

Decode the case study

Project idea - To make an online agriculture product store to facilitate remote area farmers to buy agriculture products.

Current needs -

1. Through this online web/mobile application farmers and companies can communicate directly with each other.

2. The new application should be able to accept the product.

3. Whatever product farmers need should be delivered to farmer's location.

4. Application should be user friendly.

Overview of the project - There is shortage of pesticides, fertilizers, and seeds and also availability. To solve this problem we have to make an online store.

Current problems - Farmers are facing some difficulties in procuring fertilizers and buying seeds and lack of pesticides

Question 1. Prepare business process model ?

GOAL - To create an online platform(web/mobile/iOS)that enables remote farmers to easily buy fertilizers,seeds and pesticides from manufacturers and suppliers so that we can solve the issue of availability and accessibility.

INPUTS -

- Problems faced by farmers.
- Product details from manufacturers (type,price).
- Farmer requirements.
- Duration 18 months.
- Stakeholder feedback.

RESOURCES -

- Human resources, APT IT solutions.
- Technical resources: web/mobile development tools.
- Company infrastructure: SOONY company as executing body.

OUTPUTS -

- A user friendly online application for farmers.

- Product listings(fertilizers,seeds,pesticides).
- Delivery system for transporting products to farmers.
- Enhanced communication between farmers and suppliers.

ACTIVITIES -

- Identify problems of farmers.
- Assign IT development to APT IT solutions.
- Gather product data from manufacturers.
- List products and enable purchase request.
- Set up delivery mechanism to farmers.
- Collect feedback from stakeholders.

VALUE -

- Solves critical farming supply in remote areas.
- Supports farmers in increasing yield and reducing crop damage.
- Promotes digital agriculture and economic inclusion.
- Builds a sustainable supply chain.

Question 2. Do SWOT analysis on the project ?

1. STRENGTH -

- Solving the real farmer problem.
- Digital transformation in agriculture.

- Capable and effective distribution model.

2. WEAKNESS -

- Farmers can struggle to use digital platform.
- Lack of internet services in remote area.
- Limited product.
- No support system for farmers to learn the application.

3. OPPORTUNITIES -

- We can add more agriculture products.
- Technology driven farming.
- We can add local language in our platform to reach out more farmers across state.

4. THREATS -

- It may have tough competition, someone might already have similar services.
- Delivery in remote areas can face delays.
- Farmers can hesitate to trust on online sources.

QUESTION 3. Check the feasibility ?

Feasibility study - A feasibility study is an analysis used to assess whether a proposed project or idea is practical to succeed.

- Technology - Its feasible because we are making an online platform although internet services in remote area is a big concern but it is gradually improving.
- Hardware - Its feasible, basic hardware like smartphones, tablets and computer are sufficient for access. And phones are also available in remote area.
- Software - Its feasible the application can be built using standard web/mobile/iOS frameworks.
- Resources - The team includes -
 - Mr. Henry - Sponsor
 - Mr. Pandu - Financial head
 - Mr. Dooku - Project coordinator
 - APT IT solutions - Development partner -
Mr.Peter,Mr.Kevin,Mr.Ben.
- Budget - Budget is 2cr and its sufficient.
- Time - Time is 18 months which is for this project.

Question 4. Do GAP analysis ?

1. Current state -

- In remote area farmers are struggling to get fertilizers,seeds and pesticides.

- To buy agricultural products farmers will have to go to market physically.
- There is no direct communication between farmers and manufactures.
- Farmers are not able to use technology properly.
- No delivery at doorstep.
- Farmers do not have product awareness.

Desire state -

- Farmers can easily order required agriculture products online from anywhere.
- It will be the direct communication between manufacturers and farmers.
- Farmers will have to be aware to use our online platform.
- Structured supply chain ensuring timely doorstep delivery to all users,even in remote area.
- Transparent product listing with prices,description and support in local language.

Question 5. Prepare risk analysis ?

1.Internal risk -

- Lack of skilled team members.

- Communication gap between stakeholder and development team.
- Misuse of funds.

2. External risk -

- Lack of internet services in remote area.
- Farmers may have difficulty using the technology.
- Unpredictable supply chain disruptions affecting product delivery.

3. BA risk -

- Incomplete requirements gathering from farmers.
- Failure to update requirement documentation as change occur.

4. Project based risk -

- Timeline delays due to scope creep or underestimated effort.
- Technical failure.
- Lack of training.

Question 6. Prepare a RACI matrix (stakeholder analysis) ?

RACI	Name	Designation
Responsible	Mr.dooku	Project coordinator
	APT IT solutions	Development and testing

Accountable	Mr.Henry	Sponsor
	Mr. Pandu	Project decisions and final approval
Consulted	Mr. Pandu	Budget and financial decisions
	APT IT Solutions	Planning and requirement decision
	Peter,Kevin,Ben	For user input and requirement
Informed	Mr.Henry	Development
	Mr.Pandu	Testing
	End user	Launch

Question 7. Prepare a business case document ?

1.Project name - Online agriculture products store for remote farmers.

2.Description - This project aims to develop a web and mobile based platform that allows farmers in remote areas to purchase fertilizers,seeds and pesticides directly from manufactures and suppliers.The application will bridge the gap between rural farmers and agricultural product providers ensuring timely and convenient access to essential inputs.

3. Why this project was initiated ?

- To resolve the unavailability and accessibility to farming inputs in rural areas.
- To promote digitalization in farming.

- To support sustainable agriculture and enhance productivity.

4. What are the current problems ?

- Farmers in remote villages have difficulty accessing quality fertilizers, seeds and pesticides.
- They depend on local dealers and they have overpricing and stock issues.
- Farmers have no direct communication with suppliers and manufacturers.
- Lack of technology for rural agriculture needs.

5. With this project, how many problems could be solved ?

- Product availability.
- Farmers can compare product quality and price directly.
- No need to travel physically.
- Technology and digitalization in farming.

6. What are the sources required ?

- Human resources : Project sponsor, Financial head, Project coordinator, Development team.
- Technical resources : Web and mobile development frameworks, database systems.
- Financial resources : 2cr budget.

- Organizational support : From SOONY company, APT IT solutions.

7. How much organisational change is required to adopt this technology ?

- Farmers need basic digital literacy training.
- Internal processes in company (SOONY) may need slight restructuring for tech support and delivery logistics.
- Developers and support teams must align with rural user needs.

8. What is the time frame to recover ROI (Return on investment) ?

- Within 2-3 years.
- Long term returns could come from scalability, partnerships, or service fees.

9. How to identify stakeholders ?

1.Primary stakeholders :

- Farmers (end user)
- SOONY company (executing body)
- APT IT solutions(developres)

2. Secondary stakeholders :

- Product manufacturers and suppliers.
- Local delivery partners.
- Government.

QUESTION 8. Write about SDLC methodologies ?

SDLC Methodologies :-

- Sequential
- Iterative
- Evolutionary
- Agile

5 years Project						
	2024	2025	2026	2027	2028	2029
Sequential						
Iterative						
Evolutionary						
Agile						

1. Sequential :- WATERFALL

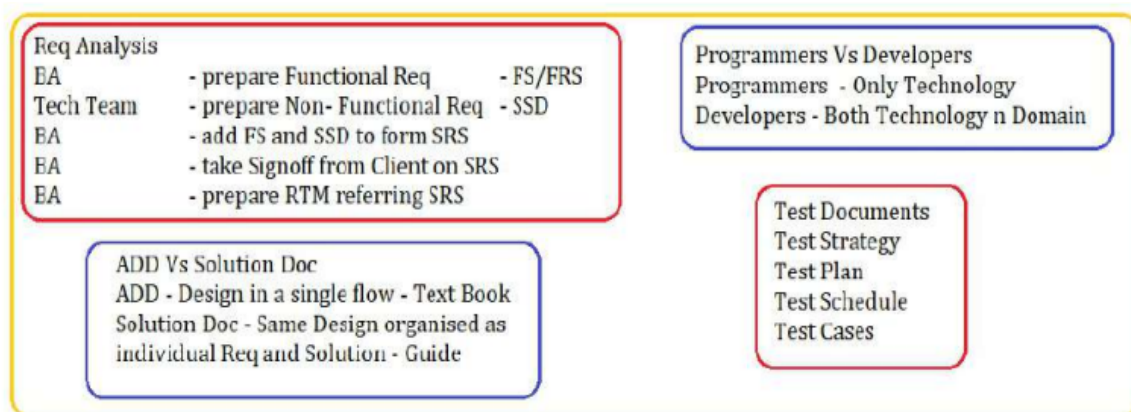
This is the most common and classic of lifecycle models, also referred to as a linear -sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed in it's entirely before the next phase can begin. At the end of phase a review takes place to determine. If the project i n on the right path and whether or not to continue or discard the project.

Stages of Waterfall Model	Resources	Artifacts
Requirements gathering	BA, PM	BRD
Requirements Analysis	BA, PM Tech Team – Sol Arch, NW Arch, DB Arch	FS/ FRS, SSD, SRS RTM
Design	Tech Team – Sol Arch, NW Arch, DB Arch, GUI Designer	HDD / ADD Solution Document
Development – coding	Programmers Developers	LDD /CDD Application
Testing	Testers	Test Documents Application with less Errors
Unit, Component, System, System Integration, UAT		
PROCESS - Configuration Management - PM		
Deployment & Implementation	Release Engineers	

Deployment – moving Code from Development Environment to Production

Implementation – running the code for the very first time in Production

After Implementation, maintenance stage starts and Support Team will take care.



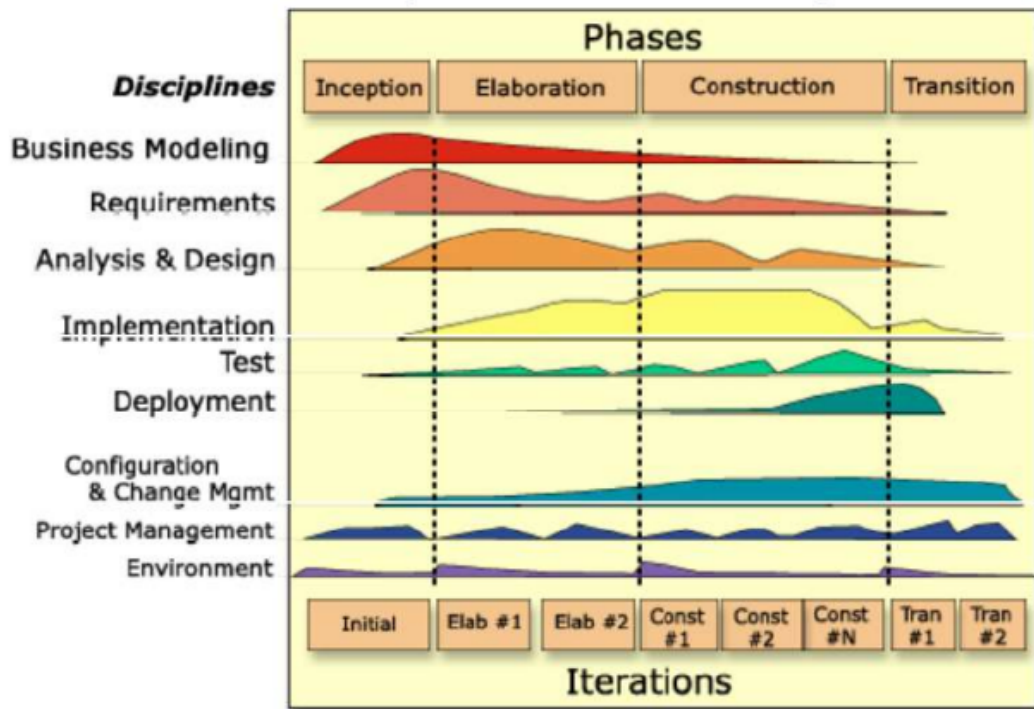
2. Iterative :- RUP(Rational Unified Process)

The rational Unified process (RUP) is an iterative software development process framework created by the rational software corporation, which was acquired by IBM in february 2003.

RUP is based on a set of building blocks or content elements describing what is to be

produced the necessary skills required and the step-by-step explanation describing how specific development goals are to be achieved.

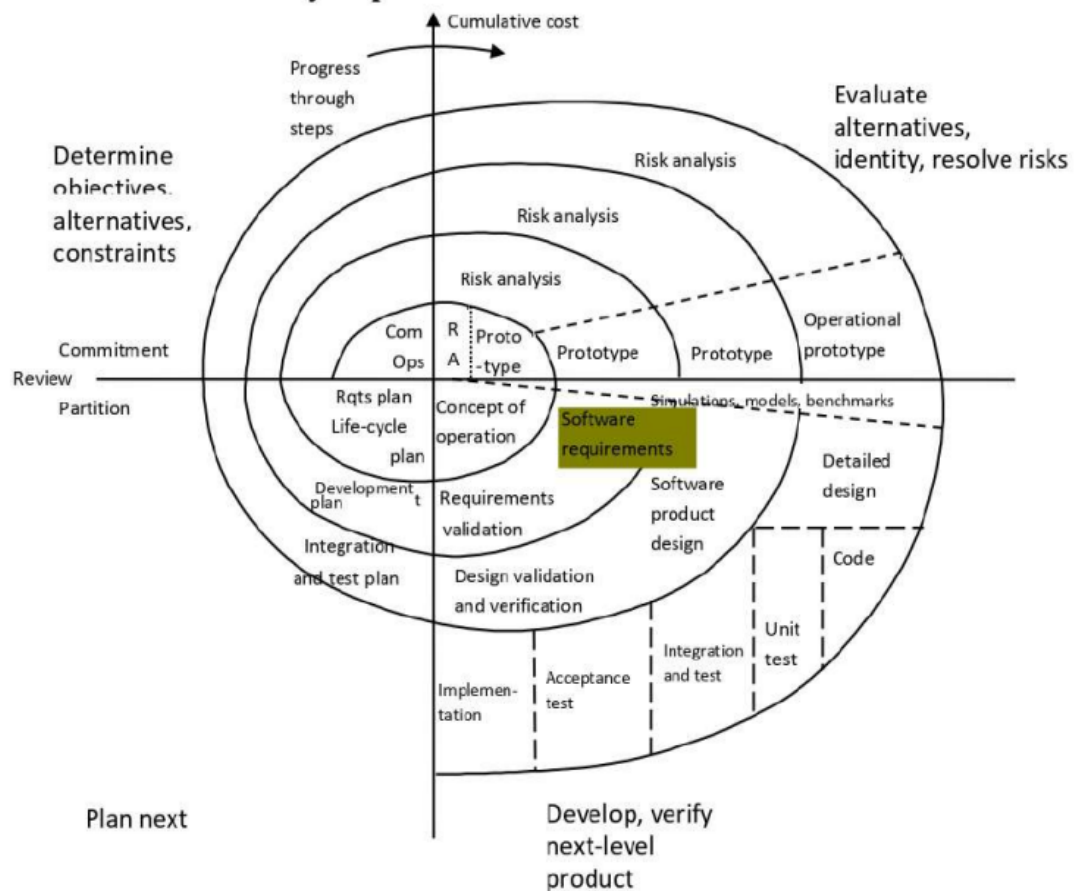
4.2 Iterative – RUP (Rational Unified Process)



3. Evolutionary :- SPIRAL

The spiral model gives more emphases placed on risk analysis. The spiral model has four phases: Planning, Risk analysis, Engineering, and Evaluation. A software project repeatedly passes through these phases in iterations. The baseline spiral starting in the planning phase, requirements are gathered and risk is assessed. Each subsequent spiral builds on the baseline spiral.

4.3 Evolutionary - Spiral



4. Agile:- SCRUM

Agile light weight can be implemented where faster delivery is required.

No documentation.

Customer retention - since there is no documentation.

The code in itself forms as documentation.

No support scalability and extendibility.

SDLC life cycle cut down by employing seasoned DEVELOPERS.

- **Agile manifesto**

- 1.Four main values**

- Individuals and interactions over process and tools.
 - Working software over comprehensive documentation.
 - Customer collaboration over contract negotiation.
 - Responding to change over following the plan.

- 2.Twelve Principles of Agile Software**

- 1.Satisfy the customer through early and continuous delivery of valuable software.

- 2.Welcome changing requirements even late in development. Agile processes harness change for the customer's competitive advantage.

- 3.Deliver working software frequently from a couple of weeks to a couple of months with a preference to the shorter timescale.

- 4.Business people and developers must work together daily throughout the project.

5. Build projects around motivated individuals. Give them environment and support they need and trust them to get job done.

6. The most efficient and effective method of conveying information to and within a development team is face -to -face conversation.

7. Working software is the primary measure of progress.

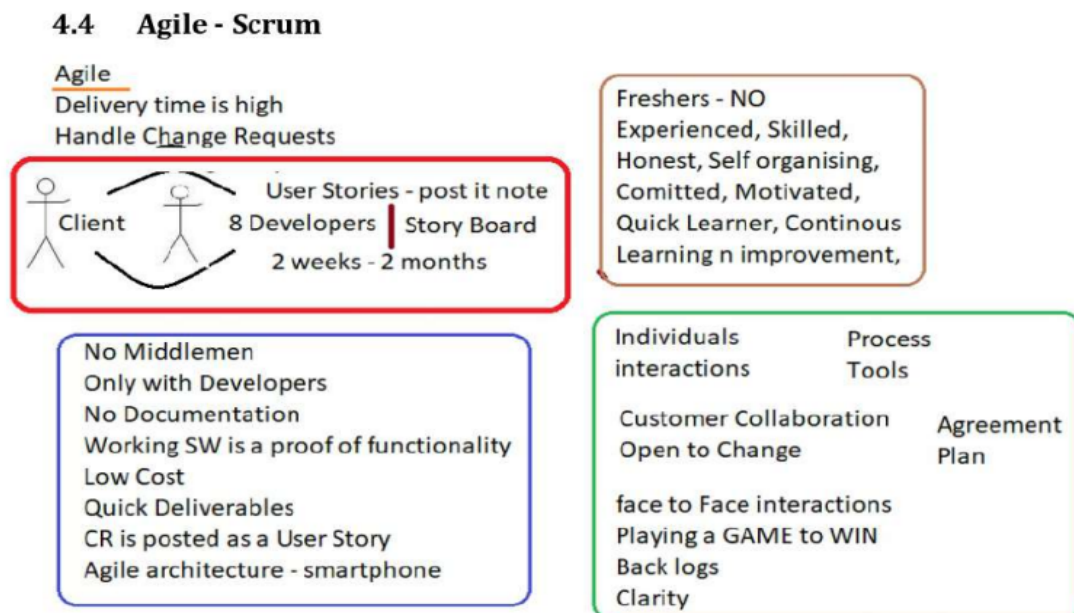
8. Agile process promote sustainable development. The sponsors , developers, and users should be able to maintain a constant pace indefinitely.

9. Continuous attention to technical excellence and good design enhances agility.

10. Simplicity- - the art of maximizing the amount of work not done - - is essential.

11. The best architectures, requirements, and design emerges from self organizing teams.

12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts it's behaviour accordingly.



Question 9. Waterfall RUP Spiral and Scrum models ?

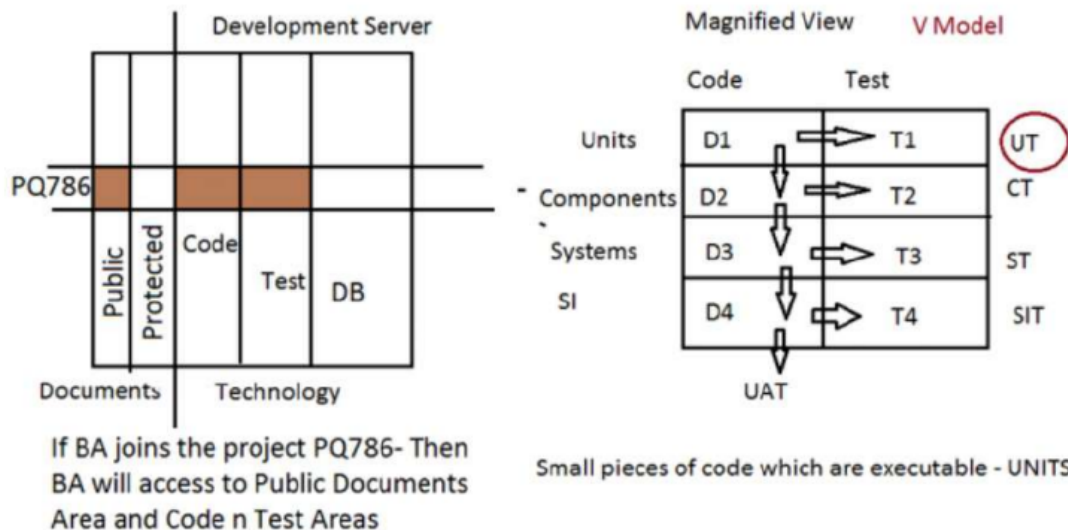
As a business analyst I have chosen V model for this project.

V model :-

- V model means verification and validation model.
- Each phase must be completed before the next phase begins. Testing of the product is planned in parallel with a corresponding phase of development in V model.

- Proactive defect tracking - that is defects are found at early stage.
- Works well for small project where requirements are easily understood.
- If any change happen in midway then the test documents along with requirement documents has to be updated.

Practical – V Model



Question 10. Write down the 20 differences between waterfall and V model ?

WATERFALL	V-MODEL
1. Linear sequential model.	1. Extension of waterfall but emphasises verification and validation.
2. Testing starts after implementation is	2. Testing activities planned parallel each

complete.	development stage.
3. Simple and easy to understand.	3. More complex but systematic approach.
4. Suitable for small, simple or low risk projects.	4. Suitable for projects with high reliability requirements.
5. Less emphasis on testing early in the project.	5. Testing is planned from the start.
6. Difficult to accommodate requirement changes mid - project.	6. Slightly better at handling requirement clarifications because of early test design.
7. Each phase must be completed before next starts.	7. Corresponding testing activities exist for each development phase..
8. Less expensive in planning but can cause costly issues later if bugs appear.	8. Higher planning costs but reduces rework costs through early defect detection.
9. Test plans are made after design and coding.	9. Test plans are created during requirement and design phases.
10. Bug detection is late in lifecycle.	10. Bug can be identified earlier.
11. Documentation heavy but focused more on development documents.	11. Equally emphasizes development and test documentation.
12. No clear mapping between development and testing phases.	12. Clear mapping exists
13. Ideal for straightforward, unchanging requirements.	13.. Ideal for projects with well defined and stable requirements.
14. Testing phases are separated and sequential.	14. Testing phase mirror development phases in a V shape.
15. User feedback comes only after completion.	15. Validation steps allow for some early user feedback.
16. Low risk identification and mitigation early on.	16. Higher risk management due to parallel planning of testing activities.
17. Maintenance phase may involve extensive rework if problems found late.	17. Fewer surprises during maintenance thanks to early and continuous testing.
18. Project timeline may stretch due to late error discovery.	18. Predictable timeline since error are caught earlier.
19. Design errors often propagate unnoticed until integration testing.	19. Design error caught during early verification activities.
20. Testing team may join late in the project.	20. Testing team is engaged from the beginning.

Question 11. According to you which model/methodology will suit for this project ? Justify your choice ?

Why the V model is the right choice for this project.

1. Early Testing Saves Cost and Time

Your project serves farmers who depend on timely, error-free access to fertilizers, seeds, and pesticides. The V-Model's parallel test planning ensures issues are caught early, avoiding costly rework after deployment.

2. High Reliability is Essential

In agriculture, mistakes like wrong product listings, incorrect orders, or system downtime can cause real-world crop failures. V-Model's strong verification and validation phases guarantee reliability.

3. Stable and Well-Defined Requirements

Your project requirements are largely clear upfront (farmers need a product listing, ordering system, delivery, etc.), which makes V-Model ideal — it excels when requirements are stable.

4. Critical User Safety

Since fertilizers and pesticides are sensitive products, any bugs could cause misuse or delays affecting crops. V-Model helps ensure critical functions (like order accuracy) are robust.

5. Traceability and Accountability

Each phase of V-Model has a corresponding testing phase, making it easy to trace problems back to their origin — essential for maintaining transparency in a CSR-funded project.

6. Ensures Compliance

CSR projects and agri-tech often require adherence to legal, safety, and quality standards. V-Model's structured documentation and testing help demonstrate compliance to stakeholders or auditors.

7. Supports Stakeholder Confidence

By engaging stakeholders through clear verification steps, V-Model shows sponsors and users (farmers) that quality is built into every stage, improving buy-in and trust.

8. Minimizes Post-Launch Surprises

Your audience includes farmers with limited digital experience; a buggy launch would harm adoption. V-Model's focus on early, thorough testing reduces chances of major failures at release.

Question 12. Prepare GANTT chart for this project ?

- **Gantt Chart Plan – V-Model Development Process.**

RESOURCES	WEEK 1	WEEK 20	WEEK 46	WEEK 65	WEEK 78
PROJECT MANAGER					
BUSINESS ANALYST					
JAVA DEVELOPER					
DB ADMIN					
TESTERS					
NETWORK ADMIN					

Question 13. Write about fixed bid vs billing projects ?

- **Fixed bid vs Billing projects.**

Aspect	Fixed Bid Project	Billing (Time & Material) Project
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Definition	The vendor commits to deliver the complete project at a pre-agreed, fixed price.	The client pays based on actual hours worked and resources used (hourly/daily/monthly rates).
Budget	Budget is agreed upfront and does not change unless scope changes.	Budget is flexible and varies depending on how much time/resources are consumed.
Scope Management	Changes in scope often require formal change requests and renegotiation.	Scope can be flexible and evolve, but costs grow with additional work.
Risk	Vendor bears most of the risk — if effort exceeds estimates, they absorb the extra cost.	Client bears more risk — if the project takes longer, they pay more.
Project Control	Vendor controls how resources are allocated to stay within the fixed budget.	Client can dynamically adjust requirements, timelines, and priorities.
Payment Model	Client pays a lump sum or milestone-based payments agreed in contract.	Client pays periodically (weekly, monthly) for actual time/resources spent.
Transparency	Less transparency required; vendor manages costs internally.	Requires detailed time tracking and reporting to justify billed hours.
When to Use	When requirements, timeline, and	When requirements are unclear, expected to

deliverables are clear, stable, and unlikely to change.

change, or when client prefers flexibility.

Question 14. Prepare timesheets of BA in various stages of SDLC ?

1. Design Timesheet of a BA

DATE	TASK	HOURS	REMARKS
DAY 1	Review requirement specs.	4	Confirm with stakeholders.
DAY 2	Create high-level design docs.	6	Draft initial design architecture.
DAY 3	Refine design with feedback.	5	Include suggestions from PM/dev.
DAY 4	Finalize wireframes/UI mockups.	6	Prepare for design sign-off.
TOTAL		21 hrs	

2. Development Timesheet of a BA

DATE	TASK	HOURS	REMARKS
DAY 1	Clarify requirements with developers.	4	Resolve developer queries.
DAY 2	Update requirement traceability matrix.	5	Ensure alignment with design.
DAY 3	Review initial builds for compliance.	4	Provide feedback.
DAY 4	Document minor changes.	3	Capture in version control.
TOTAL		16	

3. Testing Timesheet of a BA

DATE	TASK	HOURS	REMARKS
DAY 1	Prepare test cases.	5	Based on requirements
DAY 2	Review test cases with testers.	4	Confirm coverage
DAY 3	Participate in defect triage meetings	3	Prioritize fixes
DAY 4	Update requirements as per bugs found.	3	Clarify discrepancies
TOTAL		15	

4. UAT Timesheet of a BA

DATE	TASK	HOURS	REMARKS
DAY 1	Prepare UAT scenarios.	4	Based on business workflows.
DAY 2	Conduct UAT walkthroughs.	4	With users/stakeholders.
DAY 3	Capture UAT feedback.	4	Document issues and suggestions.
DAY 4	Coordinate UAT sign-off.	3	Confirm acceptance criteria met.
TOTAL		15 hrs	

5. Deployment & Implementation Timesheet of a BA

DATE	TASK	HOUR	REMARKS
DAY 1	Prepare deployment checklist.	3	Confirm pre-deployment steps.
DAY 2	Support data migration.	4	Ensure data integrity.
DAY 3	Coordinate with IT & PM.	3	Monitor deployment progress.
DAY 4	Document deployment outcomes.	3	Record any production issues.
DAY 5	Conduct post-implementation review.	3	Capture lessons learned.
TOTAL		16 hrs	