**Question 1. Identify Business Process Model for Online Agriculture – [Goal,Inputs,Resources,Outputs,Activities,Value created to the end customer].**

**Answer1**. The BPM stands for Business Process Model, which displays the steps that must be taken to serve the business and its clients effectively. In this post, we shall discuss in detail the BPM for Online Agriculture Store connecting farmers to the manufactiures for agriculture products.

**● Goal**

Objective: To provide an online platform that allows farmers in remote areas to buy agricultural products like seeds, fertilizers, and pesticides.

Goal: A competitive user platform to connect farmers and suppliers (manufacturers) and deliver products to them at their location.

**● Inputs**

**Farmer Information:**

Contact information (name, email/farm name, etc.)

Seeds, fertilizers and pesticides you prefer

Shipping details (address, location, Contact Number)

Manufacturers product description:

**– Product details** (kind, pricing, and availability)

Product descriptions (instructions for use, benefits)

Stock and inventory data

**Payment Information:**

Payment options for Farmer (Credit/debit card, ecommerce wallets, cash on delivery)

**Order Management System:**

Data on the products and quantities that farmers ordered and where they are being shipped to Title

**Logistics and Delivery Information:**

Shipping of details (courier or local delivery team)

Delivery schedule.

**● Resources**

**Technology Platform:**

Web Site and/or mobile application (user friendly interface for farmers to search and order products).

Backend infrastructure (servers, databases, payment gateways)

Processing systems (Farmers are able to have secure and reliable processing)

**Manufacturers/Suppliers:**

Suppliers of fertilizer, seed and pesticides providing products.

**Logistics Partners:**

Delivery crews or courier services that moves the products to the farmers

**Customer Support Team:**

Assist with troubleshooting, orders, and returns

**IT Team:**

Train Developers, testers, system admin, database admin to maintain the online store platform.

**● Outputs**

**Product Listings:**

Farmers can browse at the online platform to see the available seeds, fertilizers, and pesticides.

**Orders/Requests:**

Orders farmers make for products that include information such as quantity required, address for shipping, and payment.

**Delivery Confirmation:**

For farmers, the tracking of products delivery

**Customer Feedback:**

Farmers’ service feedback, as well as product ratings and reviews.

**● Activities**

Thefirst step is setting up your product listing upload.

The platforms allow manufacturers to put in the details of their products (seeds, fertilizers, pesticides) alongside with its description, price and availability.

**Step 2: Browse and select a farmer**

Farmers log on to the platform and can view the product listings and select based on what the farmers needs (whether is it seeds, fertilizers or pesticides).

**Step 3: Order Placement**

Farmers order products by adding product to the cart, giving vise details and payment.

**Step 4: Payment processing**

The system initiates payment through an integrated payment portal (like secure processing of credit/debit cards, online wallets).

**Step 5: Order Confirmation**

After paying, the farmer and the supplier get an order confirmation (along with an invoice).

**Step 6: Order Fulfillment**

They send the order from the manufacturer into the farmer. The shipment is arranged with a logistics partner.

**Step 7: Product Delivery**

The products are delivered to farmer’s place as per delivery schedule.

**Step 8: Post-delivery Support**

If there are inquiries, feedback, or returns needed, customer support will handle them.

**Step 9: Feedback Collection**

Once the product is delivered the platform helps the farmers to rate and review the products and delivery.

**● Value created to the end customer**

**Convenience:** Farmers do not need to travel to far-off stores as they can purchase fertilizers, seeds, and pesticides from the comfort of their homes.

**Cost Savings:** Manufacturers are selling their products to farmers directly, and thus at a better price than with the middleman involved.

**Wide Selection:** A marketplace gives farmers the opportunity to view a wide array of products, compare prices, and pick the ones that best suit them.

**Timely Delivery:**Farmers get their product right at their doorstep, thus the probability of product shortage decreases and seeing as farmers are no different from any of us, having the materials they need when they need them is a very helpful thing.

**Easy Availability of Good Products:** Farmers can buy quality seeds, fertilizers and pesticides from trusted manufacturers for better yield.

**Customer Support** **:** An active support team helps farmers with order-related problems, product information, and returns thereby creating a seamless experience.

**Time and effort:** Agriculture merchants save time and work as they no longer need to visit physical shops. Moreover, timely deliveries allow for the uninterrupted management of farm operations.

**Question 2. 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.**

**Answer2**. These would be the factors in each category for Mr. Karthik to consider if he were going to do an effective SWOT analysis before taking the project. SWOT would mean assessing how viable or non-viable the project would be regarding the goals and capabilities of APT IT SOLUTIONS, apart from risks and opportunities involved.

**Strengths:**These are the internal strengths that APT IT SOLUTIONS holds, which will help in the successful completion of the project.

**Experienced Team:**
The team has all the expertise: Project Manager (Mr. Vandanam), Senior Java Developers (Ms. Juhi), and other skilled developers and network/database administrators.
Availability of testers (Mr. Jason, Ms. Alekya) for complete quality assurance.
Clear Business Vision:

Mr. Henry's vision for the project is clear and impactful, focused on solving a real-world problem faced by farmers, which provides intrinsic motivation to the team.
CSR Initiative:
As a CSR initiative, it has a positive social impact and can improve the company's reputation and goodwill.
Budget and Resources:
The budget of 2 Crores INR is suitable for the scale of the project, and there are enough resources to develop and make time for the development.
Supportive Stakeholders:

Strong support from Mr. Henry, Mr. Pandu, and Mr. Dooku, who have vested interest in the project.
Established reputation of APT IT SOLUTIONS:

The company already has talent pool ready and a good repute in the IT solution sector that can be utilized for delivering the project effectively.

**Weaknesses:**These are the internal limitations or constraints that might impact the smooth implementation of the project.

**Lack of Experience in Agriculture Domain:**The team would not have experience directly related to the agriculture sector and hence could be handicapped by lack of experience to understand farmers' unique needs and requirements.

**Technical Complexity:**This project would be constructing an e-commerce site, requiring it to deal with inventory management, payment processing, and communication between manufacturers and farmers.

Farmers in remote areas may not be exposed to much technology, so there may be a learning curve for them, especially with a mobile/web-based platform.

**Integration with Manufacturers:**Coordinating and integrating multiple manufacturers to list their products on the platform might pose logistical and technical challenges.

**Support and Maintenance:**
The ongoing maintenance and customer support after the launch could be resource-intensive, especially in remote areas where internet connectivity issues might arise.

**Opportunities:** Market expansion, partnerships, digital transformation in agriculture, support from governments/NGOs, positive brand recognition.

**Threats:** Competition, connectivity issues, supply chain challenges, regulatory hurdles, technological limitations, farmer resistance, economic volatility.
This SWOT analysis will help Mr. Karthik assess the project's feasibility, weigh the risks against potential rewards, and decide whether to move forward with the project.

**Question3. 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.**

Answer3. For the feasibility study in the implementation of the project with the help of Java technology, Mr. Karthik must focus on a number of critical areas of Hardware, Software, Trained Resources, Budget, and Time Frame. All of them are of importance for analyzing the project's feasibility and determining its potential success considering the imposed restrictions. Points to be considered are given below under each category:

1. Hardware (Infrastructure) Feasibility:

The hardware infrastructure must be capable of supporting the application, particularly if it will be used by farmers in far-flung places with limited resources.

Server Requirements

Determine the server requirements to host the application (cloud servers or on-premise servers). Will the application be hosted on a cloud service provider such as AWS, Google Cloud, or Microsoft Azure, or will it need dedicated servers for high availability and performance?
Storage requirements for the database (products, user details, transactions, etc.)
Scalability

The hardware will be able to support scalability, in case of growth in platform and serves a larger number of users, which are farmers and manufacturers over time.
Network Infrastructure

Considering the farmers will be using the app in remote areas, the network infrastructure should be strong enough to carry the load, and should also be able to handle connectivity disruptions.
Should there be any considerations for offline functionality, such as caching product details on the app?
Backup & Redundancy:

Plans for backups of critical data and system redundancy to ensure availability even during hardware failures or maintenance.

2. Software (Technology Stack) Feasibility:
Java is a good choice for building robust and scalable applications, but Mr. Karthik will have to ensure that the right software and technologies are used to support the application.

Java Technology Stack:

Java (Core & EE): Java is a good choice for web application development. The team can use Spring Framework (Spring Boot, Spring MVC) for the backend, which makes it easier to create microservices and REST APIs.
Database: For transactional data, such as users, products, and orders, the team can use Java-based relational databases like MySQL, PostgreSQL, or Oracle.
Frontend: JavaScript technologies such as React.js, Angular, or Vue.js can be used for the frontend, communicating with the backend via REST APIs.
Frameworks & Libraries: Java-based frameworks like Hibernate for ORM, Spring Security for user authentication, and Spring Data for database integration.
Mobile Application (if applicable):

Java for Android: If the intended platform is mobile, Android apps may be built with Java or Kotlin. This ensures that the app will reach an expanded audience of farmers who utilize smartphones.
Connecting to Third-party Systems:

Analyze whether this application can integrate with third-party services, including payment gateways and logistics companies that would enable tracking the delivery of packages using Java APIs.
Testing Frameworks:

There are a lot of tools, including JUnit, TestNG, and Mockito for unit and integration testing available with Java.
Security:

Ensure secure transactions by implementing SSL/TLS encryption and using OAuth or JWT for user authentication.
Compliance:

Consider legal or regulatory software requirements (especially in the agricultural sector), and ensure compliance with local regulations.

3. Trained Resources (Human Resources):
It is essential to ensure that the project has access to adequately trained and skilled resources for the successful completion of the project.

Availability of Java Developers:

Already have such strong team members in developers like Ms. Juhi (Senior Java Developer), Mr. Teyson, Ms. Lucie, Mr. Tucker, and Mr. Bravo. Assess whether they have considerable experience with big projects or a specific technology set like cloud infrastructure or mobile applications.
Team Skills and Knowledge:
Java developers should be aware of at least one or more of the web frameworks developed on Java. Such as Spring Boot and Spring MVC. Along with that database management using SQL/NoSQL.
UX/UI Designers and Frontend Developers must be skilled in creating user-friendly designs suitable for farmers who might not be tech-savvy.
Database Administrators (e.g., John) should be skilled in designing and optimizing relational databases.
Project Management and Coordination:

The Project Manager (Mr. Vandanam) and Project Coordinator (Mr. Dooku) must have experience in managing large-scale, multi-faceted projects.
Testing Team:

The testing team (Mr. Jason, Ms. Alekya) should be experienced in testing Java applications and functional, integration, and performance testing.
Training & Knowledge Transfer:

Consider the resources needed to train stakeholders (farmers) on how to use the platform and to ensure internal resources are well-versed in maintaining and supporting the system post-launch.

4. Budget Feasibility:
A feasibility study involves important aspects that may include a budget. For example, the 2 Crores INR offered as budget; Mr. Karthik would have to identify whether that's sufficient to scale and scope out the project or not.

Development Costs

• Developer Costs – in-house/outsourced- this includes the salary of developers UI/UX, testers, project managers etcetera, factor in salaries/contractor rates
Hardware and Software Infrastructure

Costs of cloud hosting, servers, storage, database management, and third-party services like payment gateways and delivery services, etc.
Licensing Costs:
If there are proprietary software licenses needed for things like database management or security tools, add these costs in
Training and Support:
Trainings and support for the post-launch period. The farmers, who are usually scattered in rural areas, would need continuous support for their crop.

Contingency Fund:

Always provide for a contingency to address unexpected problems, scope changes, or delays (e.g., 10-20% of the total budget).

5. Time Frame Feasibility:
The project needs to be delivered within 18 months, but the work needs to be divided into smaller phases to determine if this is feasible.

Development Phases:

Requirement Gathering & Analysis (1-2 months).
System Design & Architecture (2-3 months).
Development (10-12 months for both front-end and back-end, including mobile app development).
Testing: 2-3 months for unit, integration, and user acceptance testing
Deployment & Launch: 1-2 months for final testing, bug fixes, and deployment.
Buffer Time:

Add a buffer to the schedule for delays, such as technical issues, vendor slippage, or problems in integration.
Training & Post-launch Support:

There will be some time taken post-development to train the farmers and provide ongoing support for issues arising after the launch.
Conclusion:
In the feasibility study, Mr. Karthik needs to review whether the project is technically feasible with existing resources, technologies, budget, and time. With proper consideration of the above aspects, he will establish the potential hurdles along the way and ensure that the project is technically, financially, and logistically viable.

**Question4. 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**

**Answer4.** The following is a detailed breakdown of the points to be highlighted to him in order to prepare a Gap Analysis that compares the AS-IS (existing process) and the TO-BE (future process) for the proposed online agriculture product store, which will help Mr. Henry understand how the new system will work to improve the lives of the farmers and the efficiency of procurement of agricultural products.

**1. Procurement of Products**

AS-IS (Current Process)

Manual Procurement: The process requires the farmers to visit their local suppliers directly or get hold of them via telephone or personal communication for procurement of fertilizers, seeds, and pesticides.

Limited Variety: Availability is bound to the list of products supplied by local vendors. Limited product choices, ranging from brand variety to quality, best suited to individual crops are accessible to farmers.

Inefficient Purchase Process: The ordering process is slow and inefficient. Farmers may need to repeat the process if the required product is not in stock or the wrong product is ordered.

No Centralized Platform: There is no centralized platform where all agricultural products can be accessed from various suppliers in one place, leading to inefficiency and lack of transparency.

TO-BE (Future Process)

Online Procurement: Farmers can browse, select, and order fertilizers, seeds, and pesticides from a variety of manufacturers and suppliers through an online platform.

Extensive Product Range: The platform offers a large range of products from multiple suppliers, allowing farmers to select the best products suited to their needs, such as fertilizers specific to different types of soil or seeds for specific crops.

Streamlined Ordering Process: Farmers can make an order directly to a manufacturer or supplier with product description, price and availability all presented in just one click.

All-in-One Gateway: This shall be the centralized location of viewing and purchase the available agricultural products for the farmer.

**2. Communication with Suppliers**

AS-IS (Current Process)

Indirect Communication: Farmers rely on local suppliers or dealers for communication with manufacturers, which often results in delayed or inaccurate information about product availability, quality, and pricing.

Lack of Direct Access: Farmers cannot directly communicate with product manufacturers or inquire about specific products, leading to misinformation or unclear understanding of product suitability.

Communication Delays: Information related to products, delivery schedules, or product specifications usually takes a lot of time since there is no quick and standardized channel of communication.

TO-BE (Future Process)

Direct Communication with Suppliers: Farmers can directly interact with manufacturers to get real-time answers to the queries related to products, delivery timelines, and many more.

Access to Instant Information: Farmers will have access to product information instantly (prices, quality, compatibility with crops) without the waiting time for third-party communication.

Effective Communication Channels: Automated alerts, chat support, and customer service ensure quick and effective communication with farmers, reducing delay and misunderstandings.

**3. Product Delivery and Logistics**

AS-IS (Current Process)

Inconsistent Delivery Time: Farmers may not be able to rely on the delivery schedule. Products might arrive late and cause disruptions in farm operations.

Poor Delivery Coverage: Suppliers may not cover remote areas, which leads to delayed or no delivery of products.

Uncoordinated Logistics: Delivery and transportation of agricultural products are not optimized, which can result in high costs, delays, and logistical inefficiencies.

TO-BE (Future Process)

Trackable and Timely Delivery: The platform will provide reliable and trackable delivery systems, providing real-time updates on the delivery status of each order.

Nationwide Delivery Coverage: Farmers in the most remote locations can now be reached with timely deliveries through an expanded network of suppliers and efficient logistics systems.

Optimized Logistics: The platform will partner with logistics providers to streamline deliveries, optimize routes, and reduce costs, ensuring quicker and more cost-effective product delivery.

**4. Product Availability and Inventory Management**

AS-IS (Current Process)

Inventories are also inconsistent, in the sense that when the farmer tries to get any particular item in, that product is unavailable.

The manual method of maintaining inventories used by suppliers increases the chances of making mistakes in the restocking process of a high-demand item.

Farmers lack visibility as they do not know when an item goes out of stock, thereby increasing uncertainty and lost opportunities. TO-BE

Real-Time Inventory Updates: The platform will give real-time updates on the availability of products, and farmers will be able to see which items are in stock and ready for delivery.

Automated Inventory Management: Manufacturers and suppliers can update product availability automatically, ensuring that accurate stock information is always available to farmers.

Advanced Notifications: The platform will notify farmers when products are low in stock or about to be restocked, improving planning and reducing purchasing delays.

**5. Payment and Transaction Process**

AS-IS (Existing Process)

Limited Payment Method: Payments normally occur through cash on delivery and bank transfers which are inconveniently slow, and most farmers in far-flung rural areas face.

Lack of Payment Security: Payment transaction lacks the needed security features, thus exposing farmer's financial information to fraud possibilities.

No Payment Flexibility: The farmers may not be able to pay for larger orders in installments, which may limit their ability to buy larger quantities of products.

TO-BE (Future Process)

Multiple Payment Options: The platform will support various payment methods, including online payments (credit/debit cards, UPI, wallets), cash on delivery, and possibly installment-based payments, making it more flexible and accessible for farmers.

Secure Payment System: All transactions on the platform will be protected by SSL encryption, and this will safeguard the financial information of farmers while reducing the risks of fraud.

Payment Flexibility: Farmers can choose payment methods that are flexible according to their financial situation. For example, a farmer can choose to pay for a large order in installments.

**6. User Experience and Access**

AS-IS (Current Process)

Limited Accessibility: The internet connection may not be reliable, and the farmers may not be technologically literate, especially in remote areas.

Complex and Time-Consuming Process: The traditional procurement process is complex and time-consuming, involving multiple visits, phone calls, and negotiations.

No Support for Different Devices: The current system is not optimized for mobile devices, which are increasingly used by farmers.

TO-BE (Future Process)

Mobile-Friendly Access: The system will be mobile and web-friendly so that farmers using simple smartphones will be able to access the system.

Simple User Interface: The system will be user-friendly with an intuitive interface guiding the farmer in the product selection, ordering, and payment process, hence a reduced learning curve.

Training and Support: Online tutorials, FAQs, and customer support would be available for farmers to use the platform despite their limited technological knowledge.

**7. Support and Customer Service**

AS-IS (Current Process)

Limited Support: Support is very limited to only local suppliers and dealers, who sometimes are not easily accessible or not reachable.

Inconsistent Quality of Support: The quality of customer support varies, with no formal channels for resolving issues related to products or orders.

TO-BE (Future Process)

24/7 Customer Support: The platform will offer dedicated customer support for farmers to resolve any issues related to product queries, orders, or delivery.

Multiple Support Channels: Support will be available through live chat, email, and phone, ensuring quick and effective issue resolution.

Conclusion:

The Gap Analysis will clearly show that the online agriculture product store brings a lot of improvements to the process of procurement of agricultural products by farmers. In the TO-BE process, most of the inefficiencies and communication and logistics problems in the AS-IS process will be addressed. The project will empower the farmers by offering an accessible, transparent, and efficient platform for buying agricultural products; it will also reduce the cost of operations and increase their productivity.

This analysis would help Mr. Karthik show the transformation impact the proposed system would create in agriculture, aligning with Mr. Henry's goal of helping the farmers and addressing the challenges in the AS-IS process.

**Question5.** List down different risk factors that may be involved (BA Risks And process/Project Risks)

**Answer5**. There will be many risk factors involved in the implementation of a project like Online Agriculture Product Store at different stages of a project. All these risks can be categorized into Business Analyst (BA) Risks and Process/Project Risks. This is a comprehensive list of the risks involved in the project.

A. Business Analyst (BA) Risks

Incomplete Requirements

Ambiguous Requirements

Risk: The business requirements gathered may be incomplete, unclear, or misinterpreted, leading to gaps in the final system.

Mitigation: Ensure thorough stakeholder engagement, conduct detailed workshops, and employ clear documentation practices.

Stakeholder Misalignment

Risk: Different stakeholders (e.g., farmers, manufacturers, Mr. Henry, project sponsors) may have conflicting requirements or expectations, leading to scope changes or delays.

Mitigation: Regular communication with stakeholders to confirm and validate requirements throughout the project lifecycle.

Changing Requirements

Risk: Requirements may change during the project or new features are requested, and this may result in delays, increased costs, or project scope creep.

Mitigation: Have a formal change management process in place and ensure that all requirements are properly documented and traceable.

User Adoption Risk

Risk: Farmers are not familiar with online purchasing or find it difficult to use the platform, and thus, adoption is low.

Mitigation: Conduct user training, offer support materials, such as videos or guides, and ensure the platform has an intuitive and simple user interface.

Failure to Consider Non-Functional Requirements

Risk: The BA fails to give adequate attention to non-functional requirements (performance, security, scalability) resulting in a less than optimal solution.

Mitigation: Closely work with technical teams to ensure non-functional requirements are well-defined and are part of the solution.

Data Privacy and Compliance

Risk: Non-compliance with data protection regulations, including those on GDPR, local data protection laws, during the collection of sensitive information like farmers' payment details.

Mitigation: Work together with legal and compliance teams to ensure the application adheres to all necessary laws and implement proper data handling in a secure way.

Incorrect Feature Prioritization

Risk: The priority of features can be wrongly given as the business requirements are either partially or wrongly written.

Mitigation: Methods such as MoSCoW (Must-have, Should-have, Could-have, Won't-have) prioritization help ensure that critical features are developed first.

Communication Gaps

Risk: The analyst may miscommunicate with stakeholders and the development team, and the requirements would be misunderstood and the wrong thing could be implemented.

Mitigation: Clear and structured communication channels in place, regular meetings with all stakeholders, and reviews to ensure smooth and efficient operations.

B. Process/Project Risks

Scope Creep

Risk: The scope of the project may expand beyond the original plan due to frequent addition of new features or changes in requirements, leading to delays and budget overruns.

Mitigation: Strong project scope definition in the early stages, therefore a good change control process will prevent scope creep.

Project Delays

Risk: Any delay in any phase of the project, such as development, testing, or deployment, may affect the overall timeline, which is critical to meeting the 18-month deadline.

Mitigation: Develop a realistic project schedule, use agile methodologies for iterative progress, and monitor project timelines closely.

Insufficient Resource Allocation

Risk: Inadequate skilled resources or improper allocation of team members may cause bottlenecks and delays.

Mitigation: Proper resource planning, skilled human resources devoted for key tasks, and measurement of workloads within the teams at specific intervals

Technology Risks

Risk: Wrong technology stack and unforeseen technical problems (integration and performance issues)

Mitigation: Technical feasibility study in detail, contingency technologies, technical experts in the process to be involved at the time of key decision-making.

Quality Assurance Issues

Risk: A release without sufficient or proper QA might increase the chance of bugs or poor performance to be released to users, and thus result in a bad user experience.

Mitigation: Implement comprehensive testing procedures including unit testing, integration testing, user acceptance testing, and load testing to ensure quality.

Vendor and Supplier Risks

Risk: If third-party vendors or suppliers are used in the project (e.g., logistics companies, payment gateways), failure on their part would lead to project delays, security risks, or operational disruptions.

Mitigations: An effective way to ensure vendor suitability is through vetting third-party vendors, establishing clear contracts and SLAs, and having a backup plan if the third-party vendors fail.

Security Risks

Risk: Online, and managing sensitive data (payment information, personal details), it is prone to hacking, fraud, or data breaches.

Mitigation: Implement strong security with SSL encryption, data encryption, firewalls, and reliable authentication mechanisms. Constant security audits and compliance checks should be performed.

Integration Risks

Risk: The new platform has to be integrated with the existing systems (e.g., payment gateways, logistics platforms, supplier databases). Technical challenges or incompatibilities could derail the project.

Mitigation: Conduct a thorough systems integration analysis, create detailed API specifications, and conduct integration testing early in the project.

Budget Overruns

Risk: There is a risk of exceeding the allocated budget due to unforeseen challenges, additional resources, or scope changes.

Mitigation: Develop a detailed budget, track costs closely throughout the project, and have contingency funds in place for any unexpected expenses.

Regulatory Compliance Issues

Risk: Failure to comply with government regulations on agricultural products, online commerce, or data protection may result in legal consequences or delays.

Mitigation: Work closely with legal and compliance teams to ensure that the project adheres to all relevant laws and regulations.

Change Management Risks

Risk: Farmers, employees, or suppliers who become accustomed to the status quo of handling paper manually may resist the change and not adopt the new system.

Mitigation: A change management plan, with regular communication, training, and engagement of stakeholders to ensure an easy transition to the new platform.

Infrastructure and Scalability Risks

Risk: The scaling is difficult or handling extensive traffic in the platform because of extensive users or products.

Mitigation: Plan for scalability from the outset by using cloud-based infrastructure, ensuring the system can handle growth without compromising performance.

Post-Launch Support and Maintenance

Risk: After the system is launched, issues like user complaints, bugs, or system downtimes may arise, affecting user satisfaction and system performance.

Mitigation: Set up a robust post-launch support plan, with a dedicated team for monitoring, troubleshooting, and quickly addressing any issues that arise.

Cultural and Regional Barriers

Risk: Farmers in such remote areas have different levels of digital literacy and may not access the required smartphones and the internet, so they may not be able to use the platform.

Mitigation: The simplicity of the design of the platform; providing offline capabilities, and offering local language training support.

Conclusion

BA risks and process/project risks will be carefully monitored and managed over the project lifecycle. Mr. Karthik, in advance of such risks being identified, may take appropriate preventive measures to control issues arising to make the Online Agriculture Product Store successful. Adequate planning, clear communication, and continuous monitoring would be of great importance for such risks, so the final desired outcome is successfully met.

**Question6. Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take Decisions and Who are the influencers**

**Answer6.** In any project, performing a Stakeholder Analysis using a RACI Matrix (Responsible, Accountable, Consulted, and Informed) is an essential step in identifying key stakeholders, their roles, and responsibilities, as well as understanding who will take decisions and who will influence those decisions.

Here’s how we can build the RACI Matrix for the Online Agriculture Product Store project, based on the provided stakeholders:

1. Key Stakeholders Involved:

1. Mr. Henry (Founder and CSR Initiative Sponsor)
2. Mr. Pandu (Financial Head - SOONY Company)
3. Mr. Dooku (Project Coordinator - SOONY Company)
4. Peter (Farmer/Stakeholder)
5. Kevin (Farmer/Stakeholder)
6. Ben (Farmer/Stakeholder)
7. Mr. Karthik (Delivery Head - APT IT SOLUTIONS)
8. Mr. Vandanam (Project Manager - APT IT SOLUTIONS)
9. Ms. Juhi (Senior Java Developer)
10. Mr. Teyson, Ms. Lucie, Mr. Tucker, Mr. Bravo (Java Developers)
11. Mr. Mike (Network Admin - APT IT SOLUTIONS)
12. Mr. John (DB Admin - APT IT SOLUTIONS)
13. Mr. Jason, Ms. Alekya (Testers - APT IT SOLUTIONS)

2. RACI Matrix Definitions:

* Responsible (R): The person(s) responsible for completing the task or making the decision.
* Accountable (A): The person who is ultimately accountable for the completion of the task and is the decision-maker.
* Consulted (C): The people who need to be consulted and whose opinions are sought for the task.
* Informed (I): The people who need to be kept informed of progress or decisions but do not actively contribute to the task.

3. RACI Matrix for Online Agriculture Product Store Project

| Task/Decision | Mr. Henry | Mr. Pandu | Mr. Dooku | Peter | Kevin | Ben | Mr. Karthik | Mr. Vandanam | Ms. Juhi | Mr. Teyson, Ms. Lucie, Mr. Tucker, Mr. Bravo | Mr. Mike | Mr. John | Mr. Jason, Ms. Alekya |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Project Funding Approval | I | A | C | I | I | I | C | I | I | I | I | I | I |
| Defining Project Scope and Requirements | A | C | C | R | R | R | C | C | C | I | I | I | I |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Technology Stack Decision | C | C | C | I | I | I | A | C | R | C | C | C | I |
| Design and Architecture Approval | C | C | C | I | I | I | A | R | R | C | C | C | I |
| Platform Development and Coding | I | I | I | I | I | I | C | C | R | R | C | C | I |
| Testing and Quality Assurance | I | I | I | I | I | I | C | C | C | C | I | I | R |
| Product Launch | A | I | I | I | I | I | C | C | C | C | C | C | I |
| Marketing and Customer Outreach | C | I | I | C | C | C | C | I | I | I | I | I | I |
| Sales and Customer Support | I | I | I | C | C | C | C | I | I | I | I | I | I |
| Ongoing Maintenance and Updates | I | I | I | C | C | C | A | R | R | R | C | C | I |

Key Insights from the RACI Matrix:

1. Decision-Makers (Accountable):
	* Mr. Pandu (Financial Head) is the decision-maker for funding approvals and overall budget management.
	* Mr. Karthik (Delivery Head) is accountable for key technical decisions such as technology stack and overseeing the project's development process.
	* Mr. Vandanam (Project Manager) has significant accountability for project scope and platform design approval.
2. Responsible Stakeholders:
	* Peter, Kevin, and Ben (Farmers/Stakeholders) are responsible for defining the requirements and feedback on what products and features are essential for the platform.
	* Ms. Juhi (Senior Java Developer) and Mr. Vandanam (Project Manager) are responsible for the development and coding tasks as well as the design and architecture of the platform.
3. Consulted Stakeholders (Influencers):
	* Mr. Henry (Founder and CSR Sponsor), while not directly responsible for development tasks, is consulted for major decisions like project scope and product launch.
	* Mr. Dooku (Project Coordinator) is frequently consulted during the scope and requirement definition process.
	* Mr. Mike (Network Admin) and Mr. John (DB Admin) are consulted on platform infrastructure, security, and database management.
4. Informed Stakeholders:
	* Stakeholders such as Peter, Kevin, and Ben (Farmers), Mr. Pandu (Financial Head), and Mr. Dooku (Project Coordinator) need to be kept informed throughout the process but are not directly responsible for project execution.
	* Testers (Mr. Jason, Ms. Alekya) are kept informed about progress and testing schedules but do not have decision-making authority.

Conclusion:

* Mr. Karthik and Mr. Vandanam are the key decision-makers (Accountable) for the technical decisions and overall project execution.
* Mr. Pandu holds the primary accountable role for managing the financial aspects and budget.
* Peter, Kevin, and Ben are key consulted influencers as their requirements will directly shape the platform.
* Mr. Henry is an important influencer and approver for high-level decisions related to the scope, budget, and launch of the project.

By ensuring clear delineation of responsibilities and keeping key stakeholders informed, the project can move smoothly and address potential challenges efficiently

**Question7. Question7.Help Mr Karthik to prepare a business case document**

**Answer7.** A Business Case document will be a well-structured method to present the need and justification to start a project. It also emphasizes the advantages, risks, costs, and impact of a project. The following is an elaborate outline and content for the Business Case document for the Online Agriculture Product Store project that Mr. Karthik can use to present before Mr. Henry.

Business Case Document: Online Agriculture Product Store

1. Executive Summary

This section presents a summary of the business case. It will give a fast overview of the project, the purpose, and the expected outcome.

Project Title: Online Agriculture Product Store

Project Overview:

The Online Agriculture Product Store was designed to improve the accessibility and procurement of fertilizer, seeds, and pesticides in remote areas by a farmer directly through the manufacturer's websites. This should bridge the gap between farmers and product suppliers as it simplifies procurement processes while reducing costs as well as ensuring efficiency.

Critical Objectives.

The online application will provide simple access to farm products for direct purchase by a farmer.

Ensure farmers have more options through a variety of products from various suppliers.

Facilitate direct communication between farmers and manufacturers for faster and more accurate transactions.

Ensure an efficient logistics system for delivery to remote areas.

Provide financial transparency through secure payment options.

Expected Benefits:

Farmers will gain more efficiency in the procurement process.

Quality agricultural products will be accessed more conveniently.

Supply chain management will be streamlined.

There will be cost savings for farmers because of better pricing and bulk purchases.

Increased productivity in the agricultural sector due to timely availability of necessary products.

2. Problem Statement

This section defines the problem the project aims to solve and the need for the solution.

Current Challenges:

Inaccessibility of products: Farmers in remote areas struggle to access quality seeds, fertilizers, and pesticides.

Limited choice: Farmers often have limited options when it comes to selecting agricultural products, resulting in suboptimal choices.

Manual procurement processes: The current process of procurement is slow, inefficient, and dependent on local suppliers.

Delivery systems are unreliable: Delivery of agricultural products may be inconsistent and delayed.

Poor communication: Intermediaries are involved in communication with manufacturers, resulting in delays and misinformation.

The Need for the Project:

The Online Agriculture Product Store will offer a centralized, user-friendly platform where farmers can directly browse, order, and receive agricultural products, reducing inefficiencies and ensuring timely delivery.

3. Project Scope

This section defines the boundaries of the project, outlining what is included and excluded from the project.

In-Scope:

Development of a web-based and mobile platform for product browsing and ordering.

Product catalog integration: Display of available fertilizers, seeds, and pesticides.

Communication system that provides direct interface to farmers and manufacturers.

Payment gateway that will support safe online transaction processing.

Delivery system to monitor timely delivery in distant locations.

Support system to assist users through FAQs, helpdesk, and chat support.

Out-of-Scope:

Provision of actual physical delivery infrastructure: establishing warehouses or trucks

Involvement directly in product manufacture or farm advisories.

4. Project Goals

Measurable objectives for the project which should meet the ultimate business objectives.

Increase farmer access to a wide range of quality products.

Reduce procurement time by offering an easy-to-use platform for product orders.

Improve the availability of products in remote locations through a reliable delivery system.

Increase user adoption through an intuitive user interface with multi-language support.

Achieve financial sustainability by reducing operational costs in the long term through automation and streamlined processes.

5. Benefits and Value Proposition

This section will show the tangible and intangible benefits of the project.

Tangible Benefits:

Cost Savings: The farmers will be able to access products at competitive prices because they will be buying directly from suppliers.

Time Savings: The streamlined procurement and delivery processes will ensure that farmers focus on their farming activities rather than worrying about product availability.

Wider Reach: The platform will allow farmers in remote regions to access products that were previously unavailable or hard to find.

Intangible Benefits:

Increased Trust: Direct communication with suppliers will enhance the level of transparency and trust between farmers and manufacturers.

Sustainability: Ensuring timely availability of agricultural products will help the project to support sustainable farming practices and increased crop yields.

Value Proposition:

This project will enable farmers to achieve their potential, thereby helping them to succeed with the tools and resources needed for success, contributing to a more productive and sustainable agricultural sector.

6. Market Analysis

This chapter analyzes the market opportunity the Online Agriculture Product Store has created.

Target Customer Base:

Distant or farm located farmers are cut off with poor access to agriculture products. Agriculture suppliers manufacturers want to attain more customers so as to sale direct to farm producers.

Market Opportunity:

Market in agriculture, in which most agriculture sectors operate; it expands while there are still many gaps yet to fill using digital innovation.

Remote farmers are an untapped market who have increasingly become open to digital channels for the purchase of goods.

Mobile technology growth in rural areas and better internet connectivity offer a prospect for expansion in the platform

Competitive Landscape:

There are few direct competitors offering an integrated platform for purchasing agricultural products in remote areas.

Indirect competitors will be local suppliers, agricultural co-ops, and traditional marketplaces. These would not be convenient, diverse, or efficient, however, with an online platform.

7. Financial Analysis

This part goes into the cost, funding, and return on investment for this project.

Estimates

Costs:

Development Costs: 1.5 Crores Rupees (development of the software, design, testing).

Infrastructure Costs: 30 Lakhs Rupees (cost of the servers, cloud hosting, network infrastructure).

Marketing and Outreach: INR 20 Lakhs (Promotional campaigns, farmer training programs).

Operational Costs: INR 10 Lakhs a year (Customer support, maintenance).

Revenue Estimation:

The subscription fees the suppliers pay for listing their products on the website.

Transaction fee on each purchase made on the website.

Supplier commission based on sales volume.

Return on Investment Calculation:

With increased uptake and usage from farmers, it is expected that the platform would break even at 12 months of launch while making significant amounts of profit by the end of 2 to 3 years.

8. Risk Assessment and Mitigation

This section enumerates the various risks associated with the project and describes strategies to be used in controlling them.

High Risks;

Low Adoption: The farmers within the remote and inaccessible areas could be reluctant.

Mitigation ; Training, supports materials, ease of use are some of them.

Technology Infrastructure Challenges: Internet connectivity issues or technical failures can affect the accessibility of the platform.

Mitigation: Use lightweight mobile versions of the platform, ensuring functionality even with low internet bandwidth.

Security Risks: Cybersecurity threats could compromise user data and payment transactions.

Mitigation: Implement SSL encryption, secure payment gateways, and regular security audits.

Supply Chain and Logistics Issues: Delivery delays or inefficiencies could hinder customer satisfaction.

Mitigation: Establish strong logistics partnerships and implement tracking systems for transparent delivery updates.

9. Timeline and Milestones

This section outlines the project schedule, key milestones, and deadlines.

Milestone Timeline

Project Kick-off January 2025

Requirements Gathering and Analysis January - February 2025

Platform Design and Architecture March - April 2025

Development Phase May - August 2025

Testing and Quality Assurance September 2025

Launch Preparation and Marketing October 2025

Official Platform Launch November 2025

Post-launch Support December 2025 onwards

10. Conclusion

In remote areas, an Online Agriculture Product Store will make a scalable answer to all such critical problems affecting the agricultural and farming industries, as farmers have timely access to high-quality agro products along with efficiency of procurement through these platforms and shall contribute toward growing and sustainable progress in agriculture as a whole.

The project is feasible within the proposed budget of INR 2 Crores and can be delivered within 18 months. With proper planning and execution, the platform has the potential to significantly improve agricultural practices and provide a strong return on investment.

Approval and Signatures:

Mr. Henry (Sponsor): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Pandu (Financial Head): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Karthik (Delivery Head): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This document will be a reference for Mr. Karthik to present the project to Mr. Henry and obtain formal approval to proceed.

**Question8. 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 Model (Waterfall)**

**Description:** This methodology follows a linear and step-by-step approach. Each phase of development is completed before the next one begins, and it’s typically represented as a cascading flow (hence the name "Waterfall").

**Phases:** Requirements gathering → Design → Implementation → Testing → Deployment → Maintenance.

**Pros:**

Simple to understand and implement.

Clear structure and defined deliverables at each stage.

Best suited for small projects with well-defined requirements.

**Cons:**

**Rigid:** Once a phase is completed, it's difficult to go back and make changes.

Not suitable for projects where requirements might evolve over time.

Can result in significant delays if any issues are identified late in the process.

**Relevance to the Agricultural Store Project:**

If the requirements for the online store are well-defined from the start, and there’s little need for flexibility during development, a Sequential/Waterfall approach might work.

However, since the project may evolve as new needs emerge from farmers and manufacturers, this model may not be the best fit.

**2. Iterative Model**

Description: The Iterative model breaks down the project into smaller increments or iterations. Each iteration develops part of the software, and each subsequent iteration builds upon the previous one with improvements and refinements.

Phases such as design, implementation, and testing are revisited in each iteration.

**Pros:**

**Flexibility:** Changes can be implemented in each iteration based on feedback or evolving requirements.

Early versions of the product are delivered quickly, allowing for faster feedback from users.

Easier to manage risks and adapt to changes as the project progresses.

**Cons:**

Can be time-consuming due to repeated development cycles.

The overall scope may be unclear at the beginning, and continuous iteration can lead to budget overruns if not managed properly.

**Relevance to the Agricultural Store Project:**

If there’s uncertainty about certain features or if user feedback is important, the Iterative model could work well for developing the platform in stages.

This approach can be beneficial because it allows the project to adapt as new needs emerge from farmers, stakeholders, or manufacturers.

Early releases of a basic version of the store can provide early feedback, ensuring that the platform meets user expectations.

**3. Evolutionary Model**

**Description:** The Evolutionary model is a more flexible version of the Iterative model, where the system grows over time through repeated cycles of development. Each cycle produces a working version of the system, which is then refined and enhanced.

Prototyping is a common technique used in this model, where an initial version is built and iteratively enhanced based on user feedback.

**Pros:**

Provides continuous refinement, allowing the system to evolve according to user needs.

Suitable for projects with unclear or evolving requirements.

Regular user feedback ensures that the software meets the user’s needs.

**Cons:**

The continuous feedback loop can make it challenging to maintain a clear project scope.

Unclear deliverables can result in potential delays.

If not carefully managed, the project may continue evolving with no clear end in sight.

**Relevance to the Agricultural Store Project:**

Since the store will need to meet diverse needs of farmers, manufacturers, and stakeholders, and there’s potential for evolving features (e.g., new agricultural products, delivery options, etc.), the Evolutionary model could work well for continuous improvement and feature expansion.

The ability to quickly adapt based on user feedback, such as changes in product offerings or payment systems, makes this approach beneficial.

**4. Agile Model**

**Description:** The Agile methodology is an incremental and iterative approach focused on delivering small but valuable portions of the system regularly (often in 1-4 week cycles called sprints). It emphasizes collaboration, customer feedback, and flexible responses to change.

Involves continuous interaction with stakeholders and allows changes to be made throughout the development process.

**Pros:**

Highly flexible and adaptive to changing requirements.

Regular releases allow users to see progress and provide feedback early and often.

Faster delivery of a working product, as development is broken into manageable sprints.

**Cons:**

Requires strong collaboration among the development team and stakeholders.

Not all teams are experienced in Agile practices, which could hinder smooth execution.

Less focus on documentation, which could pose challenges for maintenance and scaling the product.

**Relevance to the Agricultural Store Project:**

Given the nature of this project (with evolving needs from farmers and manufacturers), Agile would likely be the most suitable approach.

Agile allows for quick iterations and constant feedback, ensuring that the platform remains relevant and meets the needs of users as they change or new features are identified.

It helps the development team quickly respond to new market demands, such as adding new agricultural products or adjusting delivery logistics.

Agile would also be suitable because it ensures the end product remains usable and refined over time.

Recommendation for the Agricultural Store Project

Given the nature of this project, which involves creating an online store with diverse stakeholder needs (farmers, manufacturers), and the requirement for ongoing feedback and adaptation, I would recommend the Agile methodology as the most suitable approach. **Here’s why:**

**User-Centric Development:** The agricultural store's success hinges on meeting the dynamic needs of farmers and manufacturers, and Agile allows continuous engagement with users to ensure the platform evolves based on real-time feedback.

**Flexibility:** The project will need to be flexible as new products, delivery options, and payment methods are added over time, and Agile is ideal for this kind of iterative development.

**Faster Delivery:** Regular sprints and early releases can help deliver functional parts of the store sooner, allowing farmers to benefit from the platform as it’s being developed**.**

**Risk Management:** By breaking down the project into manageable sprints, potential risks related to requirements changes or technical challenges can be identified and mitigated early.

However, if there’s a clear understanding of the requirements and minimal changes are anticipated, then Iterative or Evolutionary models might also be considered for specific parts of the project.

**Question 9. 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?**

**1. Waterfall Model (Not Ideal for This Project)**

**Overview**: The Waterfall model is a **linear and sequential** process, where each phase is completed before moving to the next one. It follows a strict order of phases such as requirements gathering, design, development, testing, and deployment.

**Pros**:

* Simple to understand and manage.
* Clear structure and predictable outcomes.

**Cons**:

* **Lack of flexibility**: The Waterfall model is inflexible when requirements change during development. This could be problematic if the project requirements evolve as the needs of farmers, manufacturers, or stakeholders change.
* **Late testing**: Testing comes at the end, which means if there are any issues, they may not be discovered until the final stages of development, leading to expensive fixes.
* **Assumes static requirements**: The Waterfall model assumes that the requirements are fully understood upfront and unlikely to change, which is not the case for an evolving platform like this one.

Given the **dynamic nature** of the agricultural product store (evolving requirements and potential new features), the **Waterfall** model would not provide enough flexibility to adapt to changes in business requirements during development.

**2. V-Model (Not Ideal for This Project)**

**Overview**: The V-Model is an extension of the Waterfall model, where each development phase is mirrored by a corresponding testing phase (e.g., design leads to unit testing, implementation leads to integration testing, etc.). Testing and development occur simultaneously, but it's still a **sequential process**.

**Pros**:

* **Rigorous Testing**: Testing occurs early, with validation and verification happening at each stage, which ensures higher product quality.
* Clear structure like Waterfall, but with more focus on validation at each stage.

**Cons**:

* **Inflexibility**: Like Waterfall, V-Model is also **rigid** in its approach. Changes to the requirements or scope during the project would disrupt the process.
* It’s difficult to adjust once the project has begun, and this could lead to delays or challenges if there are changes in the agricultural market or product specifications during development.
* **Overemphasis on documentation**: In the V-Model, a lot of emphasis is placed on documentation, which can be time-consuming and may hinder flexibility.

While the V-Model provides a more structured testing process, it still lacks the necessary flexibility to respond to evolving requirements, which is a concern for this project, especially given the dynamic nature of the agricultural industry.

**3. Why Agile is More Suitable**

**Overview**: Agile is an **incremental and iterative** methodology where the project is broken down into smaller, manageable units called **sprints** (typically 2-4 weeks long). After each sprint, a functional product or feature is delivered, allowing for constant feedback and adjustments. It’s characterized by flexibility, collaboration, and rapid delivery.

**Pros**:

* **Flexibility**: Agile allows for **continuous feedback** from stakeholders (farmers, manufacturers, etc.) and the ability to adjust requirements as the project progresses. This is ideal for the agriculture product store, where product offerings and features may need to change based on user feedback.
* **Faster Delivery**: Through sprints, developers can deliver small, usable increments of the platform, which allows the business to start using the product earlier and provide feedback for improvement.
* **Stakeholder Involvement**: Regular interaction with stakeholders (including farmers and manufacturers) ensures that the platform evolves based on real user needs and expectations.
* **Risk Mitigation**: Frequent testing and feedback during each sprint mean issues can be identified and addressed early, reducing the risk of major problems at the end of the project.

**Cons**:

* **Requires skilled teams**: Agile requires teams to be **highly collaborative** and responsive to changes. This requires experience and training, which the team at APT IT SOLUTIONS may need to ensure before committing to an Agile approach.
* **Less documentation**: Agile is focused on delivering working software, so documentation may not be as comprehensive as in Waterfall or V-Model approaches. However, this is usually manageable as long as the requirements and testing processes are properly captured within the sprints.

**Why Agile is the Best Fit**:

* **Dynamic Nature**: Since the project will likely evolve based on user feedback and market changes, Agile allows the development process to adapt to those changes effectively.
* **Stakeholder Feedback**: The project will involve continuous interaction with farmers and manufacturers, and Agile's iterative approach allows these stakeholders to influence the platform’s features and functionality as the project progresses.
* **Faster Go-to-Market**: With Agile, you can deliver a working version of the store early, allowing farmers to use the platform sooner, even if all features aren't available from the start.

**Question10. Write down the differences between waterfall model and V model.**

**Answer.** **Waterfall:**

* **Linear** and sequential; each phase completes before moving to the next.
* **Testing** happens after development is completed.
* Ideal when requirements are **well-defined** from the beginning and unlikely to change.

**V-Model:**

* **Validation and verification** are done at each stage in parallel.
* Testing begins during the **design phase** and continues throughout the development lifecycle.
* Better suited for projects that require rigorous **testing** and validation at each step.

**Question.11 As a BA, state your reason for choosing one model for this project**

**Answer. As a Business Analyst, I would recommend using the V-Model for this project. Here’s why:**

* The V-Model ensures that testing happens at each stage of development, ensuring higher product quality.
* Validation from stakeholders (farmers, manufacturers) can be integrated into each phase to avoid any disconnect between requirements and the final product.
* It also provides a clear framework for managing requirements and ensuring that the system meets the needs of the end users.

**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**. A Gantt Chart will visually depict the timelines and resource allocation for the project phases as they are aligned with the V-Model. The chart will show tasks such as:

* **RG (Requirement Gathering):** Initial A Gantt Chart will visually depict the timelines and resource allocation for the project phases as they are aligned with the V-Model. The chart will show tasks such as**:**
* **RG (Requirement Gathering):** Initial phase of gathering requirements from all stakeholders.
* **RA (Requirement Analysis):** Analyzing the gathered requirements to create a project blueprint.
* **Design:** High-level and detailed design, ensuring the platform architecture is sound.
* **Development (D1, D2, D3, D4):** Various stages of development.
* **Testing (T1, T2, T3, T4**): Unit testing, integration testing, and user acceptance testing.
* **UAT (User Acceptance Testing):** Final testing phase where users verify the system works as expected.
* **f gathering requirements from all stakeholders.**
* **RA (Requirement Analysis):** Analyzing the gathered requirements to create a project blueprint.
* **Design**:, ensuring the platformHigh-level and detailed designarchitecture is sound.
* **Development (D1, D2, D3, D4):** Various stages of development.
* **Testing (T1, T2, T3, T4**): Unit testing, integration testing, and user acceptance testing.
* **UAT (User Acceptance Testing**): Final testing phase where users verify the system works as expected.

**Question 13 –Explain the difference between Fixed Bid and Billing projects**

**Answer**. **Fixed Bid:**

* The project cost is agreed upon in advance and remains fixed, regardless of the time or resources required.
* Suitable for projects with **well-defined requirements**.

**Billing (Time & Materials):**

* The client is billed for the time spent and resources used.
* Ideal for projects with **uncertain requirements** or evolving needs.

**Question 14 – Preparer Timesheets of a BA in various stages of SDLC - 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.** As a **Business Analyst**, the timesheets would reflect the activities performed during each phase of the SDLC:

* **Design Timesheet**: Analyzing business requirements, interacting with stakeholders, defining functional specifications.
* **Development Timesheet**: Reviewing progress, ensuring that developers are aligning with requirements, handling change requests.
* **Testing Timesheet**: Ensuring that tests are aligned with business needs, reviewing test cases, and participating in UAT.
* **UAT Timesheet**: Managing user acceptance tests, gathering feedback from users, and ensuring issues are addressed.
* **Deployment and Implementation Timesheet**: Finalizing deployment plans, training users, and managing post-deployment issues.

This structured approach will help Mr. Karthik make informed decisions at each step of the project’s lifecycle, ensuring its successful completion.