

CAPSTONE PROJECT – 1 ONLINE AGRICULTURE PRODUCTS STORE

PREP 1 (PART-1)

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Mr. Henry, after being successful as a businessman and has become one of the wealthiest persons in the city. Now, Mr. Henry wants to help others to fulfil their dreams. One day, Mr. Henry went to meet his childhood friends Peter, Kevin and Ben. They live in a remote village and do farming. Mr. Henry asked his friends if they are facing any difficulties in their day-to-day work. Peter told Mr. Henry that he is facing difficulties in procuring fertilizers which are very important for farm. Kevin said that he is also facing the same problem in-case of buying seeds for farming certain crops. Ben raised his concern on lack of pesticides which could help in greatly reducing pests in crops. After listening to all his friends' problems, Mr. Henry thought that this is a crucial problem faced not only by his friends but also by so many other farmers. So, Mr. Henry decided to make an online agriculture product store to facilitate remote area farmers to buy agriculture products. Through this Online Web / mobile Application, Farmers and Companies (Fertilizers, seeds and pesticides manufacturing Companies) can communicate directly with each other. The main purpose to build this online store is to facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet connectivity. Since new users are involved, Application should be user friendly. This new application should be able to accept the product (fertilizers, seeds, pesticides) details from the manufacturers and should be able to display them to the Farmers. Farmers will browse through these products and select the products what they need and request to buy them and deliver them to farmers location. Mr. Henry has given this project through his Company SOONY. In SOONY Company , Mr.Pandu is Financial Head and Mr Dooku is Project Coordinator. Mr.Henry , Mr Pandu , and Mr Dooku formed one Committee and gave this project to APT IT SOLUTIONS company for Budget 2 Crores INR and 18 months Duration under CSR initiative. Peter, Kevin and Ben are helping the Committee and can be considered as Stakeholders share requirements for the Project . Mr Karthik is the Delivery Head in APT IT SOLUTIONS company and he reached out to Mr Henry through his connects and Bagged this project. APT IT SOLUTIONS company have Talent pool Available for this Project. Mr Vandanam is project Manager, Ms. Juhi is Senior Java Developer, Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo are Java Developers. Network Admin is Mr Mike and DB Admin is John. Mr Jason and Ms Alekya are the Tester. And you joined this team as a BA.

Question 1 – BPM - 5 Marks

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

Answer 1 :

Goal:

- To facilitate convenient and reliable access to agricultural products (seeds, pesticides, fertilizers) for farmers, empowering them to improve their crop yield and income.
- To reach maximum customers at the right time to increase sales and profitability of the business of agricultural products.
- The main purpose to build this online store is to facilitate farmers to buy the agricultural products from anywhere through internet connectivity.

Inputs:

- Farmer requirements (crop type, desired products, quantity, location).
- Manufacturer product information (description, price, stock availability).
- Payment information (online transactions, cash on delivery).
- Developers, Raw materials /tie ups with companies for raw materials.
- Delivery boys to deliver purchased products, admin to manage the flow of products and orders. High quality photos/ images/ videos of the products, product specifications, brands, prices.

Resources:

- Internet, mobile, laptops , users, agricultural products, marketing team, testing team, development team, funds, manpower.
- Online platform (website and mobile app).
- Secure database for user and product information.
- Payment gateway integration , Logistics and delivery network.
- Customer support channels and Manufacturing companies.

Outputs:

- An online agriculture product application software .
- This store will be user friendly and it will facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet.
- connectivity.
- Platform for manufacturing companies to list agricultural products.
- Orders delivered successful and a successful website/application.

Activities:

- Product listing and management: Manufacturers register and manage their product details on the platform.
- Farmer browsing and ordering: Farmers search for products, compare prices, and place orders through the platform.
- Order processing and payment: Orders are processed, payments are validated, and farmers receive confirmation.
- Product delivery: Products are shipped to farmers through partnered logistics providers.
- Customer support: Farmers can contact customer support for order inquiries, technical assistance, and feedback.
- If product is not up to the mark/ no longer needed, then return or exchange of the item. Reverse payment to the original, payment mode/ wallet.

Value created to the end Customer:

- Convenience: Easy access to a wide range of agricultural products from the comfort of their homes.
- Transparency: Competitive pricing and product information readily available.
- Affordability: Potential cost savings through direct connections with manufacturers.
- Reliability: Secure online platform and trusted delivery network.
- Farmer satisfaction.

Question 2- SWOT -5 Marks

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

Answer 2 :

SWOT stands for Strenghts , Weaknesses , Opportunities and Threats.

- Here, Strengths and Weakness depends on the organization i.e (Internal factors) like for example we have java developers i.e one of the strength.
- Opportunities & Threats are outside of the organization.

<u>STRENGTHS :</u> • Strong brand recognition & reputation in online platform. • Availability of skilled Java developers SOONY might already have existing IT infrastructure and resources that can be leveraged. • Aligns with SOONY's CSR initiative, improving brand image and attracting talent. • The delivery head is quite resourceful as he got the project through his own connection. • All required manpower is available to make the project successful .It's a well-established company, to handle and deliver the project on time with an experienced team.	<u>WEAKNESSES:</u> • Existing e-commerce platforms and local suppliers might pose challenges. In this case we need to maintain the brand name, quality and standard of our products and business turnovers. • Farmers in remote areas might have limited internet connectivity and device limitations. Building a reliable delivery network in remote areas can be expensive and complex. • Have to deal with stakeholders with less understanding of digital apps , which may lead to lots of vague or incorrect information from them. Dependency on the external vendors, supply chain disruption and inventory management issues.
<u>OPPORTUNITIES :</u> • Value-added services: Offer additional services like soil testing, crop planning, and training to increase user engagement and revenue. • We will have expansion into new product categories and expansion of markets. • The app will open ways for more selling of farming product. Not just remote farmers. • Any one can order from the store 24*7. This will help buyers to have good sell and encourage adding better products.	<u>THREATS :</u> • Economy downturns / change in customer spending habit. • Crop prices and weather fluctuations: Farmer income can be volatile due to external factors, affecting their purchasing power. Large e-commerce companies might enter the market with significant resources. • Recruiting delivery person, might demand higher pay or allowances such as fuel/incentives etc. local influencers like the village head etc. can negatively influence the farmers in order to get a bribe from us to let us continue the project.

Question 3 – Feasibility study – 5 Marks

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

Answer 3 :

The feasibility study focuses on helping answer the essential question of “should we proceed with the proposed idea”. Possibility of doing a project within some constraints like technology, budget & time. Technology includes Software, Hardware and Trained Resources.

- **Technology** : Based on database servers, payment gateways and security.
- **Hardware**: laptop/desktop, printer, scanner, phone, projector.
- **Software**: Strong broadband connection, Java and other necessary applications, Cloud storage. Trained resources: Java developers, DB administrator, Business analysts, testers, network administrator.
- **Trained Resources** : Java developers, DB administrator, Business analysts, testers, network administrator.
- **Budget**:
 - Development costs: software licenses, frameworks, hardware (if needed).
 - Operational costs: server maintenance, payment fees, marketing, support.
 - ROI might be long-term (brand impact, rural development).
- **Timeframe**:
 - Define phases: development, testing, deployment, marketing.
 - Consider team capacity and external dependencies.

Question - 4 -Gap Analysis – 5 Marks

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

Answer 4 :

- Comparing of gap between current state and desired state.

AS-IS PROCESS (Current Challenges)	TO-BE PROCESS (Proposed Solution)
▪ <u>Farmers:</u> ▪ Inconvenient access to seeds, pesticides, fertilizers: Rely on local markets or middlemen, facing limited options and potentially inflated prices. ▪ Lack of information and quality controls: Limited access to product details, certifications, and potential for adulteration. ▪ <u>Manufacturers:</u> ▪ Limited reach to remote markets: Difficulty connecting with distant farmers, restricting sales and growth. ▪ Inefficient distribution channels: Dependence on middlemen increases costs and reduces profit margins.	▪ <u>Online platform:</u> Connect farmers directly with manufacturers, offering wider product variety, transparency, and competitive pricing. ▪ Mobile app accessibility : Ease of use and convenience. ▪ To avoid purchase of agricultural products manually.

Bridging the Gap:

- Gaps such as delay in delivery of products, finding manpower to work for remote areas, product shortage after order placed etc.
- Improved access and convenience: Farmers gain saving time and resources.

- Online platform facilitates direct communication with manufacturers, increasing trust and product quality.
- Enhanced market reach: Manufacturers connect with a wider farmer base, expanding sales and brand awareness.

Result :

- Reduced wastage, improved income of sellers/dealers, increased productivity of farmers, convenient method, time saving, more employment of delivery boys/packers etc.

Question 5 – Risk Analysis – 10 Marks

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

Answer 5 :

More budget can be required to maintain the continuity of the project without any obstacle, old uneducated farmers can oppose the digitization and may influence the young farmers to not support.

Following are the BA Risks:

- Improper information at requirement gathering .
- The period of project development .
- Choosing improper elicitation technique .
- Relevant climate study for crops.
- Change requests given by stakeholder in the last phase .
- Multilanguage input for the farmers.
- Coding and Java developer coordination are important.

Projects Risks:

- Farmers are not used to digital thing.
- Low Internet speed of internet in remote areas, where farmers live.
- Old farmers prefer to buy from the store only .
- Farmers return the product, saying not needed, in case of COD.
- Multiple-time return or exchange of products.

Internal risk :

- High operating expense, technical issue.
- Storage of products should be taken care as the warehouses should be checked and monitored on regular basis so that pests and rodents do not spoil the goods.

External risk :

- Competition from external e-com website, change in government policies that affect e-com industry.

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

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

Answer 6 :

A RACI chart, also called a RACI matrix, is a type of responsibility assignment matrix (RAM) in project management. In practice, it's a simple spreadsheet or table that lists all stakeholders on a project and their level involvement in each task, denoted with the letters R, A, C or I.

- Responsible is someone who performing a task.
 - Accountable is the decision maker assigns tasks.
 - Consultant is where we need to ask expertise before proceeding.
 - Informed is who we need to let know after all is done.
-
- To operate efficiently and get things done, everyone needs to know who is R,A,C,I. This matrix is nothing but just mapping tasks/activities against their roles.
 - Find out the key stakeholders who can take decisions and who are the influencers.

Below is the list of Stakeholders.

Project Stakeholders :

- Business Analyst- B.Vaishnavi
 - Delivery Head - Mr Karthik
 - Project Manager – Mr Vanadanam
 - Development Team – MS Juhi, Mr. Teyson, Ms Lucie, Mr Tucker, Mr Bravo
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- Testing Team - Mr Jason and Ms Alekya
 - Network Admin - Mr Mike and DB Admin is John.

Business Stakeholders :

- Business Sponsor - Mr. Henry
- Influencers/Key Stakeholders - Peter, Kevin and Ben.
- Finance team - Mr Pandu
- Project Team - Mr Doku

RACI - Responsible (R) - Accountable (A) - Consulted (C)- Informed (I)								
Role	Mr Henry - Project Sponsor	Peter, Kevin, Ben (Key Stakeholders)	Mr. Karthik – DH	Mr. Vandanam - PM	Ms. Juhi Sr Java Dev	Teyson, Lucie, Bravo & Tucker - Java Dev	Mr. Jason & Ms. Alekya - Testers	Vaishnavi - BA
Requirement Gathering		C		A/I		A		R
Requirement Analysis				I				R
Development				R/A	C/A	R		C
Testing				R/A	I		R	I
Implementation			R	I	I			R
UAT	I			R/A				C

Question 7 – Business Case Document - 8 Marks

Help Mr Karthik to prepare a business case document.

Answer 7 :

Following points are to be covered:

- Why is this project initiated?
- What are the current problems? GAP analysis.
- What are the resources required ? 14 -15 people.

- How much organizational change is required to adopt this technology? A percentage

how much change can be done .

- With this project how many problems could be solved ?
- Time frame to recover ROI .
- How to identify stakeholders? Via RACI we can identify.

1. Why is this project initiated?

- Mr. Henry identified need for farmers to deliver them agriculture products on their doorstep and opportunity for himself to capitalize an opportunity.

2 What are the current Problems?

- Difficulties in procuring fertilizers which are very important for farm. Buying seeds for farming certain crops and lack of pesticides which could help in greatly reducing pests in crops.

3 With this project, how many problems could be solved?

- This project will facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet connectivity.

4 What are the resources required?

- Financial resources such as banks, investors.
- Manpower such as packers, delivery boys.
- Developers and testers to test and develop the project.
- Sellers/Dealers to tie up and sell products online.
- Balsmiq , Visio, Java, Azure, Power BI In the this business case documents.
- MR. Karthik needs to analyze the things like- A business case is a package of information , analysis and recommendations.
- A business case is prepared by Sr.BA, Business Architect & Pre-sales team.
- A business case also helps in identifying key stakeholders who are affected by the problem. 14-15 people of dedicated team is required.
- To complete this project we need PM , BA, Software developers, testers, technical team, DB.

5 How many organizational changes is required to adopt this technology?

- Unpredictable because changes might occur or not occur it depends.

6 What is the time frame to recover ROI?

- 1 year.

7 How to identify stakeholders?

- Stakeholders are identified on below basis:
- Understanding purpose of identifying stakeholders.
- Determine their impact on the project.
- Their needs in relation to the project.
- Mr Henry, Peter, Kevin, Ben, Farmers and sellers are the prime stakeholders.
- Following are the high-level scope for this engagement:
- Requirement Study.
- Design.
- Testing.

- Development.

Question 8 – Four SDLC Methodologies - 8 Marks

The Committee of Mr. Henry , Mr Pandu , and Mr Dooku and Mr Karthik are having a discussion on Project Development Approach.

Mr Karthik explained to Mr. Henry about SDLC. And four methodologies like Sequential Iterative Evolutionary and Agile. Please share your thoughts and clarity on Methodologies.

Answer 8 :

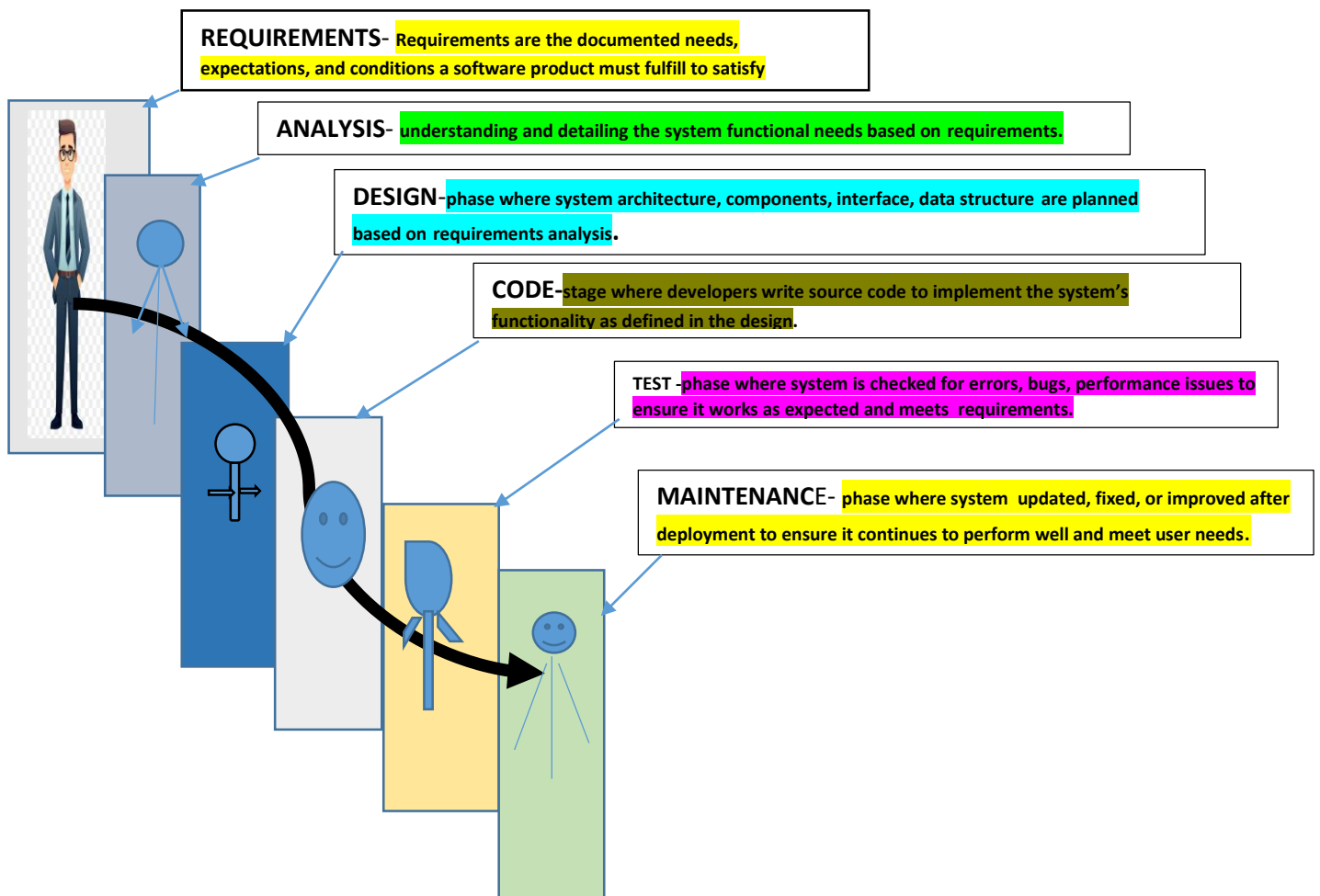
1. Sequential – waterfall

The **Sequential Method**, also known as the **Waterfall Model**, is a **linear and step-by-step approach** to software development where each phase of the Software Development Life Cycle (SDLC) is completed **one after the other** in a fixed order.

In this method, entire project is delivered at the end of the deadline. Client can't use the application in the midway.

In this sequential –waterfall methodology below are the stages:

1. Requirement gathering-
2. Requirement analysis
3. Design
4. Development- Coding
5. Testing
6. UAT
7. Configuration management
8. Deployment



- Teams are large and everyone on the team like business analysts, architects, developers, tester, operations, etc. all work within their own divisions.
- After the entire architecture, data structures, and functional designs are ready, the development team starts coding the software.
- Only after all the code are written, integration and validation start.
- This means that the code is not tested before the Testing phase and only unit tests are executed during development.
- Finally, the software finishes testing and is deployed to production and for the first time, where users can put it across real time testing.
- The Waterfall method can take several months or even years to complete, which means, if it doesn't meet user expectations, changes are extremely slow and expensive.
- In many cases, defects are not recognized / fixed at all.

2. The Iterative Model – Rational Unified process :

The Rational Unified Process is an iterative software development process framework. RUP is based on a set of building blocks describe what is to be produced, the skill required and setup by step explanation how we can achieve or develop goal.

It has four project life cycle phase

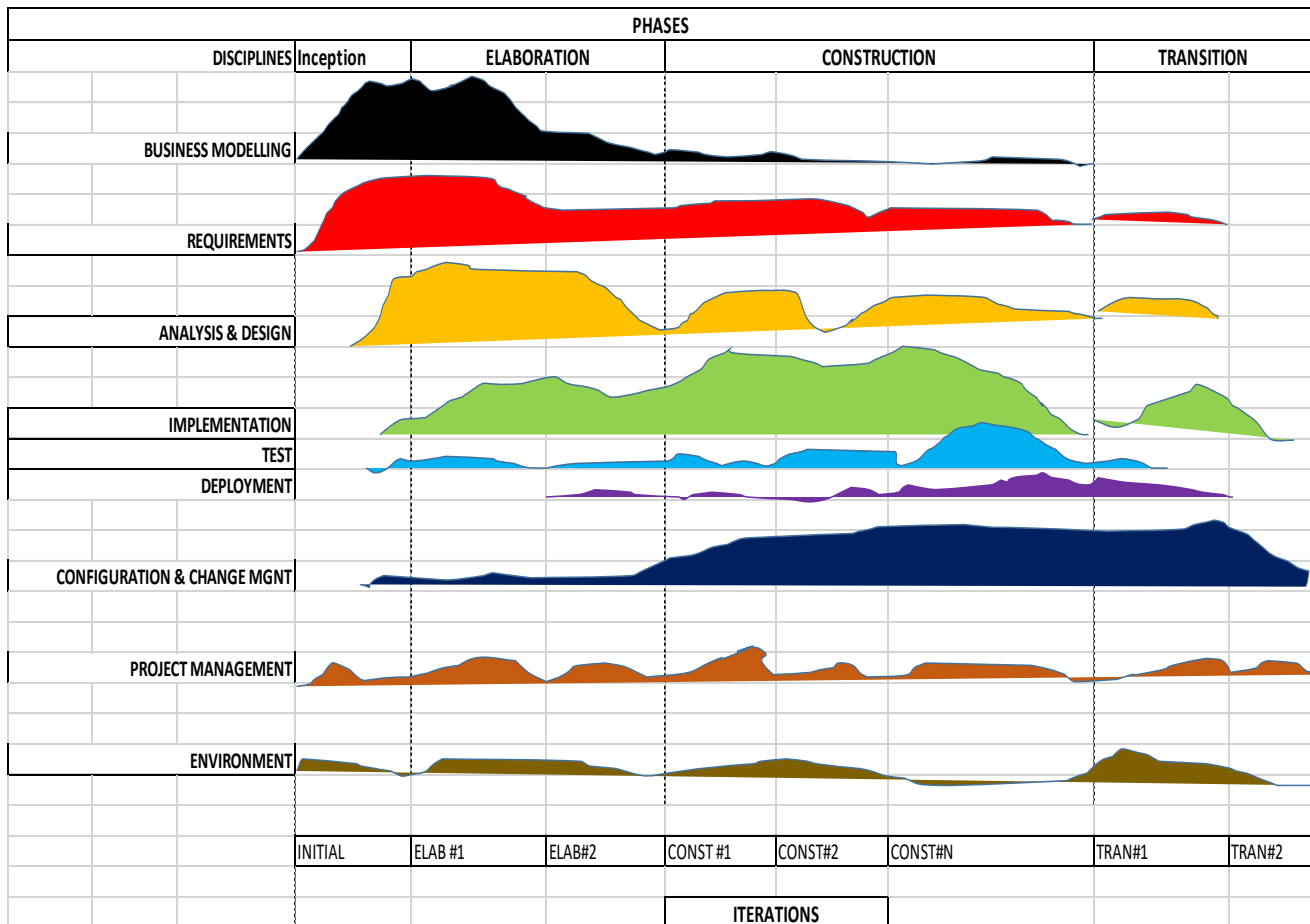
i) Inception- what we build.

ii) Elaboration- del or design need to deliver .

iii) Contraction- implementation .

iv) Transition- delivery, defect correction, UAT.

- In this method APP is delivered in the modules.
- Each module is delivered per year in a given frequency of time. Client can start using the part of the application after delivery.
- The whole process is divided into a particular number of iterations and during each of them developers build a limited number of features.
- With the Iterative Model, only the major requirements are known from the beginning. Based on these, the development team creates a quick and cheap first version of the software. Then, as additional requirements are identified, additional iterations of the software are designed and built.
- Each iteration goes through all the phases of the SDLC, and these cycles are repeated until completion. It is common for the team to work on several SDLC phases at the same time.



3. Evolutionary - Spiral Model

The **Spiral Model** is a software development model where the project is developed in repeated **cycles (spirals)**, with each cycle involving planning, risk analysis, development, and testing. The software improves and evolves with each loop.

Combines ideas from both **waterfall** and **iterative** models. It focuses on **risk analysis** and **repeating phases** to improve the product step-by-step.

"Build a little, test a little, improve it, then repeat."

The spiral model has four phases:

- **Planning:**
 - Understand what the customer wants (requirements).
 - Set goals for the cycle.

- **Risk Analysis:**
 - Identify possible problems (risks).
 - Plan how to avoid or solve them.
- **Engineering (Development & Testing):**
 - Design and build the part of the software.
 - Test it to make sure it works.
- **Evaluation:**
 - Show the results to the customer.
 - Get feedback and decide next steps.

4. Agile- Scrum

Agile is a **project management methodology** focused on **flexibility, collaboration, customer feedback**, and **rapid delivery** of small, functional pieces of a product.

Scrum is one of the most popular **frameworks** used to implement Agile principles.

- Agile is the most popular method to use. In this methodology, project is getting delivered from the beginning. Clients start using the APP immediately. Continuous support goes on. Change request is possible at each phases during the delivery.
- This model can be implemented in which project the faster delivery is required. No documentation. There are 12 principles of this software – Late changes are accepted, All projects and business people should work together daily. Fast delivery of software. It has face to face conversation within Development team.

The **four main values of Agile** come from the **Agile Manifesto**.

4 Core Values of Agile:

1. **Individuals and interactions**
over processes and tools
→ Focus on people and communication, not rigid systems.
2. **Working software**
over comprehensive documentation
→ Deliver usable software quickly, rather than spending too much time on paperwork.
3. **Customer collaboration**
over contract negotiation
→ Involve the customer throughout the process, instead of just following a fixed agreement.
4. **Responding to change**
over following a plan
→ Be flexible and adaptive, rather than sticking strictly to initial plans.

The 12 Principles of Agile :

- **Customer satisfaction through early and continuous delivery**
Deliver valuable software frequently to keep customers happy and involved.
- **Welcome changing requirements, even late in development**
Embrace change to give the customer a competitive advantage.
- **Deliver working software frequently**
From a few weeks to a couple of months — shorter timescales are preferred.
- **Business people and developers must work together daily**
Close collaboration ensures clear understanding and quick decisions.
- **Build projects around motivated individuals**
Give them the environment and support they need, and trust them to get the job done.
- **Face-to-face conversation is the most effective communication**
Direct communication helps avoid misunderstandings and speeds things up.
- **Working software is the primary measure of progress**
Not reports or documents — actual functioning software is what matters most.
- **Agile processes promote sustainable development**
Teams should be able to maintain a constant pace indefinitely — avoid burnout.
- **Continuous attention to technical excellence and good design**
Leads to better agility and high-quality software.
- **Simplicity — the art of maximizing the amount of work not done — is essential**
Do only what's necessary; avoid overcomplication.
- **The best architectures, requirements, and designs emerge from self-organizing teams**
Empowered teams make better decisions and produce better results.
- **Regularly reflect and adjust behavior to improve**
Teams should frequently inspect and adapt to become more effective.

SCRUM

It can be implemented either at the beginning of the project or when you sense that project is falling behind schedule. This model exercises full Admin Power.

- **Scrum Team** : Project resources are grouped as Scrum teams which comprises of BAs, Developers, Testers. Each team size will on average be 7-8.
- **Product Owner** :
 - He will decide what needs to be in the product and will be responsible for how the product has to be. He will regularly interact with customers and BA's .
- **Scrum Master** : This role is all about making sure the team is following Agile principles, values, and processes with the sprint.

- **Product burndown** : It shows how much work was left to do at the beginning of each sprint.
- **Sprint**: This is the period that team decides to deliver their objective. Normally a sprint period will be for 2 weeks.

Meetings :

- **Sprint Planning Meeting** :

It happens at the beginning of each sprint and team decides on what they will be delivering in the sprint.

- **Daily Scrum Meeting** :

Happens each day where team will just answer 3 questions:

1. What did you do today?

2. What will you do tomorrow?

3. Are there any impediments that are slowing or stopping you?

- **Sprint Review Meeting** – This happens at the end of the sprint where team will demo the completed stories to product owner and get it cleared.
- **Sprint Retrospective Meeting** – This happens at the end of the sprint where team will answer these 3 questions:

- 1) What went well in the sprint?
- 2) What did not go well?
- 3) What are the required areas of improvements in next sprint?

- **Product Backlog:** all Stories- all requirements

- **Burn down chart**

A burn down chart is a graphical view of the remaining work left versus the time in an iteration. A project backlog or hours can be expressed on the vertical axis, while time is indicated on the horizontal axis. A burn down chart is often used to determine when work will be completed on a project or an iteration.

- **Epic**

An epic is a set of related user stories. They are also considered a "really big user story."

- **Iteration**

- An iteration is an iterative development concept that establishes a short time frame to deliver a set of software features or user stories. Each iteration includes typical waterfall activities such as analysis, design, development, and testing, yet they are time boxed within a one to four-week window. At the end of an iteration, the progress is reviewed with the business customer, and recommended changes can be incorporated into future iterations.

- **Planning Poker**

- Planning Poker is an estimation game created by Mike Cohn of Mountain Goat Software.
- Planning Poker is used to estimate individual user stories as a team activity. The team gathers and reviews user stories one at a time. As stories are presented, the team discusses the user story and provides an estimate of the work from their own deck of cards. All estimates are presented and discussed until the team arrives at a consensus.

- **Release**

- A release is a set of working software delivered to the business customer resulting from a set of iterations. During release planning, teams will review a product backlog to organize user stories into the specific releases and iterations that deliver a functional product to the business customer.
- **Sprint**
- A sprint is a scrum-based agile methodology concept that is similar to an iteration. A sprint is time boxed to deliver a specific set of user stories and produce working features within a set time period. During sprint planning, the business customer or product owner specifies the user story priority, and the development team commits to the scope for a given sprint. During a sprint, user stories can be removed from the sprint scope, but new stories cannot be added; this allows project teams to focus on the goals of the sprint and deliver rapidly.
- **Story points**
- A story point is a relative estimation method used to determine the size of user stories so teams can determine how much work can be done during an iteration. Story points can be expressed in a simple Fibonacci sequence, t- shirt sizes, or a relative number. By adding up the number of user stories and associated story points, the project team can establish its velocity for future iteration planning.
- **BA's Role in Agile Scrum:**
- To Start with, once a project is kicked off, BA does the requirement Planning, then conducts various requirement gathering sessions and analyses the requirement.
- Finally, the requirement is listed as 'FEATURE LIST'. This Feature list is drafted by BA and discussed with Product Owner.

From the Feature List, BA identifies the Epic and breaks them as Themes and then to User Stories.
User Stories will have below Information:

As a

<User>

I Want to

<What is the Purpose>

So that

<What you gain by this story>

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

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

Answer 9 :

As a BA I would be choosing Waterfall methodology because:

It is a simple & easy to understand model. The complete process is divided into several phases. One phase should be completed to reach the next phase.

The first phase is requirement gathering and analysis. The requirements are then documented. It is called the Software Requirement Specification (SRS). The next is the swot system design phase. It is to design the entire software architecture. Next phase is the implementation phase. It is to start coding the small units. These units are combined to form the complete system and tested in the integration and testing phase. After the testing is completed, the software is distributed to the market. The activities such as maintenance of the software and adding new features come under deployment and maintenance.

Question 10 – Waterfall Vs V-Model - 5 Marks

20 Write down the differences between waterfall model and V model.

Answer 10:

Feature	<u>Waterfall Model</u>	<u>V-Model</u>
Structure	Sequential, linear phases.	Iterative, with corresponding testing phases.
Flexibility	Rigid.	More adaptable.
Risk Management	Less emphasis on early risk mitigation.	Early identification and mitigation of potential risks.
Documentation	Documentation-heavy.	Less emphasis on documentation.
Suitable for	Stable projects with well-defined requirements.	Projects with some uncertainty in requirements or projects where early risk mitigation is crucial

Question 11 – Justify your choice - 3 Marks

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

Answer 11 :

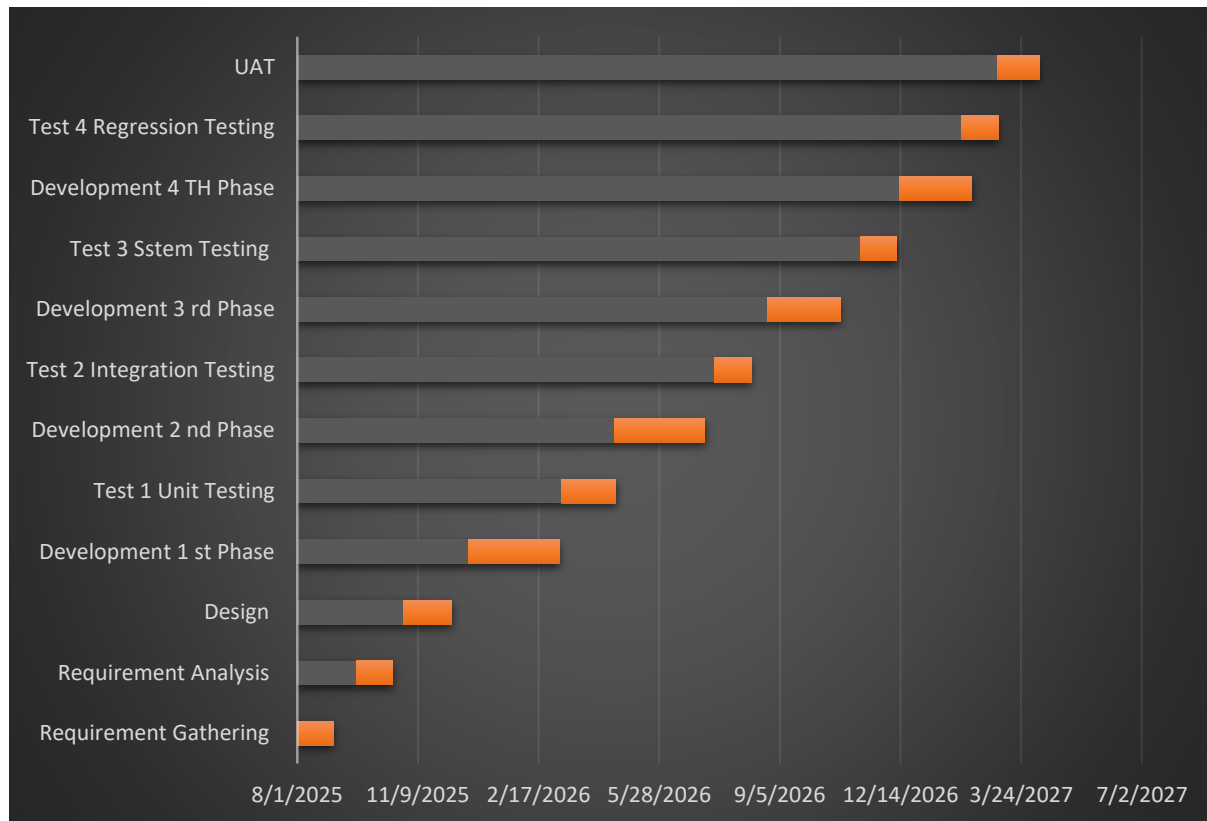
As there could be lack of domain knowledge, water fall model would be good, as it has structured approach with fix stages . At the end of each phases, reviews are done to know if the project is going on the correct path or not.

Waterfall model is an easy to understand and simple model. The complete process is divided into several phases. One phase should be completed to reach the next phase.

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 12:



Tasks	Start date	End date	Time (in days)	weeks
Requirement Gathering	8/1/2025	9/18/2025	30	4
Requirement Analysis	9/19/2025	10/27/2025	30	4
Design	10/28/2025	12/20/2025	40	5
Development 1 st Phase	12/21/2025	3/5/2026	75	8
Test 1 Unit Testing	3/8/2026	4/20/2026	45	6
Development 2 nd Phase	4/21/2026	7/10/2026	75	8
Test 2 Integration Testing	7/13/2026	8/23/2026	30	4
Development 3 rd Phase	8/26/2026	11/10/2026	60	6
Test 3 Sstem Testing	11/11/2026	12/12/2026	30	4
Development 4 TH Phase	12/13/2026	2/2/2027	60	6
Test 4 Regression Testing	2/3/2027	3/3/2027	30	4
UAT	3/4/2027	4/30/2027	35	4
Total			540	63

Question 13 – Fixed Bid Vs Billing - 5 Marks

Explain the difference between Fixed Bid and Billing projects.

Answer 13:

Fixed Bid Model : In this model, the vendor commits to a set amount of money for a project with defined deliverables. These are usually domestic projects when a company has specific elements in their project, such as predetermined data, a fixed scope, or a strict budget¹. The fixed bid project is charged as a single, flat fee, irrespective of hours spent. This model features predefined project requirements, fixed time frames, and a fixed budget. As the name implies, this model is about freezing your project requirements and specifications together with the costs before development begins. For any extra work that was not specified in the documentation, client must pay extra. The fixed bid model can be beneficial for companies that have a clear understanding of their project requirements and are looking for cost predictability. However, it can also bring some confusion when it comes to choosing which model is best to handle your business.

Billing Model : In this model project is billed based on the number of hours worked, at the hourly, daily, or monthly fixed billing rates assigned for that project. This model is used when there is no restriction on budget, it can be increased, based on the work required by the team.

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

- 1.Design Timesheet of a BA.
2. Development Timesheet of a BA .
- 3.Testing Timesheet of a BA .
- 4.UAT Timesheet of a BA .
- 5.Deployment n Implementation Timesheet of a BA.

Answer 14:**1. Design Timesheet of a BA: Sheet updated.**

Employee Name	B Vaishnavi
Department	Business Analysis
Activity	Design Timesheet
Supervisor	Mr. Vandanam
Hourly Rate	\$ 70 per hour

Day 1	Date	Task	Logging In	Logging Out	Hours
Friday	17-07-25	Preparing Test cases	8:00 AM	9:00 AM	1:00
		Allocating the requirements	9:00 AM	10:00 AM	1:00
		Identifying improvement opportunities	10:00 AM	11:00 AM	1:00
		Assessing Design options	11:00 AM	12:00 PM	1:00
		Assessing Design options	1:00 PM	2:00 PM	1:00
		Estimating Benefits and Costs	2:00 PM	3:00 PM	1:00
		Communicate with client about Designs & Solutions	3:00 PM	5:00 PM	2:00
		Recommending Solutions	5:00 PM	6:00 PM	1:00
Total Hours					9:00
Overtime					1:00
Total Pay					\$ 630

2. Development Timesheet of a BA.

Employee Name	B Vaishnavi
Department	Business Analysis
Activity	Development Timesheet
Supervisor	Mr. Vandanam
Hourly Rate	\$ 70 per hour

Day 1	Date	Task	Logging In	Logging Out	Hours
Monday	20-07-25	Coordinate meetings with the Team	8:00 AM	9:00 AM	1:00
		Checking on the approvals after each Development phase	9:00 AM	11:00 AM	2:00
		Clarifies all queries of technical team at the End of each Phases	11:00 AM	1:00 PM	2:00
		Outlining Business Requirements	1:00 PM	2:00 PM	1:00
		Working on Change in requirements in development stage from clients	2:00 PM	4:00 PM	2:00
Total Hours					8:00
Total Pay					\$ 560

3. Testing Timesheet of a BA

Employee Name	B Vaishnavi
Department	Business Analysis
Activity	Testing Timesheet
Supervisor	Mr. Vandanam
Hourly Rate	\$ 70 per hour

Day 1	Date	Task	Logging In	Logging Out	Hours
Tuesday	21-07-25	Work with Testing team to create system test plans	8:00 AM	9:00 AM	1:00
		Create and execute the system test cases	9:00 AM	11:00 AM	2:00
		Review system cases prepared by Testing team	11:00 AM	1:00 PM	2:00
		Provide requirements clarifications when required by Testing Team.	1:00 PM	2:00 PM	1:00
		Take signoff from client on client project acceptance form.	2:00 PM	4:00 PM	2:00
Total Hours					8:00
Total Pay					\$ 560

4.UAT Timesheet of a BA

Employee Name	B Vaishnavi
Department	Business Analysis
Activity	UAT Timesheet
Supervisor	Mr. Vandanam
Hourly Rate	\$ 70 per hour

Day 1	Date	Task	Logging In	Logging Out	Hours
Wednesday	22-07-25	Develop the detailed UAT test Plan	8:00 AM	9:00 AM	1:00
		Develop the test case scenario	9:00 AM	11:00 AM	2:00
		Create UAT test cases	11:00 AM	1:00 PM	2:00
		Test case data preparation	1:00 PM	2:00 PM	1:00
		Run the test cases	2:00 PM	3:00 PM	1:00
Total Hours					7:00
Total Pay					\$ 490

5.Deployment n Implementation Timesheet of a BA

Employee Name	B Vaishnavi
Department	Business Analysis
Activity	Deployment and Implementation Timesheet
Supervisor	Mr. Vandanam
Hourly Rate	\$ 70 per hour

Day 1	Date	Task	Logging In	Logging Out	Hours
Thursday	23-07-25	Design RTM and forward to client	8:00 AM	9:00 AM	1:00
		Coordinate to complete manual	9:00 AM	11:00 AM	2:00
		Training sessions for end user	11:00 AM	3:00 PM	4:00
		Prepare a lesson learning from project	3:00 PM	4:00 PM	1:00
Total Hours					8:00
Total Pay					\$ 560

