAT – Client Project Acceptance Form

- **UAT Preparation**: Ensure that the application is thoroughly tested before UAT begins, with test cases mapped to the requirements.
- **Client UAT Involvement**: During the UAT phase, the committee and key users (e.g., farmers) should be involved in testing and feedback sessions.
- **UAT Sign-Off**: After successful UAT completion, the client will sign the project acceptance form. This can be a formal document that certifies the acceptance of the final product and marks the project as complete.

Question 3 – 3-Tier Architecture - 5 Marks

Explain and illustrate 3-tier architecture?

Answer:

1. **Application Layer (Presentation 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 (Application 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 (Data 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. 5W 1H Approach

This approach helps structure questions to get comprehensive answers, ensuring all critical aspects of the project are covered.

- **What**: What are the requirements or problems?
  (e.g., "What specific difficulties do farmers face while using the current procurement process?")
- **Why**: Why is this requirement important to the stakeholders?
  (e.g., "Why is it important to have real-time product availability?")
- **Who**: Who are the users, stakeholders, and target audience?
  (e.g., "Who will be using the application primarily?")
- **When**: When should the feature or functionality be implemented?
  (e.g., "When do you expect the product to be fully functional?")
- **Where**: Where will the application be used, and in what contexts?
  (e.g., "Where do you expect the highest usage of this application, on mobile or desktop?")
- **How**: How will the product solve the problem or add value?
  (e.g., "How do you envision farmers placing an order for products?")

2. SMART Goals

Framing questions that align with **SMART** goals ensures clarity, precision, and focus:

- **Specific**: Ask specific questions to avoid ambiguity.
  (e.g., "What specific crops require pesticides?")
- **Measurable**: Ensure that the requirements can be quantified.
  (e.g., "How many farmers do you expect to register in the first year?")
- **Achievable**: The solutions should be realistic and feasible.
  (e.g., "Can we integrate payment gateways with the current infrastructure?")
- **Relevant**: Focus on the key areas that bring value.
  (e.g., "Is delivering products to remote areas a key concern for farmers?")
- **Time-Bound**: Consider the timeline for delivery.
  (e.g., "When should we deliver a prototype for stakeholder review?")

3. RACI Matrix

The **RACI** matrix (Responsible, Accountable, Consulted, Informed) helps define roles and responsibilities, making sure the right stakeholders are involved at the right stages. Keep these considerations when framing questions:

- **Responsibility**: Who is responsible for gathering the information?
  (e.g., "Who from the committee should approve the product design?")
- **Accountability**: Who will be accountable for the final decision?
  (e.g., "Who will approve changes in the feature set?")
- **Consultation**: Who needs to be consulted for their expert opinion?
  (e.g., "Who among the developers and testers needs to be consulted regarding app performance?")
- **Information**: Who needs to be kept informed?
  (e.g., "Which stakeholders need to be updated on project progress weekly?")

4. 3-Tier Architecture

Understanding the technical design is essential to ask technical questions that ensure proper alignment between stakeholders and developers.

- **Application Layer**: Ask questions about the user interface and experience.
  (e.g., "What key functionalities do you envision on the homepage for farmers?")

- **Business Logic Layer**: Focus on how the application processes and handles data.
  (e.g., "How should the application handle bulk order placements and inventory updates?")
- **Database Layer**: Understand the data management needs.
  (e.g., "What data security measures are necessary to protect farmers' personal information?")

5. Use Cases and Use Case Specifications

Use cases are helpful in understanding the interactions between users and the system. Frame questions to clarify how stakeholders will interact with the system.

- **Use Cases**:
  (e.g., "Can you describe a typical use case for a farmer buying seeds online?")
- **Use Case Specifications**:
  (e.g., "What specific validations are required when a farmer selects a product?")

6. Activity Diagrams and Models

Visual models like activity diagrams help stakeholders understand workflows. Use these diagrams to clarify business processes.

- **Activity Diagrams**:
  (e.g., "Can you walk me through the steps a farmer will follow from product selection to payment confirmation?")
- **Process Models**:
  (e.g., "What are the different decision points when a farmer is placing an order?")

7. Page Designs and Wireframes

Understanding the application's layout and structure is essential for ensuring that the stakeholders' expectations align with the user interface design.

- **Wireframes**:
  (e.g., "What elements should be visible on the product listing page?")
- **Page Design Specifications**:
  (e.g., "Do you have any preferences for how product categories are displayed to farmers?")

Question 5 – Elicitation Techniques - 6 Marks

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

Answer:

- **Brainstorming (B):** A group activity where stakeholders generate ideas and solutions without judgment. It encourages creativity and can lead to innovative ideas.
- **Document Analysis (D):** Reviewing existing documentation (e.g., reports, specifications, user manuals) to extract relevant information and requirements.
- **Requirements Focus Groups (R):** Bringing together a group of stakeholders to discuss their needs and preferences regarding the project.
- **Interviews (I):** Conducting one-on-one or group interviews with stakeholders to gather detailed insights about their needs and expectations.
- **Observation (O):** Observing users in their environment to understand their workflows, challenges, and requirements firsthand.
- **Workshops (W):** Facilitated sessions that bring stakeholders together to collaborate on requirements gathering, prioritization, and design.
- **Joint Application Development (J):** A collaborative approach where developers and users work together to design and develop systems, often using workshops to gather requirements.
- **Prototyping (P):** Creating early models or mockups of the application to help stakeholders visualize and refine their requirements.
- **Questionnaires/Surveys (Q):** Distributing structured questions to a larger audience to gather quantitative and qualitative data about their needs.
- **User Stories (U):** Collecting requirements in the form of user stories that describe the desired functionality from the end-user perspective.

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 catalog 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 catalog 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 is an effective elicitation technique for this project because it involves gathering a diverse set of ideas, which is crucial for a completely new initiative like an online agriculture products store. This project addresses the specific needs of both farmers and manufacturers, and to ensure the application is user-friendly, it's essential to involve all key stakeholders (like Mr. Henry, Peter, Kevin, Ben, and the development team) in a collaborative discussion.

By using brainstorming sessions, we can encourage creative input, explore various perspectives, and uncover potential requirements or features that may not have been initially considered. This approach

will help us ensure that the platform is aligned with the actual needs of farmers, such as ease of product search, a smooth login process, and payment options, while also accommodating the manufacturers' ability to upload and display their products. The involvement of the client, SOONY, will also ensure that their expectations are clearly captured and that we create a solution that is both functional and intuitive for end users.

Question 7 – 10 Business Requirements- 10 Marks

Make suitable Assumptions and identify at least 10 Business Requirements.

Answer:

Here are **10 business requirements** based on the provided scenario with some assumptions:

1. **BR001** – Farmers should be able to search for available products in the categories of fertilizers, seeds, and pesticides.
2. **BR002** – Manufacturers should be able to create accounts and upload product details (fertilizers, seeds, pesticides) to the platform.
3. **BR003** – The platform should support user authentication with login features for both farmers and manufacturers.
4. **BR004** – New users (farmers and manufacturers) should be able to register by providing basic information, including email, password, and location.
5. **BR005** – Farmers should be able to add products to a "buy-later" list and manage their shopping carts.
6. **BR006** – The platform should support multiple payment options, including Credit/Debit Cards, UPI, and Cash on Delivery (COD).
7. **BR007** – Farmers should receive email confirmations regarding the order status after making purchases.
8. **BR008** – A delivery tracking system should be implemented to allow farmers to track their orders once they have been shipped.
9. **BR009** – The system should have a product search function with filters (e.g., by category, price, manufacturer) to make it easy for farmers to find the products they need.
10. **BR010** – The platform should be accessible via both web and mobile applications and be designed with a user-friendly interface for non-technical users in remote areas.

Question 8 –Assumptions- 5 Marks

List your assumptions

Answer:

Assumptions:

- The platform is an online marketplace where farmers can buy fertilizers, seeds, and pesticides directly from manufacturers.
- The application will be accessible via both web and mobile devices.
- User-friendliness is a priority as many users may not be tech-savvy.
- The system must include functionalities for browsing, searching, and purchasing products, as well as a delivery tracking system.
- Manufacturers will upload product information, and the platform will facilitate communication between them and the farmers

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 Products	Farmers should be able to search for available products in fertilizers, seeds, pesticides	8
BR002	Manufacturers upload their Products	Manufacturers should be able to upload and display their products in the application	8

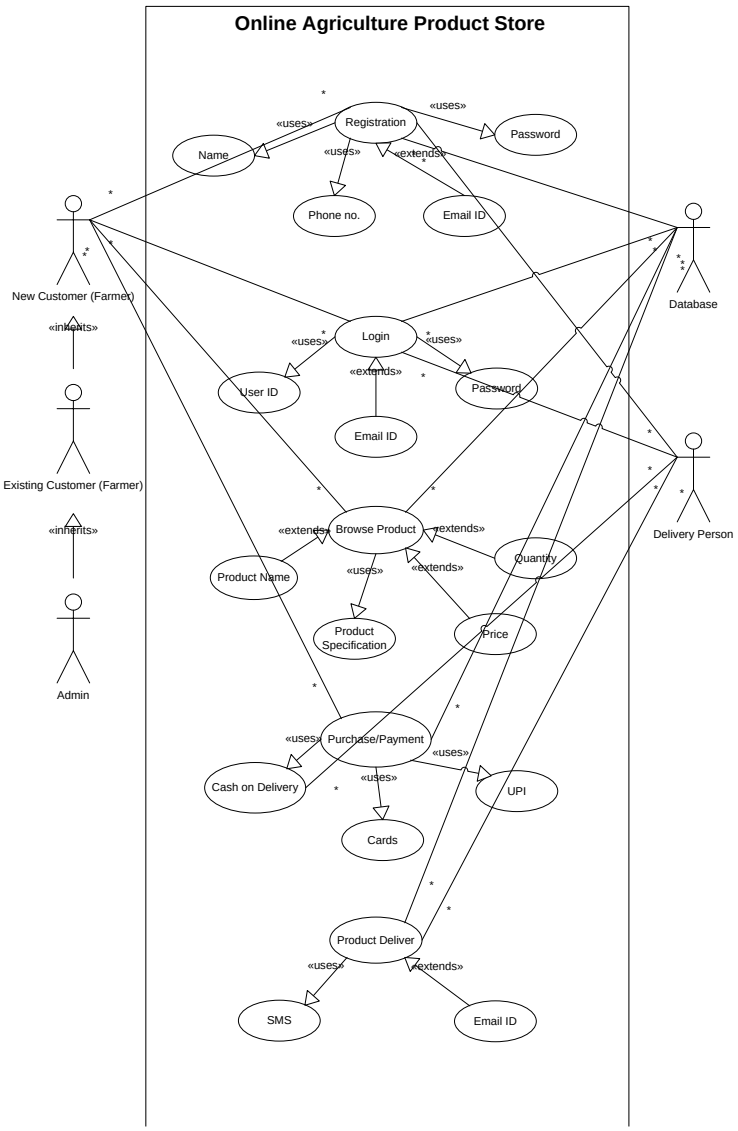
Once the requirements are finalized, as a business analyst, one of the major roles is to act as a liaison between the client and the project team. To gather the requirements correctly from the client side and then to deliver those requirements to the project team in a way they understand. To make the 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 Products	Farmers should be able to search for available products in fertilizers, seeds, pesticides	8
BR002	Manufacturers upload their Products	Manufacturers should be able to upload and display their products in the application	8
BR003	User Authentication	The platform should support user authentication with login features for both farmers and manufacturers	9
BR004	New User Registration	New users (farmers and manufacturers) should be able to register by providing basic information, including email, password, and location	8
BR005	Shopping Cart and Buy-Later List	Farmers should be able to add products to a "buy-later" list and manage their shopping carts.	7
BR006	Multiple Payment Options	The platform should support multiple payment options, including Credit/Debit Cards, UPI, and Cash on Delivery (COD).	10
BR007	Order Confirmation via Email	Farmers should receive email confirmations regarding the order status after making purchases.	6
BR008	Delivery Tracking System	A delivery tracking system should be implemented to allow farmers to track their orders once they have been shipped.	7
BR009	Product Search with Filters	The system should have a product search function with filters (e.g., by category, price, manufacturer) to make it easy for farmers to find the products they need.	9
BR010	Web and Mobile Accessibility	The platform should be accessible via both web and mobile applications and be designed with a user-friendly interface for non-technical users in remote areas.	8

Question 10 – Use Case Diagram - 10 Marks

Draw use case diagram



Question 11 – (minimum 5) Use Case Specs - 15 Marks

Prepare use case specs for all use cases

Answer:

Use case ID	US01		
Use case Name	Login		
Created by	Mr. Pratik	Last updated by	
Date created	25/09/2024	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. Then user Can log in with other medium like log in with google.		
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	UC02		
Use case Name	New User Registration		
Created by	Mr. Pratik	Last updated by	
Date created	25/09/2024	Last revision date	
Actor	Farmer , Manufacturer.		
Description	The farmer and Manufacturer registers as a new user in the system		
Pre-condition	The farmer has not registered before and has a valid Phone number/Email ID.		
Post-condition	The farmer is registered in the system		
Basic flow	1. Farmer clicks on “New User.” 2. Farmer enters Phone number/Email ID. 3. System verifies the data and registers the farmer.		
Alternative flow	If the Phone number/Email ID is invalid, the system prompts for re-entry.		
Exceptions	Server errors or communication failures may prevent registration.		
Frequency of use	Occurs once for new users.		
Assumptions	Farmers are familiar with the registration process.		

Use case ID	UC03		
Use case Name	Perform Online Purchase		
Created by	Mr. Pratik	Last updated by	
Date created	25/09/2024	Last revision date	
Actor	Farmer		
Description	This use case covers the process where a farmer makes an online purchase of a product.		
Pre-condition	The farmer is logged in and has browsed available products.		
Post-condition	The farmer successfully places an order for a product.		
Basic flow	1. Farmer browses available products. 2. Farmer selects a product and checks availability. 3. Farmer places an order. 4. Farmer makes a payment via UPI/Cards or chooses Cash on Delivery.		
Alternative flow	If the product is out of stock, the system notifies the farmer and suggests alternatives.		
Exceptions	Payment gateway failure, product unavailability, or network issues.		
Frequency of use	high		
Assumptions	The farmer is familiar with online purchasing.		

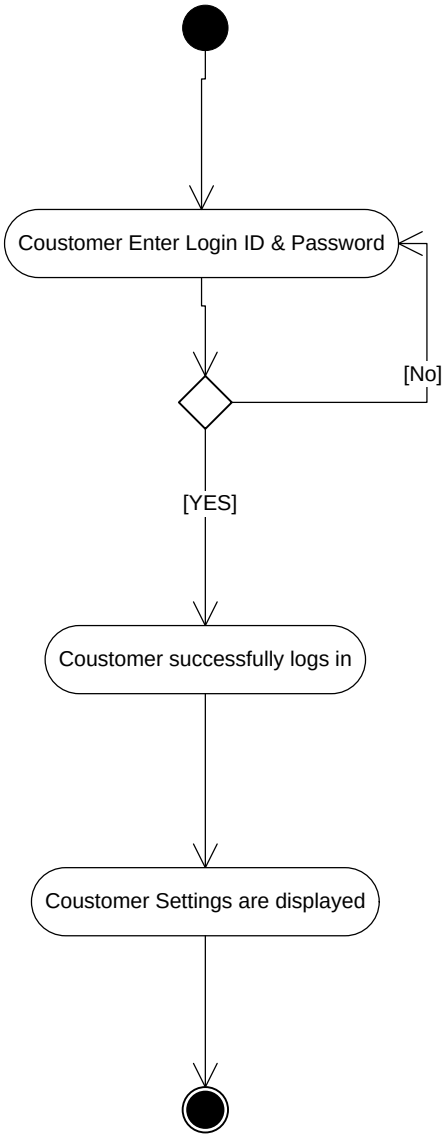
Use case ID	UC04		
Use case Name	Browse Products		
Created by	Mr.Pratik	Last updated by	
Date created	25/09/2024	Last revision date	
Actor	Farmer		
Description	This use case describes how the farmer can browse available products on the system.		
Pre-condition	The farmer is logged in.		
Post-condition	The farmer views the available products.		
Basic flow	1. Farmer selects the "Browse Products" option. 2. Farmer Enter Keyword about Product 3. The system displays available products.		
Alternative flow	None.		
Exceptions	System failure or no products available.		
Frequency of use	Medium		
Assumptions	Products are regularly updated.		

Use case ID	UC05		
Use case Name	Upload Product Details		
Created by	Mr. Pratik	Last updated by	
Date created	25/09/2024	Last revision date	
Actor	Manufacturer		
Description	This use case describes the process where the manufacturer uploads product details.		
Pre-condition	The manufacturer is logged into the system.		
Post-condition	Product details are successfully uploaded and displayed on the system.		
Basic flow	1. Manufacturer logs in and navigates to upload product details. 2. Manufacturer fills in product details (name, price, availability, etc.). 3. The system validates the details and uploads the product.		
Alternative flow	If there are missing details, the system prompts the manufacturer to fill in the necessary fields.		
Exceptions	Server issues may prevent the upload.		
Frequency of use	High		
Assumptions	The manufacturer has all the necessary product details.		

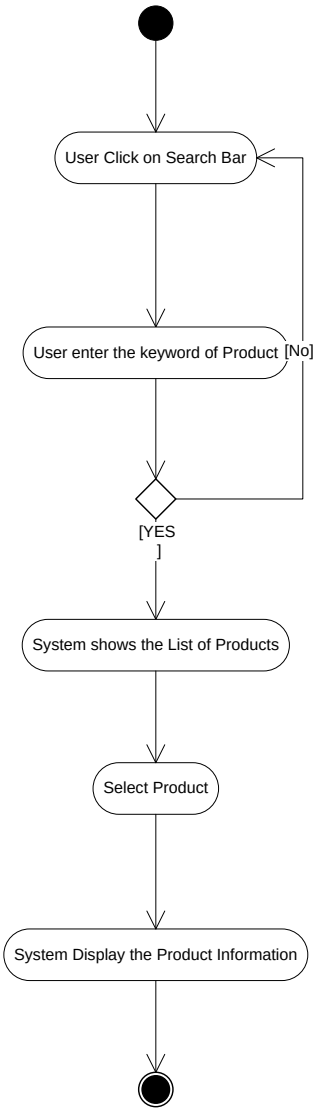
Question 12 – (minimum 5) Activity Diagrams - 15 Marks

Activity diagrams

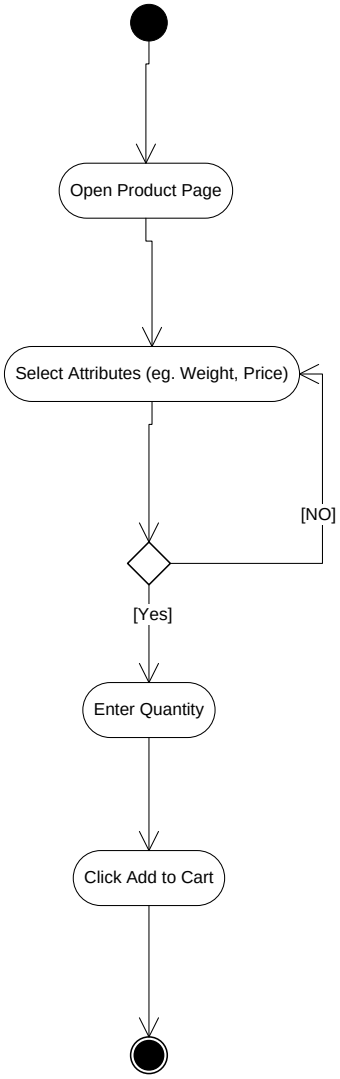
Registered user Login:



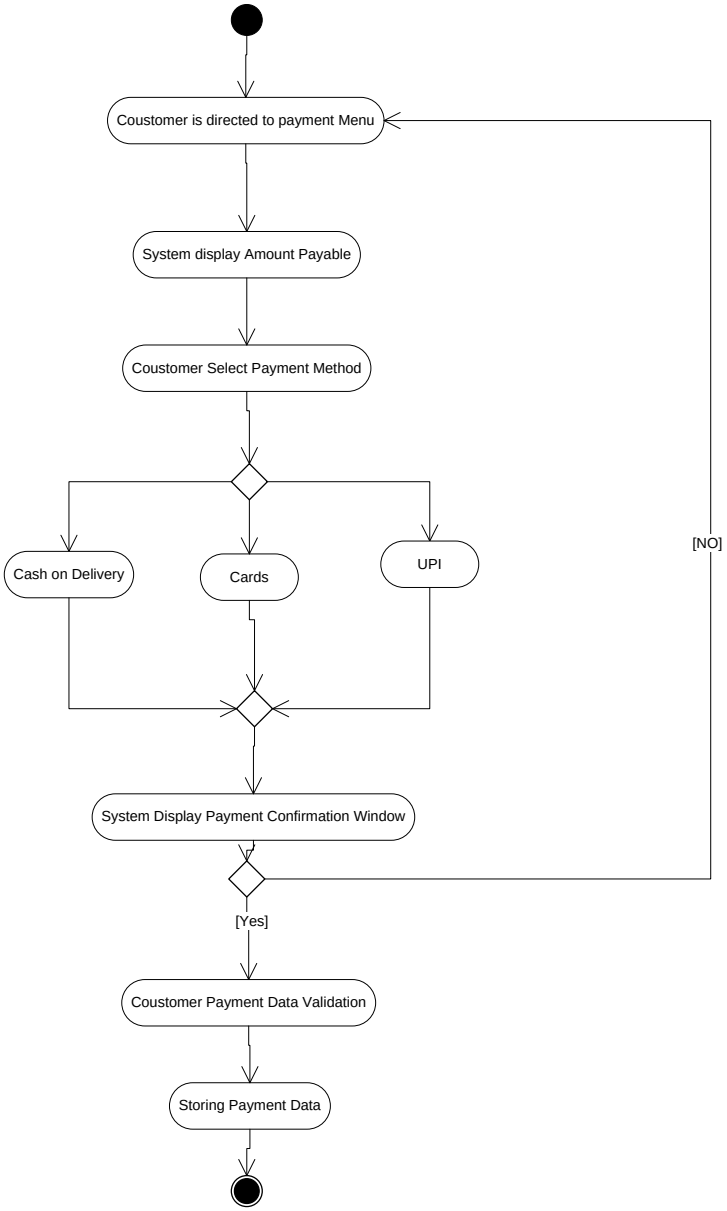
Search/Browse Product:


User Click on Search Bar
User enter the keyword of Product
[No]
[YES
]
System shows the List of Products
Select Product
System Display the Product Information

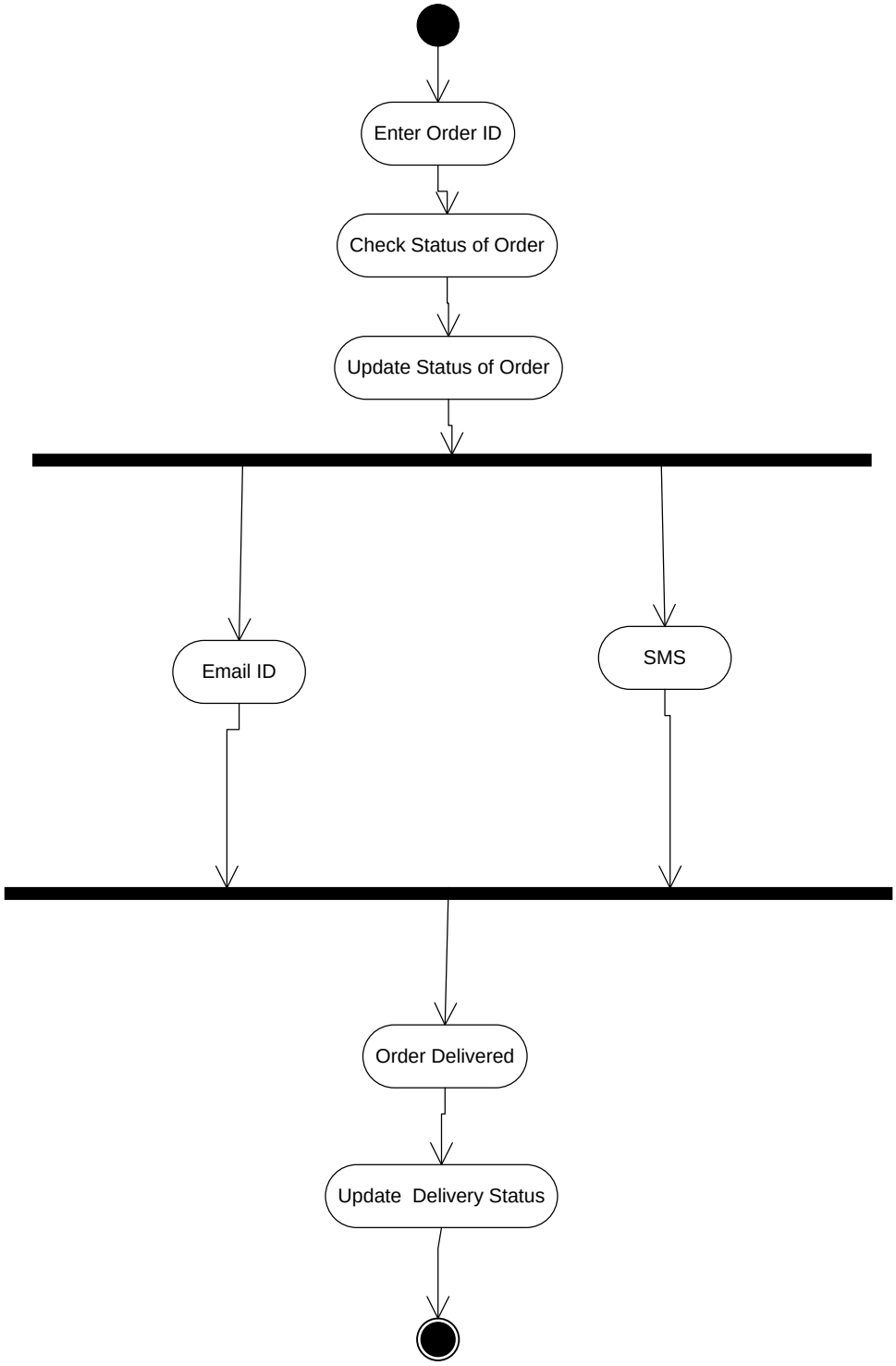
Add To Cart:


Open Product Page
Select Attributes (eg. Weight, Price)
[NO]
[Yes]
Enter Quantity
Click Add to Cart

Payment:


Coustomer is directed to payment Menu
System display Amount Payable
Coustomer Select Payment Method
Cash on Delivery
Cards
UPI
[NO]
System Display Payment Confirmation Window
[Yes]
Coustomer Payment Data Validation
Storing Payment Data

Order Delivery:



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 throughthese products and select the products what they need and request to buy them and deliver them to 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 INR and 18 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 – Functional Requirements - 15 Marks

Identify minimum 20 functional requirements

Answer:

Req Id	Req Name	Req Description
FR001	User Registration	Farmers and manufacturers must be able to create user accounts to access the platform
FR002	User Authentication	The system must provide login functionality for registered users to access their accounts.
FR003	Product Listing	Manufacturers can add, edit, and delete product listings (fertilizers, seeds, pesticides).
FR004	Product Browsing	Farmers can browse the available products by category (fertilizers, seeds, pesticides).
FR005	Search Functionality	Farmers can search for specific products using keywords.
FR006	Product Details	The system must display detailed information for each product, including price, description, and manufacturer.
FR007	Shopping Cart	Farmers can add products to a shopping cart for later review or purchase.
FR008	Checkout Process	The system must provide a streamlined checkout process for farmers to purchase products.
FR009	Order Confirmation	After a successful purchase, farmers receive an order confirmation with details via email/SMS.
FR010	Payment Integration	The application must support multiple payment methods (credit card, debit card, UPI, etc.).
FR011	Order Tracking	Farmers can track the status of their orders (pending, shipped, delivered).
FR012	User Profile Management	Users can view and edit their profile information (name, address, contact details).
FR013	Reviews and Ratings	Farmers can leave reviews and ratings for products they have purchased.
FR014	Notifications	Users receive notifications for order updates, new product listings, and special offers.
FR015	Feedback Submission	Farmers can submit feedback about the platform and report issues.
FR016	Manufacturer Profiles	Each manufacturer must have a profile page that displays their products and company information.
FR017	Inventory Management	Manufacturers can manage their inventory levels for products listed on the platform.
FR018	FAQs and Support	The system must provide a section for frequently asked questions and customer support contact.
FR019	Mobile Compatibility	The application must be responsive and functional on mobile devices.
FR020	Data Security	The system must implement security measures to protect user data and transactions.

Req Id	Req Name	Req Description
NFR001	Performance	The system should respond to user interactions within 2 seconds on average to ensure a smooth user experience.
NFR002	Scalability	The platform must support a 50% increase in the user base during peak farming seasons without performance degradation.
NFR003	Availability	Ensure 99.9% uptime, minimizing downtime to less than 9 hours annually to maintain continuous access for users.
NFR004	Security	All user data must be encrypted using SSL/TLS protocols to protect against unauthorized access and data breaches.
NFR005	Data Privacy	Comply with GDPR standards to protect farmers' personal and financial information, ensuring user trust and legal adherence.
NFR006	Usability	The application should have an intuitive interface, allowing key tasks (like product search and purchase) to be completed within three clicks.
NFR007	Compatibility	The system must be compatible with major web browsers (Chrome, Firefox, Safari, Edge) and mobile operating systems (iOS, Android)
NFR008	Maintainability	The codebase should follow a modular architecture to facilitate easy updates and maintenance with minimal downtime.
NFR009	Localization	Support multiple languages, including local dialects, to accommodate non-English speaking users effectively.
NFR010	Accessibility	Comply with WCAG 2.1 standards to ensure the application is accessible to users with disabilities, enhancing inclusivity.
NFR011	Reliability	The system should operate without critical failures for at least 12 months between incidents to ensure consistent performance.
NFR012	Load Handling	Handle up to 500 transactions per second during peak demand periods without system crashes or significant slowdowns.
NFR013	Disaster Recovery	Implement a disaster recovery plan that allows the system to recover and restore services within 1 hour after a failure.
NFR014	Auditability	Maintain detailed transaction logs for audit purposes, stored securely for a minimum of 5 years to ensure traceability.
NFR015	Backup	Perform daily data backups, stored securely off-site for 6 months to prevent data loss and ensure data integrity.
NFR016	Modularity	Design the system with a modular architecture to allow future enhancements and third-party integrations with minimal changes
NFR017	Latency	Ensure that internal API calls have a latency not exceeding 100 milliseconds to maintain system efficiency.
NFR018	Energy Efficiency	Optimize the mobile application to minimize battery consumption, especially for users in remote areas with limited charging facilities.
NFR019	Compliance	Adhere to local and international e-commerce regulations, especially those related to agriculture products, ensuring legal compliance
NFR020	Notification Reliability	Ensure that all user notifications (email/SMS) are delivered successfully within 5 minutes of triggering to keep users informed promptly.

Question 2–Minimum 5 page designs - 15 Marks

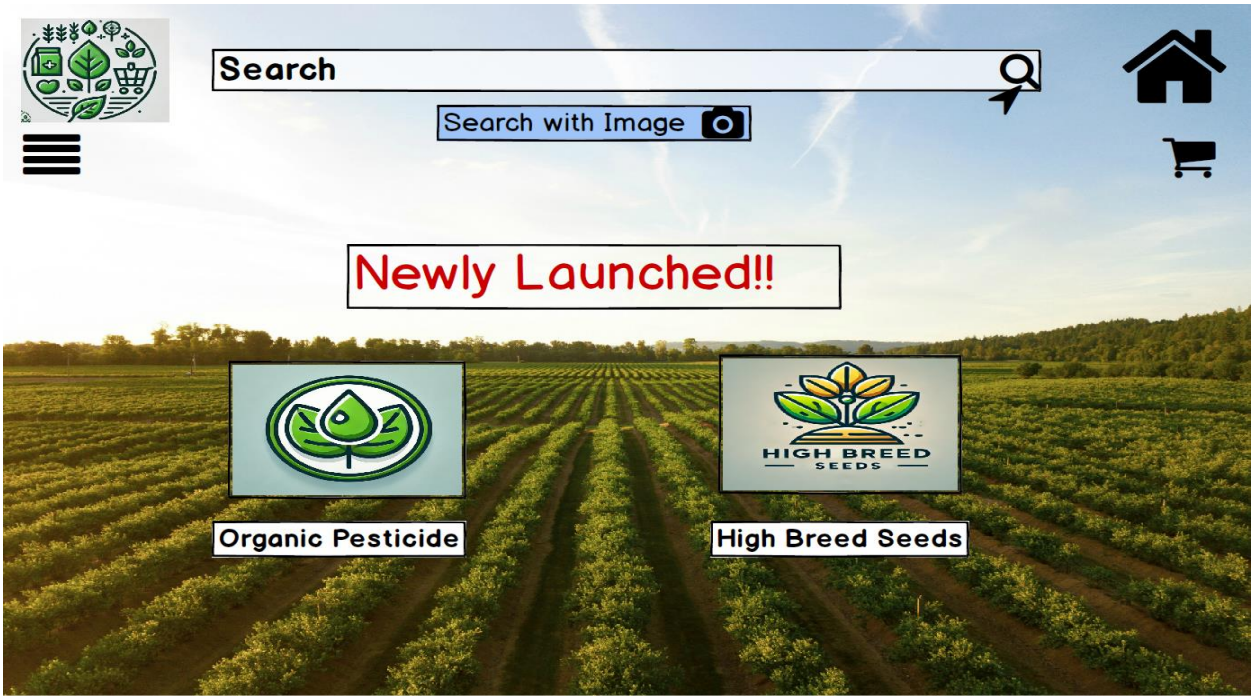
Make wireframe and prototypes

Answer:

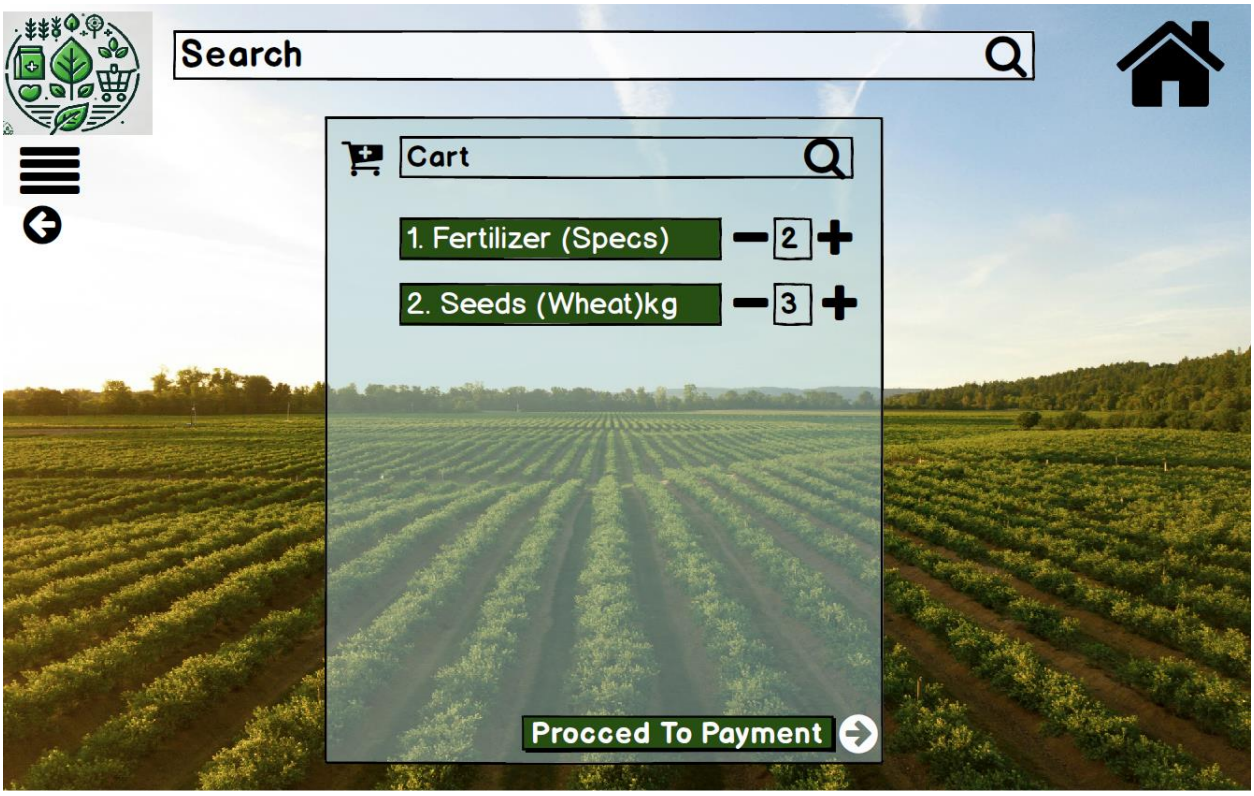
Home Page:

Registration:

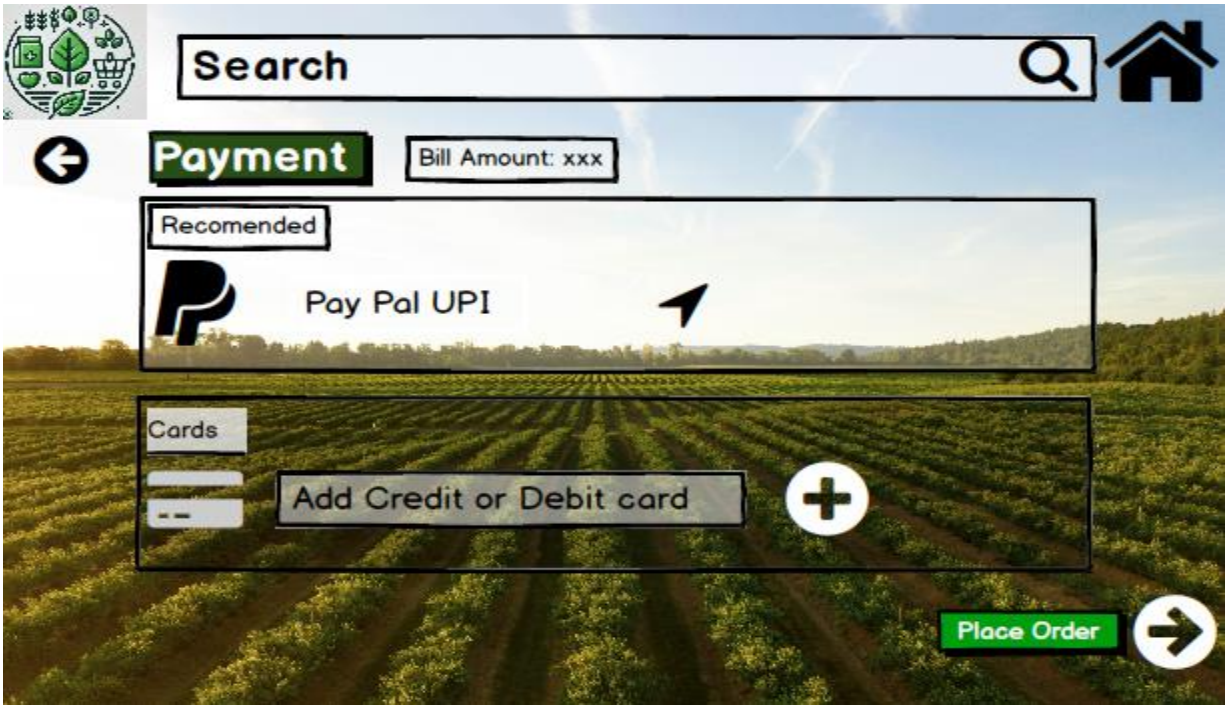
Browse Product:



Add To Cart:



Payment and Placing Order:



Question 3 – Tools (Visio, Balsamiq) - 15 Marks

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 Marks

A business analyst's key responsibilities are to keep track of the requirements and make sure that no requirement is missed. A business analyst's key responsibilities are to keep track of the requirements and make sure that no requirement is missed.

Answer:

RMT For Functional Requirement:

Req ID	Req Name	Req Description	Design	Code	UTT (Unit Testing)	CTT (Component Testing)	ST (System Testing)	SIT (System Integration Testing)	UAT (User Acceptance Testing)
FR001	User Registration	Create user accounts on platform.	Complete	Complete	Complete	Complete	Complete	Complete	Incomplete
FR002	User Authentication	Login for registered users.	Complete	Complete	Complete	Complete	Complete	Incomplete	Incomplete
FR003	Product Listing	Add, edit, delete product listings.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR004	Product Browsing	Browse products by category.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR005	Search Functionality	Search products using keywords.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR006	Product Details	Display product information and price.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR007	Shopping Cart	Add products to shopping cart.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR008	Checkout Process	Streamlined product checkout process.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR009	Order Confirmation	Receive order confirmation via email/SMS.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR010	Payment Integration	Support multiple payment methods.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR011	Order Tracking	Track order status (shipped/delivered).	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR012	User Profile Management	View and edit user profile.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR013	Reviews and Ratings	Leave reviews for purchased products.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR014	Notifications	Receive order and product notifications.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR015	Feedback Submission	Submit platform feedback/issues.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR016	Manufacturer Profiles	View manufacturer profile and products.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR017	Inventory Management	Manage product inventory levels.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR018	FAQs and Support	FAQs and customer support section.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR019	Mobile Compatibility	Responsive design for mobile devices.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete
FR020	Data Security	Protect user data and transactions.	Complete	Complete	Complete	Complete	Incomplete	Incomplete	Incomplete

RMT For Non Functional Requirement:

Req ID	Req Name	Req Description	Design	Code	UTT (Unit Testing)	CTT (Component Testing)	ST (System Testing)	SIT (System Integration Testing)	UAT (User Acceptance Testing)
NFR001	Performance	Respond within 2 seconds.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR002	Scalability	Support 50% user increase	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR003	Availability	Ensure 99.9% uptime.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR004	Security	Encrypt data with SSL/TLS.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR005	Data Privacy	Comply with GDPR.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR006	Usability	Complete key tasks in 3 clicks.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR007	Compatibility	Support major browsers and mobile OS.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR008	Maintainability	Use modular architecture	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR009	Localization	Support multiple languages.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR010	Accessibility	Comply with WCAG 2.1 standards.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR011	Reliability	No failures for 12 months.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR012	Load Handling	Handle 500 transactions per second.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR013	Disaster Recovery	Restore services within 1 hour.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR014	Auditability	Maintain logs for 5 years	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR015	Backup	Perform daily backups, store off-site.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR016	Modularity	Use modular architecture for	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR017	Latency	Internal API calls < 100 ms.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR018	Energy Efficiency	Optimize mobile app battery usage.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR019	Compliance	Follow local and international regulations.	complete	complete	complete	complete	Incomplete	Incomplete	Incomplete
NFR020	Notification Reliability	Deliver notifications in 5 minutes.	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 Name**	Payment Gateway Integration
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

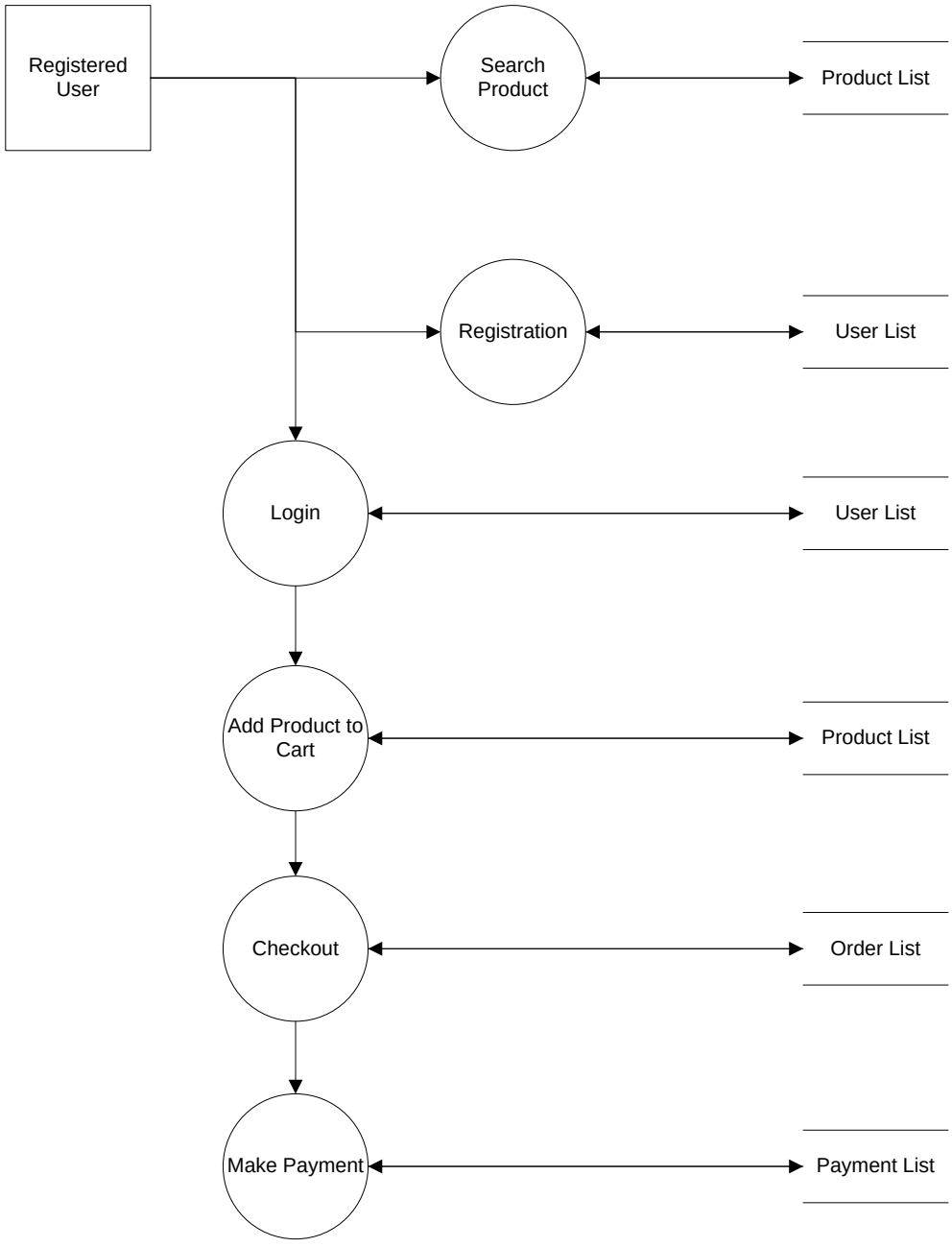
Answer:


product_category
id int
name varchar
desc text
created_at timestamp
modified_at timestamp
deleted_at timestamp
product
id int
name varchar
desc text
SKU int
category_id int
inventory_id int
price decimal
discount_id int
created_at timestamp
modified_at timestamp
deleted_at timestamp
user
id int
username varchar
password varchar
first_name varchar
last_name varchar
telephone varchar
created_at timestamp
modified_at timestamp
user_address
id int
user_id int
address_line1 varchar
address_line2 varchar
city varchar
postal_code varchar
country varchar
telephone varchar
mobile varchar
product_inventory
id int
quantity int
created_at timestamp
modified_at timestamp
deleted_at timestamp
shopping_session
id int
user_id int
total decimal
created_at timestamp
modified_at timestamp
user_payment
id int
user_id int
payment_type varchar
provider varchar
account_no int
expiry date
discount
id int
name varchar
desc text
discount_percent decimal
active boolean
created_at timestamp
modified_at timestamp
deleted_at timestamp
order_details
id int
user_id int
total decimal
payment_id int
created_at timestamp
modified_at timestamp
cart_item
id int
session_id int
product_id int
quantity int
created_at timestamp
modified_at timestamp
order_items
id int
order_id int
product_id int
quantity int
created_at timestamp
modified_at timestamp
payment_details
id int
order_id int
amount decimal
provider varchar
status varchar
created_at timestamp
modified_at timestamp

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:

Steps to Handle Change Requests

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 (e.g., potential non-compliance if the change is not implemented on time).
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 (in this case, the committee formed by Mr. Henry, Mr. Pandu, and Mr. Dooku).
    - 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:

Business Analyst Response:

- Acknowledge the Request: Confirm that you understand Ben and Kevin's requirements for selling crops and the auction system, ensuring clear communication.
- Feasibility Assessment: Collaborate with the project manager (Mr. Vandanam), development team (Ms. Juhi and team), and testers (Mr. Jason and Ms. Alekya) to determine the technical feasibility and effort required to implement these features.
- Impact on Project Scope, Budget, and Timeline: Evaluate how this enhancement would affect the overall project scope, budget, and schedule.
    - ❖ Scope: Identify how the additional features would alter the project's deliverables.
    - ❖ Budget: Assess whether additional resources or funding will be needed.
    - ❖ Timeline: Estimate how much time it will take to design, develop, and test the new features, and whether it will delay the project.
- Document the Enhancement: Prepare formal documentation detailing the requested enhancements, their business value, and any potential risks. This ensures transparency and allows for a thorough assessment of the proposal.
- Present Findings to Stakeholders: Share the analysis with Mr. Henry and the project committee for approval. If the stakeholders agree, the enhancement can be added to the project plan as a new set of features

Why This is an Enhancement:

- Introduction of New Features: The ability for farmers to sell crops and use an auction system were not part of the original requirements, which focused on purchasing agricultural products like fertilizers, seeds, and pesticides.
- Expansion of Scope: These new functionalities expand the application’s scope beyond the initial purpose, adding new business processes (selling crops, auctions) to the platform.
- No Existing Feature Changes: The current functionality remains unchanged, and these requests are for additional capabilities rather than modifications to what has already been planned.

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 roleof

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:

UAT Process

1. Planning the UAT Phase:

- **Objective**: The goal of UAT is to confirm that the system meets the business requirements outlined during the requirement gathering phase. It is the final validation before the product goes live.
- **Key Activities**:
    - Prepare a UAT plan that includes the scope, timeline, and key activities.
    - Define roles and responsibilities for UAT, including client-side testers (typically the business users such as Peter, Kevin, Ben, and their representatives) and the internal development/test teams.
    - Establish communication channels between stakeholders for issue tracking and resolution.
- **Deliverables**: UAT plan, timeline, and list of client-side testers.

2. Designing UAT Test Cases:

- **Objective**: Ensure all business scenarios are tested by creating UAT test cases based on the functional and non-functional requirements.
- **Key Activities**:
    - Collaborate with stakeholders to identify **key business processes** that need to be tested.
    - Design **UAT test scripts** that cover real-world scenarios such as product selection, payment processing, order delivery tracking, etc.
    - Ensure that UAT cases are user-friendly, simple, and focus on the end-user experience, as the target users (farmers and manufacturers) may not have advanced technical expertise.

- **Deliverables**: UAT test cases and scenarios.

3. Executing the UAT:

- **UAT Testers**: Engage Peter, Kevin, Ben, and other farmers or business users identified as UAT testers.
- **Key Activities**:
    - Conduct a **UAT kickoff meeting** to brief the testers about the system, explain how to run test cases, and set expectations.
    - Provide access to the testing environment for the UAT testers.
    - **Monitor** the testing process by collecting feedback and tracking test case results in real-time.
    - Use a bug-tracking tool to log any **issues or defects** reported by the UAT testers.
- **Deliverables**: UAT test results, defect log.

4. Bug Fixing and Iteration:

- **Objective**: Address any issues or bugs found during UAT.
- **Key Activities**:
    - Share all reported defects with the development team (Ms. Juhi, Mr. Teyson, Ms. Lucie, Mr. Tucker, Mr. Bravo) for quick resolution.
    - Prioritize bugs based on severity (e.g., critical, major, minor) and ensure that critical issues are fixed before final acceptance.
    - Communicate bug fixes to UAT testers and conduct **retesting** to confirm that issues have been resolved.
- **Deliverables**: Updated defect log with resolved statuses.

5. Final UAT Sign-Off:

- **Objective**: Obtain formal approval from the client that the system is ready to go live.
- **Key Activities**:
    - After all defects are resolved and retested, prepare a **UAT completion report** summarizing the results.
    - Arrange a **sign-off meeting** with the client (Mr. Henry, Peter, Kevin, and Ben), presenting them with the final UAT results and any outstanding issues (if minor).
    - **UAT Sign-Off**: Obtain formal approval from the client, acknowledging that the product has met their requirements and is ready for deployment.
- **Deliverables**: UAT sign-off document.

Project Closure:

- **Objective**: Complete the project formally and hand over the product to the client.
- **Key Activities**:
    - Conduct a **post-UAT deployment** where the product is moved to the live environment by the development and network teams (Mr. Mike and John).
    - Prepare **handover documentation** including user manuals, technical support documentation, and training material for the client's internal teams.
    - Organize a **project closure meeting** with key stakeholders to officially close the project. This involves reviewing project outcomes, lessons learned, and handing over all project deliverables.
    - Prepare a **project closure report** documenting the project's success, key takeaways, and any remaining support requirements.
- **Deliverables**: Handover documentation, project closure report, and final project sign-off

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:

1. **Project Overview**: A summary of the project objectives, scope, stakeholders, and timeline, outlining the purpose and context of the project.
2. **Achievements**: A detailed list of key milestones and deliverables that were successfully completed, highlighting the project's contributions to stakeholders.
3. **Lessons Learned**: Insights and experiences gained throughout the project, including successes and areas for improvement, to inform future projects.
4. **Quality Assurance**: An overview of the quality control measures implemented, including testing results and adherence to quality standards to ensure the final product meets client expectations.
5. **Resource Utilization**: A summary of the resources (human, financial, and material) used throughout the project, assessing their efficiency and effectiveness.
6. **Risk Management**: A review of identified risks and their management throughout the project, including mitigation strategies and their outcomes.
7. **Challenges**: A summary of the key challenges faced during the project, detailing how they were addressed and their impact on the project timeline and deliverables.

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	