Issues faced by

1) Peter - he is facing difficulties in procuring fertilizers which are very important for farm.
2) Kevin - he is also facing the same problem in-case of buying seeds for farming certain crops.
3) Ben - his concern on lack of pesticides which could help in greatly reducing pests in crops.

So to solve above issues, Mr. Henry decided to make an online agriculture product store (Online Web / mobile Application) to facilitate remote area farmers to buy agriculture products.

Output of Mr. Henry's idea will be Mr. Henry decided to make an online agriculture product store to facilitate remote area farmers to buy agriculture products.

Objective of project -
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.

Functionality of App/Website -
This new application should be able to accept the product (fertilizers, seeds, pesticides) details from
the manufacturers and should be able to display them to the Farmers. Farmers will browse through
these products and select the products what they need and request to buy them and deliver them to farmers location.

Mr. Henry has given this project through his Company SOONY. In SOONY Company, Mr Pandu is Financial Head and Mr Dooku is Project Coordinator. Mr. Henry , Mr Pandu , and Mr Dooku formed
one Committee and gave this project to APT IT SOLUTIONS company for Budget 2 Crores 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 M17r 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.

Stakeholders -
Companny SOONY

- Mr. Henry (Founder)
- Mr. Pandu (Financial Head)
- Mr. Dooku (Project Coordinator)

APT IT SOLUTIONS

- Mr. Karthik (Delivery Head)
- Mr. Vendanam (PM)
- Ms. Juhi (Senior Java Dev.)
- Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo (Java Devloper)
- Mr. Mike (Network Admin)
- Mr. John (DB Admin)
- Mr. Jason & Ms. Alekya (Tester)
- Mr. Pratik (BA)

3rd Party/Business Stakeholders :
- Peter, Kevin and Ben

Q. 1 Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customer)
->
Goal:
Enable farmers in remote areas to easily purchase agricultural inputs (fertilizers, seeds, pesticides) through a user-friendly online platform.

Inputs:
1. Product details from manufacturers (fertilizers, seeds, pesticides).
2. Farmer requirements (orders, location).
3. Payment information.

Resources:
1. Online web/mobile application (developed by APT IT SOLUTIONS).
2. IT team (developers, testers, BA, PM, admins).
3. Internet connectivity and logistic partners.

Activities:
1. Manufacturers upload product details.
2. Farmers browse and search for products.
3. Farmers can add selected products in cart.
4. Farmers place orders of selected products.
5. Payment and order confirmation.
6. Order processing, packaging and shipping.
7. Delivery of order to farmer's location.
8. Feedback/Support/Change request handling.

Outputs:
1. Delivery of required agriculture products (seeds, pesticides, fertilizers).
2. Digital order confirmations and order tracking.
3. Purchase history and reports/receipts.

Value Created to End Customers:
1. Easy access to essential farm products in remote areas.
2. Time saving, effort and travel costs.
3. Transparency in product availability and pricing.
4. Improved agricultural productivity through timely inputs.

Q. 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.
->
SWOT Analysis for Online Agriculture Store Project

Strengths (Internal - Positive factors)
- Skilled IT in-house team.
- Strong delivery experience and technical capabilities.
- Clear budget allocation (2 Cr) and defined project timeline (18 months)
- CSR Project (Corporate Social Responsibility) - Reputational project for both APT IT Solutions and SOONY company.
- Direct involvement of end user (Peter, Kevin, Ben) in requirement gathering.

Weaknesses (Internal - Negative factors)
- New type of project (e - commerce for agriculture) involves possible lack of domain knowledge.
- Long duration (18 months) may lead to scope creep and resource attrition.
- Dependency on internet connectivity in remote areas.
- User training and change management required.
- Budget constraints - limited to 2 Cr, so overrun risk exists.

Opportunities (External - Positive factors)
- Growing digitization in agriculture sector.
- Large untapped rural farmer base -> expansion potential.
- Chance to scale platform into a marketplace (adding more suppliers, products, services).
- Build long term relationship with SOONY company for future IT projects.
- Brand recognition for APT IT SOLUTIONS in AgriTech space.

Threats (External - Negative factors)
- Competition from existing e - commerce giants.
- Logistics and last mile delivery challenges in remote/rural areas.
- Risk of low adoption if farmers face usability or payment issues.
- External risks like government policy changes, price regulations, or agri subsidies.
- Cybersecurity threats.

Q. 3 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.

Feasibility Study - Technology
1. Hardware (HW) :

- Application and Database servers are required.
- Network infrastructure and bandwidth to handle farmer access.
- Devices for development and testing (laptops).
- Cloud hosting feasibility and on-premise servers.

2. Software (SW) :

- Java framework.
- Database.
- Front-end technologies.
- Middleware/API integration.
- Security tools.
- Testing tools.
- Project management and Collaboration tools.

3. Trained Resources :

- Experienced Java developers (Already available: Juhi, Teyson, Lucie, Tucker, Bravo).
- Skilled Database Administrator (John).
- Network Administrator (Mike).
- Testers for functional and performance testing (Jason, Alekya).
- Business Analyst (me) for requirements gathering and documentation.

- UI/UX Designer (May need to hire as app must be farmer-friendly).
- Training for support staff to help farmers post-launch.

4. Budget :

- Total allocated budget = 2 Cr INR.
- Major cost components:
  - Hardware/Cloud hosting and licensing.
  - Software development and testing.
  - Resource salaries/consulting fees.
  - Training and farmer onboarding support.
  - Marketing and awareness campaigns.
  - Contingency (10-15% buffer)

5. Time Frame :

- Total duration = 18 months.
- Suggested breakdown:
  - 2 to 3 months -> Requirement gathering, requirements analysis and design.
  - 6 to 7 months -> Development (Backend + Frontend + DB setup)
  - 3 to 4 months -> Testing & bug fixes.
  - 2 months -> Deployment (UAT)
  - Ongoing -> Maintenance post - launch.

Q. 4 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

-> **Gap Analysis :**

Aspect	AS - IS (Existing Process)	TO - BE (Future with Online Store)
Procurement of Products	Farmers travel long distances to physical stores/markets to buy seeds, fertilizers, pesticides. Availability is uncertain.	Farmers can browse & order products online anytime, anywhere. Availability shown in real time.
Product Availability	Limited options, depends on local shop stock. Farmers often face shortages (e.g., Peter – fertilizers, Kevin – seeds, Ben – pesticides).	Wide range of products listed from multiple manufacturers/suppliers → higher assurance of availability.
Time & Effort	Significant time and travel effort needed. Loss of productive farm time.	Few clicks via mobile/web app → saves travel, time, and effort.
Delivery	Farmers arrange their own transport to bring goods home.	Doorstep delivery to farmer's location through logistics partners.
Reach & Market Access	Only nearby shops/mandis accessible.	Farmers in remote areas can access a wide network of suppliers nationwide.

Key Gaps Identified
- Lack of product availability assurance.
- High dependency on physical travel -> time and cost inefficiency.
- No platform connecting remote farmers with multiple resources.

Proposed Solution (TO - BE)
An online agricultural store (Web + Mobile app) that ensures easy, transparent and accessible purchasing seeds, fertilizers and pesticides, delivering direct value to farmers.

Q. 5 List down different risk factors that may be involved (BA Risks and Process/Project Risks).
->

Risk Factors - Online Agriculture Store Project

Business Analysis (BA) Risks

1. Incomplete Requirements Gathering
- Farmers (Peter, Kevin, Ben) may not clearly articulate needs due to limited technical exposure.

2. Changing Requirements (Scope Creep)
- Farmers/committee may request new features (loan facility, crop advisory, etc.) mid-project.

3. Misinterpretation of Requirements
- Gap between what farmers want vs what developers build.

4. Stakeholder Availability Risk
- Farmers may not always be available for validation due to farming schedules.

5. User Adoption Risk
- Even if app is built, farmers may find it difficult to use (low digital literacy)

6. Inadequate Requirement Documentation
- If BA misses proper SRS/BRD, dev team may face confusion during development.

Process / Project Risks

1. Budget Overrun
- Project is capped at Rs. 2 Cr, additional features, infra, or delays may exceed cost.

2. Timeline Slippage
- 18 months may not be enough if requirements change or resource shift.

3. Technology Risks
- Chosen technology stack (Java + DB + Mobile App) may face scalability/performance issues.

4. Resource Availability Risk
- Key developers/testers may leave mid-project -> knowledge loss.

5. Integration Risks
- Payment gateway, logistics API, SMS/email notifications may fail or delay.

6. Infrastructure/Connectivity Risks
- Remote areas may have poor internet, affecting usability.

7. Logistics & Delivery Risk
- Supplying products to remote villages may face operational delays.

8. Testing/Quality Risk
- If app is not properly tested for rural network conditions, usability may fail post-launch.

Q. 6 Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take decisions and who are the influencers.
->

Stakeholder analysis is the process of identifying, understanding and prioritizing individuals or groups who are interested in or affected by project or decision, and then strategizing how to engage with them.
It is performed to better manage stakeholders relationships, secure support, align goals, and ultimately ensure project success by incorporating stakeholder needs and opinions into decision making.

RACI matrix is used while doing stakeholder analysis so that everyone who is linked to the project, understands their roles and responsibilities for specific tasks or decisions within the project, Ensuring everyone understands their level of involvement.

In RACI, R - Responsible A - Accountable C - Consulted I - Informed

Stakeholder	Role	Decision Making Power	Level of Influence	RACI
Mr. Henry (Founder, SOONY)	Project Sponsor	Final decision maker (project initiation, scope approval)	High	A
Mr. Pandu (Financial Head)	Budget approval & funding	Decision on financial allocations	High	A
Mr. Dooku (Project Coordinator)	Project coordination and stakeholder management	Partial influence on scope and timeline	Medium	C / I
Peter, Kevin, Ben (Farmers)	End users (req. providers)	No formal decision power	High influence	C / I
Mr. Karthik (Delivery Head)	Vendor representative	Key decision maker on delivery commitments	High	A
Mr. Vendanam (Project Manager)	Day-to-day project management	Medium decision authority	Medium	R
Ms. Juhi (Senior Java Dev.)	Technical Lead	No direct decision authority	Technical influencer	R

Teyson, Lucie, Tucker, Bravo (Java Dev Team)	Development	No decision authority	Execution only	R
Mr. Mike (Network Admin)	Infrastructure setup	No decision authority	Technical influencer	R
Mr. John (DB Admin)	Database setup	No decision authority	Technical influencer	R
Mr. Jason & Ms. Alekya (Testers)	Testing	No decision authority	Quality influencer	R
Mr. Pratik (Business Analyst)	Req. gathering, documentation, bridge between users and dev.	No financial decision power	Strong influencer (req. clarity, gap analysis)	R / C

RACI Matrix Analysis

Role	Mr. Henry (Founder)	Mr. Pandu (Financial Head)	Mr. Dooku (Project Coordinator)	Peter, Kevin, Ben (Farmers)	Mr. Vandan am (PM)	Ms. Juhi (Lead Dev)	Mr. Karthik (Delivery Head)	Pratik (BA)
Project Funding	A	C	I	I	R	C	C	C
Scope & Requirement	A	C	A	C	R	C	C	R
Budget Approval	R	A	C	I	R	I	C	C
Timeline Approval	A	C	A	I	R	I	C	C
Feature Prioritization	A	C	A	I	R	C	C	R
Final Product Approval	A	C	A	C	R	I	C	R

Key Stakeholders

- **Decision Makers:**
  - Mr. Henry (Sponsor - Go/No-Go, Scope)
  - Mr. Pandu (Finance)
  - Mr. Karthik (Vendor Delivery Head)

- **Influencers:**
  - Farmers (Peter, Kevin, Ben) - Requirements drive the solution
  - Business Analyst (Pratik) - Ensures requirements are captured and validated
  - Project Manager & The Leads - Influence execution success

Q. 7 Help Mr. Karthik to prepare business case document.

->
A business case document in business analysis is a formal justification for a proposed project or investment, outlining its expected benefits, costs, risks, and timelines to help decision-makers determine if the initiative is worthwhile and should move forward.
It is prepared to provide evidence - based reasoning for significant investments, enabling executives and stakeholders to make informed decisions about launching new projects.

To create a business case document, we will address below points in question and answer format.

1. Why is this project initiated?
-> The project is initiated to help farmers in remote areas procure essential agricultural inputs (seeds, fertilizers, pesticides) through an online web/mobile application. The goal is to remove challenges in availability, accessibility, and pricing transparency while fulfilling SOONY's CSR initiative.

2. What are the current problems?
->
1. Farmers like **Peter, Kevin, and Ben** struggle to procure fertilizers, seeds, and pesticides.
2. Limited product availability in local markets.
3. Farmers must travel long distances to physical stores, wasting time and efforts.
4. Lack of transparent pricing, reliance on middleman.
5. No structured after-sales support or order tracking.

3. With this project how many problems could be solved?
->
1. Product Availability: Wider range of products from multiple suppliers.
2. Accessibility: Farmers can place orders anytime from anywhere.
3. Cost Transparency: Standardized, transparent pricing directly from manufacturers.
4. Time and Effort: Saves farmer's travel and waiting time.
5. Delivery & Support: Products delivered to farmer's doorstep with after-sales support.

4. What are the resources required?
- Human Resources:
- Project Manager, Business Analyst, Java Developers, Testers, DB Admin, Network Admin, UI/UX Designer, Support Staff.

- **Technology Resources (HW/SW):**
  - Java-based platform (Spring Boot, React/Angular).
  - Database (MySQL/PostgreSQL).
  - Cloud servers or dedicated hosting.
  - Payment gateway, logistics integration, security tools.

- **Financial Resources:**
  - Budget allocated: Rs. 2 Cr under CSR initiative.

5. How much organizational change is required to adopt this technology?
- **Moderate Change:**
  - Farmers need training and awareness programs to adopt the digital platform.
  - SOONY needs to coordinate with product suppliers and delivery partners.
  - Support/Helpdesk setup required for ongoing farmer assistance.

6. Time frame to recover ROI (Return on Investment):

- Since this is a CSR initiative, the ROI is not purely financial but measured in social impact (farmer convenience, goodwill, brand reputation).
- ROI Timeline: Within 2-3 years, SOONY is expected to recover intangible benefits in terms of farmer trust, corporate reputation, and potential business partnerships.

7. How to identify stakeholders?
- Project Sponsors: Mr. Henry (Founder), Mr. Pandu (Finance Head), Mr. Dooku (Coordinator)
- Delivery Partner (APT IT Solutions): Mr. Karthik (Delivery Head), Project Manager, Developers, Testers, Admins, BA.
- End Users: Farmers (Peter, Kevin, Ben, and wider farmer community).
- External Stakeholders: Product manufactures, logistics/delivery partners, payment gateway providers.
- Stakeholders can be identified through interviews, requirement workshops, and analysis of who impacts or is impacted by the project.

Q. 8 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.
->
SDLC Project Development Methodologies

Phases in SDLC -
Planning and Requirement Analysis -> Design -> Implementation -> Testing -> Deployment -> Maintenance

1. Sequential (Waterfall Model)
- Approach: Follows a strict step - by - step sequence: Requirement -> Design -> Development -> Testing -> Deployment.
- Pros: Simple, clear structure, easy to manage when requirements are fixed.
- Cons: Rigid, changes are difficult once development starts.
- When to use: Projects with well-defined, stable requirements and minimal risk of change.

2. Iterative Model
- Approach: Development is done in small parts (iterations). Each iteration delivers a working version, which is improved in the next cycle.
- Pros: Feedback is taken after each iteration, easier to adapt to changes.
- Cons: May require more time and cost if iterations are many.
- When to use: Projects where requirements are evolving but not completely uncertain.

3. Evolutionary Model
- Approach: Builds the system gradually, starting with basic functionality, then expanding as requirements become clearer. Prototypes are refined until the final product is ready.
- Pros: Early working prototypes, user involvement from the beginning.
- Cons: Risk of scope creep if too many changes are requested.
- When to use: Projects where end-user requirements are not fully clear at the start.

4. Agile Methodology
- Approach: Highly flexible and adaptive. Development is divided into sprints (2-4 weeks), delivering small usable features quickly. Continuous collaboration with stakeholders.
- Pros: Fast delivery of usable features, highly adaptable, strong customer involvement.

- Cons: Requires active stakeholder participation, difficult to predict final cost & timeline upfront.
- When to use: Projects with changing requirements, need for speed, and high stakeholder involvement.

Overall Summary of Committee
- If requirements are **clear and fixed** -> Sequential (Waterfall) may work.
- If requirements are **partially clear but may evolve** -> Iterative/Evolutionary fit better.
- If requirements are **dynamic, and quick farmer feedback is needed** -> Agile is the best approach.

Q. 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. Understanding the SDLC Models

Waterfall Model:
- Linear, sequential flow (Requirements -> Design -> Development -> Testing -> Deployment).
- Pros: Simple, easy to manage, best for projects with stable, well-defined requirements.
- Cons: Very rigid, late discovery of defects, high cost of changes.

RUP (Rational Unified Process):
- Iterative and incremental model developed by IBM.
- Uses phases (Inception, Elaboration, Construction, Transition).
- Pros: Flexible, risk-driven, suits large and complex projects.
- Cons: Complex to manage, resource-heavy.

Spiral Model:
- Combines iterative development + risk analysis.
- Each loop of the spiral = planning, risk analysis, engineering, and evaluation.
- Pros: Good for high-risk projects, early identification of risks.
- Cons: Expensive, requires strong risk management expertise.

Scrum (Agile Framework)
- Iterative, sprint-based approach with strong stakeholder collaboration.
- Pros: Quick delivery of usable product, flexible, user-centric.
- Cons: Needs high stakeholder involvement, not suitable if requirements are frozen upfront.

V-Model (Validation & Verification Model)
- Extension of waterfall -> Every development phase has a corresponding testing phase.
- Pros: Strong emphasis on quality, defects identified early, structured approach.
- Cons: Very rigid, not good for changing requirements, testing starts only after design stages are done.

2. Which methodology is better for this project?
- Farmers (end users) may not know all requirements upfront -> features like local language support, offline access, simple UI may evolve after testing.
- Budget (2 Cr INR) & Timeline (18 months) are fixed -> we need structured but flexible delivery.

- SMEs prefer V-Model -> because it ensures testing at every stage (they are worried about quality)
- Project team prefers Waterfall -> because it is simple and easier to manage within time/budget.

BA Recommendation
As a Business Analyst, I would not recommend pure Waterfall or pure V-Model because both are too rigid for this project.

Instead, the best approach would be to:
- Use a Hybrid Model: Iterative + V-Model principles.
  - Requirements and design can follow structured V-Model testing checkpoints.
  - But instead of waiting 18 months for delivery (Waterfall risk), we break the project into phased iterations (modules) - e.g.,
    - Phase 1 -> Seed ordering module
    - Phase 2 -> Fertilizer ordering
    - Phase 3 -> Pesticides, Payment, Logistics.
- This way, SMEs get quality assurance (V-Model validation) and project team gets manageable delivery cycles.

If only one model must be chosen -> V-Model would be better than Waterfall here, because:
- Farmers are first-time users -> quality and usability testing must be integrated.
- Mistakes found late in Waterfall would be very costly.
- V-model ensures requirements are validated at each stage before moving forward.

BA Standpoint:
- Will recommend V-Model (with iterative phases) as better fit.
- Justification: Ensures quality, early defect detection, and strong alignment with farmer needs, while still structured enough to manage within budget & time.

Q. 10 Write down the differences between Waterfall model and V model.
->

Aspect	**Waterfall Model**	**V-Model**
Definition	A linear, sequential SDLC model where each phase follows the previous one.	An extension of Waterfall where each development phase is paired with a corresponding testing phase.
Process Flow	Requirements -> Design -> Development -> Testing -> Deployment	Requirement <-> Testing, Design <-> Test Design, Development <-> Unit Testing (Validation & Verification in parallel)
Testing Approach	Testing starts only after the development phase is completed.	Testing activities starts early (parallel to development phases).
Flexibility	Very rigid, difficult to go back and change requirements.	Also rigid, but alignment makes defect detection earlier.
Error Detection	Errors are detected late in the cycle.	Errors are detected earlier because testing is mapped to each stage.

Quality Assurance	Quality depends heavily on final testing phase.	Stronger focus on quality & validation throughout the lifecycle.
Best Suited For	Projects with stable, well-defined requirements and minimal changes.	Projects where quality is critical (e.g. Healthcare, Aerospace, Banking).
Risk Handling	High risk of late defect discovery and rework cost.	Lower risk, as testing validates requirements/design early.
End - User Involvement	Limited, mostly at requirement and final delivery stages.	Moderate, as validations and reviews happen at each stage.

Q. 11 As a BA, state your reason for choosing one model for this project.
->

For the Online Agricultural Store project, I would recommend using the V-Model over the Waterfall model.

Reasons:

1. User-Friendly Application is Critical
- Farmers from remote area may not be very tech-savvy.
- V-Model ensures early testing and validation of requirements (like easy navigation, language support, and product ordering flow). This helps confirm usability before final delivery.

2. Error Detection at Early Stages
- V-Model detects mismatches (e.g., wiring product categorization, poor UI) earlier, saving time and money.
- In Waterfall, issues are usually found at the end during testing, which increases cost and delays.

3. Requirement Clarity vs. Quality Need
- While requirements (seeds, fertilizers, pesticides catalog + payment + delivery) are fairly clear, the quality of the system is critical since it impacts farmers livelihoods.
- V-Model ensures every requirement is verified against a test case -> higher confidence in system reliability.

4. Budget & CSR Initiative
- This project has a fixed budget (2 Crores INR) and timeline (18 months).
- V-Model reduces the risk of expensive rework at later stages, keeping costs controlled.

5. Stakeholder Confidence
- V- Model provides structured reviews and test plans mapped to requirements -> builds trust.
- Since this is a CSR initiative, stakeholders (Mr. Henry, Mr. Pandu, Mr. Dooku) will want visible assurance of quality at every stage.

Q. 12 The Committee of Mr. Henry, Mr Pandu, and Mr Dooku discussed with Mr Karthik and finalized 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.
->

Phases (mapped to V-Model stages)

1. RG - Requirement Gathering
   - Role: BA, PM, Stakeholders (Peter, Kevin, Ben)
   - Deliverables: Business requirements document (BRD), Use cases, Stakeholder sign-off.
2. RA - Requirement Analysis
   - Role: BA, PM, Developers (for feasibility), DB Admin, NW Admin
   - Deliverables: System Requirements Specifications (SRS), Feasibility analysis
3. Design
   - Role: PM, BA, Senior Developer, DB Admin, NW Admin
   - Deliverables: System Design Document (HLD, LLD), Database schema, Network architecture
4. D1 - Development Phase 1 (Core Modules - Product catalog, login/signup)
5. T1 - Testing Phase 1 (Unit Testing for D1)
   - Roles: Developers, Testers
6. D2 - Development Phase 2 (Order management, cart, payment integration)
7. T2 - Testing Phase 2 (Unit + Integration Testing for D2)
   - Roles: Developers, Testers
8. D3 - Development Phase 3 (Delivery management, farmer profile, admin module)
9. T3 - Testing Phase 3 (System Testing for D3)
   - Roles: Developers, Testers
10. D4 - Development Phase 4 (Reports, dashboard, notifications, security hardening)
11. T4 - Testing Phase 4 (System + Security Testing)
    - Roles: Developers, Testers, DB Admin, NW Admin
12. UAT - User Acceptance Testing
    - Roles: Testers, BA, PM, Farmers (Peter, Kevin, Ben as pilot users), Committee
    - Deliverables: Final sign-off

Resources Assigned

- PM (Mr. Vandanam) - Overall planning, monitoring, reporting
- BA (Mr. Pratik) - Requirements, documentation, validation support
- Java Developers (Juhi, Teyson, Lucie, Tucker, Bravo) - Development tasks (D1-D4)
- Testers (Jason, Alekya) - Testing tasks (T1-T4, UAT support)
- DB Admin (John) - Database setup, optimization, tuning
- Network Admin (Mike) - Infrastructure setup, deployment environment

Sample Timeline (18 months project duration)

Phase	Duration	Timeline	Resources
RG	1 Month	Month 1	PM, BA, Stakeholder
RA	1 Month	Month 2	PM, BA, DB Admin, NW Admin
Design	2 Months	Months 3 - 4	PM, BA, Senior Dev, DB Admin, NW Admin
D1	2 Months	Months 5 - 6	Devs
T1	1 Month	Month 7	Testers, Dev
D2	2 Months	Months 8 - 9	Devs

T2	1 Month	Month 10	Testers, Dev
D3	2 Months	Months 11 - 12	Devs
T3	1 Month	Month 13	Testers
D4	2 Months	Months 14 - 15	Devs
T4	1 Month	Month 16	Testers, DB Admin, NW Admin
UAT	2 Months	Months 17 - 18	BA, PM, Testers, Stakeholders

Q. 13 Explain the difference between Fixed Bid and Billing projects.
->

Aspect	**Fixed Bid Projects**	**Billing Projects**
Definition	The project is executed for a fixed price agreed upon at the beginning.	The client is billed based on actual work done (hours spent, resources used).
Scope	Clearly defined upfront, with minimal changes allowed.	Flexible - changes in requirements can be accommodated.
Risk	Risk lies mostly with the vendor (APT IT Solution) since they must deliver within the agreed cost and time.	Risk lies mostly with the client (SOONY Company) since increase with scope/time.
Budget	Fixed - client pays the pre-decided cost irrespective of actual effort.	Variable - depends on actual man-hours/days utilized.
Best suited for	Projects with well defined requirements. Low tolerance for scope change.	Projects where requirements are not fully known at the start. Continuous enhancements, R&D, or Agile-based work.
Example	Client agrees to pay Rs. 2 Cr for Online Agri Store Project, and vendor delivers it within 18 months.	Client pays per hour (say Rs. 1000/ hour for developer, Rs. 1200/hour for tester, etc.), and final billing depends on effort spent.

Overall Key Differences

Aspect	**Fixed Bid**	**Billing**
Cost	Pre-decided & fixed	Variable, depends on effort
Scope	Rigid, defined upfront	Flexible, evolving
Risk	Vendor bears more risk	Client bears more risk
Flexibility	Low	High
Best for	Clear requirements	Changing/uncertain requirements

Q. 14 Prepare Timesheets of BA in various stages of SDLC

a. Design Timesheet of a BA

b. Development Timesheet of a BA

c. Testing Timesheet of a BA

d. UAT Timesheet of a BA

e. Deployment and Implementation Timesheet of a BA

->

a. Design Stage - BA Timesheet

Task Name	Description	Hours
Requirements Clarification	Reviewing and refining the SRS, user stories, and acceptance criteria with the development and design teams.	8
UX Design	Collaborating with UX designers to create wireframes, prototypes, and user flows for the online stores.	15
Data Modeling	Working with DB Admin to create data model for products, orders, users and inventory	10
Technical Specification	Documenting detailed functional and non-functional requirements for developers.	12
Stakeholder Review	Presenting designs mockups and specifications to Mr. Henry's committee and gathering feedback.	5
Meetings	Attending design sync-ups and project meetings.	4
Total Hours		**54**

b. Development Stage - BA Timesheet

Task Name	Description	Hours
Developer Support	Answering questions from developers about requirements and user stories.	15
Scope Management	Assessing and documenting change requests from stakeholders, communicating impact to the Project Managers.	8
Requirement Grooming	Breaking down and preparing user stories for future sprints in the backlog.	10
Documentation Updates	Updating requirements documents based on feedback from the development team.	7
Progress Monitoring	Tracking development progress against planned features and identifying potential risks.	5
Meetings	Participating in daily stand-ups and sprint planning meetings.	5
Total Hours		**50**

c. Testing Stage - BA Timesheet

Task Name	Description	Hours
Test Case Review	Reviewing and validating test cases written by testers to ensure they align with requirements.	12
Defect Triage	Analyzing reported bugs, prioritizing them based on business impact, and communicating with developers.	10
Ad-Hoc Testing	Performing informal testing to ensure key flows are working as expected.	8
Requirements Validation	Verifying that the delivered features match the documented requirements.	10
Stakeholder Demos	Preparing and conducting feature demonstration for stakeholders.	5
Meetings	Attending testing review meetings and bug-triage sessions.	5
Total Hours		**50**

d. UAT Stage - BA Timesheet

Task Name	Description	Hours
UAT Planning	Creating a detailed plan and schedule for User Acceptance Testing with the farmers.	8
UAT Session Management	Facilitate UAT sessions with Peter, Kevin, and Ben, guiding them through test scenarios.	15
Feedback Collection	Gathering and documenting detailed feedback from users on functionality and user-friendliness.	12
Defect Management	Analyzing UAT feedback and bugs, creating new user stories or bug reports for the development team.	10
User Training	Creating basic user guides or tutorials to help farmers use the new system.	5
Meetings	Reporting UAT progress and findings to the Project Manager and stakeholders.	4
Total Hours		**54**

e. Deployment & Implementation Stage - BA Timesheet

Task Name	Description	Hours
Post-deployment Validation	Performing a final check to ensure the application is live and functional in the production environment.	5
User Communication	Drafting and sending out communications to farmers about the launch and how to access the store.	8

Issue Monitoring	Monitoring live feedback and initial user issues, acting as a liaison between users and the support team.	10
Training & Support	Providing initial support and answering questions from users as they start using the application.	12
Knowledge Transfer	Documenting and transferring knowledge to the maintenance and support team for ongoing operations.	7
Project Closure	Assisting the Project Manager with final project documentation and lessons learned.	5
Total Hours		**47**