**Capstone Project Part -1**

**Notes -**

Business Owner – Henry

Best friend of owner – Peter, Kevin , and Ben

1.Peter problem – difficulty in procuring fertilizers

2. Kevin problem – problem in buying seeds for certain crops

3. Ben – lack of pesticides

Product – Online Agriculture product store ( so that farmers and companies i.e fertilizer , crop , pesticides can talk directly)

Application should –

1. Accept product (fertilizer , seeds ,pesticides )from manufacture
2. Display them to farmers
3. Farmers browse the product
4. Select product
5. Request to buy
6. Deliver to location

**Soony Company**

a. Financial Head – Pandu

b. Project Cordinator – Dooku

**c. Henry gave project to his company Soony**

Above 3 made a committee and gave this project to **APT IT SOLUTIONS for 2 CR**

Durations – 18 months ( under CSR initiative )

Peter , kevin , ben helping committee and considered as **stake holders**

**1.Delivery Head – Mr Kartik**

**APT COMPANY** has a talent pool available for project.

 2. Project Manager - - Vandanam

 3. Senior Developer – Juhi , Teyson , Lucie , Tucker , Bravo

4. Network admin – john

5. Tester – Jason , Alekya

6. BA – Myself

 **Questions and Answers**

Answer 1 – **Business Model for an Online Agricultural Store**

Business Model contains how company creates ,delivers , and capture value.

**Goal**

1. Primary Goal – Platform to purchase agro products such as seeds , fertilizers
2. Secondary Goal – Enhance product and awareness of customer

**Input**

Product Stocks

Technology – mobile app , website , payment gateways , customer service systems

Suppliers – Manufacturer , Wholesaler

Logistics – partnership with shipping co.

Customer feedback

Output

Product delivery

Customer support

Awareness of knowledge

**Resources**

Ecommerce Platform

Distribution center

Supply chain

Customer support

Marketing tools

**Key Activities**

Product Procurement

E commerce operations

Marketing and promotions

Logistics and Delivery

Customer service and support

Data analytics (to analyze customer behavior)

**Value Created for the end customer**

Convenience

Wide range of product selection

Competitive pricing

Expert advice

Timely delivery

High quality product

Personalized experience

**Answer -2 SWOT Analysis**

Strength

Convenience

Wide product range

Growth Market demand

Scalability

Weakness

High initial investment

Logistics challenges

Dependence on 3rd party

Complexity in product information

Opportunities

Expanding market for online

Educational content

E commerce growth

Partnership with agri tech companies

Sustainability

**Threads**

 Intense competition

Supply chain disruption

Changing regulations

Price sensitivity

Technology dependence

**Answer -3 Feasibility Test**

Feasibility Test help to asses whether the proposed business model is viable from finance, technical and operational and market perspectives.

**Market Feasibility**

Target Market – Farmers , Agri business

Market need – Affordable , hight quality

Risk factor – market saturation , trust issues

**Technical Feasibility**

Platform design

Product management

Order fulfillment – integrate with logistics for real time tracking , order management and delivery updates

**Technology Requirements**

E commerce platform

Cloud infrastructure for hosting ( AWS , Google Cloud )

Payment Gateways

CRM

**Operational Process**

Inventory Management

Customer support

Cyber security

**Finance Feasibility**

Budget Estimate

Inventory

Marketing expense

Employee salaries

**Answer 4 GAP Analysis**

GAP Analysis involve assessing the difference between traditional offile and online

Existing – Store visit , limited product , lack of personalization , time consuming

New – convenience , wide product , personalized experience , faster transactions

1. Process Gap – Customer experience – offline shopping provide interaction with product immediately which is lost in online however online store compensate with convenience , personal recommendations.
2. Inventory Gap – Online provide great efficiency
3. Order fulfillment Gap – delivery time and shipping cost
4. Customer support Gap – personal interaction and technical challenges
5. Marketing gap – local reach and global reach , Customer engagement
6. Cost gap – initial set up cost and logistics cost
7. Technology gap – technical challenges , learning curve

**Answer -5 Risk Analysis**

1. Market Risk – Demand of product is seasoned
2. Competition
3. Regulatory changes
4. Financial risk – cash flow issues , cost over run, price sensitivity
5. Operational risk – supply chain disruptions, delivery challenges , quality control
6. Process Risk – risk related to execution
7. Technical risk – technical failure , cyber threats , integration challenges
8. Project management risk – delay in development, inexperienced team , scope creep

**BA Risk :**

1. Data quality issue – Problems occur such incomplete data and inventory , crop types and pricing. Therefore, BA ensure in rigorous data validation and regular audit.
2. Unclear requirement – stakeholders may provide vague or conflicting requirements. Therefore a ba role is to use proper elicitation techniques like interviews , workshops , and user stories.
3. Lack of domain knowledge – Misunderstanding agriculture terminology , seasonality or supply chain dynamics. Here BA role is to avoid this risk is conduct through domain research and consult SME (Subject matter expert)
4. Technology Integration challenges – Difficulty integrating legacy systems with the new platform. BA role can be defining clear API /Interface requirements and coordinates with IT teams.

**Project Risk** :

1. Scope Creep – Risk is continuous addition of new features during development. It can be done solved through strong control process , clear scope definition and stake holder agreement.
2. Budget Overruns – project exceeding the allocated budget due to unforeseen issues or poor planning . Mitigation here are detailed cost estimation , contingency reserves , regular budget tracking.
3. Delayed Timelines – Project phase not completed on schedule due to dependencies , resource issues or rework. Mitigation is do realistic planning , buffer periods , milestone tracking.
4. Inadequate Testing – Risk is platform goes live with bugs or poor usability. Mitigation is early and continuous testing , user feedback and loops , pilot launches.

**Process Risk:**

1. Inefficient order fulfillment – risk is delay in processing orders due to manual steps or unoptimized workflows. Mitigation here is automation workflow , real time inventory tracking , and standard operating procedures.
2. Inaccurate Inventory management – Stock mismatch or unavailability of high demand items. Mitigation is use reliable inventory systems with alerts and demand forecasting.
3. Poor Supplier Cordination - Lack of visibility or delays in supplier deliveries. Mitigation is established clear SLA , integrated supplier portals , regular performance review.
4. Lack of process documentation – critical knowledge is not documented , causing confusion or delays when team members leave. Mitigation is Maintain upto date process maps , sop and knowledge base.

**Answer 6 Stakeholder Analysis**

1. Internal stakeholder – who are directly involved in execution of project
2. Project team ( high power and high interest) , manage closely (action plan – regular meeting and updates)
3. Founders , owners , investors ( high power and hight interest) manage closely ( Action plan – regular updates on progress and key decisions)
4. Customer support team (low power and high interest) keep informed ( Action plan – keep engaged with digital marketing)
5. Logistica and warehouse team ( medium power and medium interest) keep informed
6. External stakeholder
7. Suppliers/vendors ( medium power and high interest) keep satisfied
8. Customer ( low power and high interest) keep informed
9. 3rd party logistics provider ( keep informed)
10. Technology partner
11. Regulatory bodies ( high power low interest)
12. Local communities ( low power and medium interest) ( Action plan – engage thru local outreach)
13. Marketing partners

| **Task / Activity** | **Store Manager** | **Warehouse Team** | **Customer Support** | **Marketing Team** | **IT Team** |
| --- | --- | --- | --- | --- | --- |
| **1. Product Listing** | A | C | I | C | C |
| **2. Inventory Management** | C | R/A | I | I | C |
| **3. Order Processing** | I | R | C | I | I |
| **4. Customer Service Handling** | I | I | R/A | I | I |
| **5. Website Maintenance** | I | I | I | I | R/A |
| **6. Marketing & Promotion** | I | I | C | R/A | C |
| **7. Payment Gateway Integration** | I | I | I | I | R/A |
| **8. Delivery & Shipping** | I | R/A | C | I | I |
| **9. Reporting & Analytics** | A | I | I | C | C |

**RACI matrix** is a tool used to assign roles and responsibilities to different stakeholders in a project. RACI stands for:

* **R** – Responsible: Who actually does the work.
* **A** – Accountable: Who is ultimately answerable for the task.
* **C** – Consulted: Who provides input or expertise.
* **I** – Informed: Who needs to be kept up-to-date.

**Answer – 7 Business Case Document**

Executive summary – it provide concise proposed online store , its purpose and expected benefit

Project name –

Project sponsor –

Project manager –

Business objectives –

Expected benefits

1. Revenue growth
2. Market expansion
3. Convenience
4. Customer satisfaction

Business problem and opportunities

Problem – limited access , traditional supply chains

Opportunities – e commerce growth , untapped market

Project objectives –

Short term objectives

Develop e commerce platform and integrate

Establish partnership

Medium objectives –

Increase traffic to online store

Enhance website

Long term objective –

Expand the product range

Scale operations

Achieve sustainable profitability

Scope of the project

Includes –

Development of website

Integration of payment

Customer services

Excluded –

International shipping beyond target region

In house manufacture

Large scale partnership

Financial analysis –

Initial investment

Revenue projection

Cogs

Operating expense

Market analysis

Targeted market

Risk assessment and mitigation

Implementation plan –

Phase 1 plannig and design

 Phase 2 development and set up

Phase 3 launch and operation

Phase 4growth and scaling

**1. Executive Summary**

**Project Title**: online store

**Objective**:
To establish a leading online platform that provides a wide range of high-quality agricultural products, including seeds, tools, fertilizers, equipment, and other essentials for farmers and agricultural enthusiasts. The goal is to serve farmers, garden enthusiasts, and small agricultural businesses by providing an easy-to-use, reliable e-commerce platform with efficient delivery services.

**Business Opportunity**:
With the increasing demand for agricultural products, both locally and internationally, there is a significant opportunity to leverage the growing e-commerce trend in the agriculture sector. Online shopping is transforming how consumers purchase agriculture-related products, and our online platform will provide an efficient and accessible solution.

**Vision**:
To become a one-stop online platform for agricultural products, offering unparalleled customer service and a seamless online shopping experience for farmers, gardeners, and agricultural businesses.

**Mission**:
To empower farmers and agricultural stakeholders by providing easy access to high-quality products, resources, and information, enabling them to enhance productivity and improve their businesses.

**2. Problem Statement**

Farmers and agricultural businesses face challenges accessing quality agricultural products from local suppliers, including:

* **Limited product variety**: Many local stores offer a limited selection of products.
* **Inconsistent availability**: Local retailers may not always stock the required products.
* **Geographical constraints**: Farmers in remote areas often struggle to access quality products.
* **Inconvenient purchase process**: Traditional methods of procurement can be time-consuming and inefficient.

Our online agriculture platform will address these challenges by providing:

* A comprehensive range of agricultural products.
* Convenient online ordering with home delivery.
* Reliable availability of products.
* Easy-to-use interface and fast customer support.

**3. Project Scope**

* **Platform Features**:
	+ **E-commerce**: Online store with categorized product listings (seeds, fertilizers, machinery, tools, etc.)
	+ **Payment Gateway Integration**: Secure payment options, including credit/debit cards, PayPal, and mobile wallets.
	+ **Customer Support**: Live chat, email, and phone support for customers.
	+ **Delivery Services**: Nationwide or regional delivery, depending on logistics capabilities.
	+ **Inventory Management**: Real-time stock tracking and automated stock updates.
* **Target Market**:
	+ Farmers and agricultural businesses.
	+ Home gardeners and hobbyists.
	+ Agricultural cooperatives and organizations.
* **Geographical Focus**: Initially local or regional (based on logistics), with potential to scale nationally and internationally.

**4. Market Analysis**

**Market Trends**:

* **E-commerce Growth**: Online shopping in the agricultural sector is growing, with farmers seeking more convenience and variety.
* **Sustainability Focus**: There is an increasing interest in organic products, sustainable farming practices, and environmentally-friendly farming tools.
* **Tech Adoption**: Farmers are becoming more tech-savvy and are embracing e-commerce platforms to purchase supplies, saving time and effort.

**Target Audience**:

* **Farmers**: Both small and large-scale farmers looking for high-quality seeds, fertilizers, and farming equipment.
* **Agricultural Businesses**: Agro-businesses that require bulk purchases of agriculture-related products.
* **Home Gardeners**: Hobbyists who need garden tools, seeds, fertilizers, and soil amendments.

**Competitive Landscape**:

* There are a few established online agricultural platforms, but many lack the variety, customer service, or delivery capabilities that we aim to provide.
* Local agricultural stores often have limited online presence or do not offer nationwide delivery, giving us an edge in terms of accessibility.

**5. Business Model**

* **Revenue Streams**:
	+ **Product Sales**: Revenue from selling agricultural products (seeds, fertilizers, equipment, etc.).
	+ **Subscription Services**: Offering subscription-based delivery of consumable goods like fertilizers, seeds, and gardening kits.
	+ **Affiliate Programs**: Partnering with agricultural brands and earning commissions for promoting their products on the platform.
	+ **Advertising**: Revenue from brands and suppliers advertising their products on the website.
* **Cost Structure**:
	+ **Platform Development and Maintenance**: Costs related to website development, hosting, updates, and security.
	+ **Inventory Management**: Costs for procuring products, maintaining stock, and warehousing.
	+ **Logistics**: Shipping, packaging, and delivery expenses.
	+ **Marketing**: Costs for digital marketing (SEO, social media ads, etc.) and traditional advertising methods.
	+ **Customer Service**: Costs for setting up a dedicated customer support team.

**6. Financial Projections**

| **Item** | **Year 1** | **Year 2** | **Year 3** |
| --- | --- | --- | --- |
| **Revenue** | 500,000 | 1,000,000 | 1,500,000 |
| **Cost of Goods Sold (COGS)** | 300,000 | 600,000 | 900,000 |
| **Gross Profit** | 200,000 | 400,000 | 600,000 |
| **Operating Expenses** | 150,000 | 250,000 | 350,000 |
| **Net Profit** | 50,000 | 150,000 | 250,000 |
| **Break-even Point** | 6 months |  |  |

* **Key Assumptions**:
	+ Revenue growth of 50% year-over-year as the platform gains traction.
	+ Margins improve as we scale, allowing us to negotiate better pricing with suppliers.
	+ Investments in marketing and customer service will drive customer acquisition and retention.

**7. Risk Assessment**

* **Market Risks**:
	+ Slow adoption of online platforms by traditional farmers.
	+ Economic downturns affecting agricultural spending.
* **Operational Risks**:
	+ Supply chain disruptions or delays.
	+ Technical issues with the platform, including downtime or security breaches.
* **Mitigation Strategies**:
	+ Gradual marketing and educational campaigns targeting farmers to help them transition to online shopping.
	+ Strong partnerships with reliable suppliers to mitigate supply chain risks.
	+ Ongoing IT support to ensure the website is functional, secure, and up-to-date.

**8. Implementation Plan**

1. **Phase 1: Planning & Development (0–3 Months)**
	* Conduct a detailed market research and final product selection.
	* Develop the e-commerce platform, integrate payment systems, and setup product catalogs.
	* Establish relationships with suppliers and logistics partners.
2. **Phase 2: Launch & Marketing (4–6 Months)**
	* Officially launch the platform with a limited product range.
	* Focus on digital marketing campaigns, social media promotions, and SEO optimization.
	* Build brand awareness and customer loyalty through excellent service.
3. **Phase 3: Scaling & Expansion (6–12 Months)**
	* Expand the product offering.
	* Increase the target market area for shipping and deliveries.
	* Continue refining the platform and customer experience based on feedback.

**9. Conclusion**

The launch of an online agriculture store presents a promising opportunity to meet the growing demand for agricultural products in an increasingly digital world. By offering a wide variety of high-quality products and efficient services, we aim to address the challenges faced by farmers and agricultural businesses. The business case shows that, with the right strategy, investment, and execution, the online agriculture store can generate strong revenues, improve customer satisfaction, and achieve long-term growth.

 **Answer 8 4 sdlc methodologies**

**Sdlc –** structured approach to software development. Each phase has its critical purpose ensuring that development of high quality softwareand it met user requirmenrt and function effectively.

Following are the phase –

1. Requirement gathering
2. Requirement analysis
3. Design
4. Development
5. Testing
6. Process configuration
7. Deployment and implementation
8. Maintenance

There are several models to implement in sdlc and the model choice depends on the project needs , timeline , complexity . below are the most common models.

1. Water fall

It is a sequential approach where each phase must be completed before the next phase . best for simple projects

1. Agile

An iterativr and incremental model that focus on flexibility , customer collaboration , and rapid delivery. Developent happens in cycle called sprints. Best for changing requirement

1. V model

It is an extension of water fall model where each phase is associated with corresponding testing phase. Best for project which are cler and stable

1. Iterative model ( RUP ) Rational unified Process

Develop the software in small , iterative cycle. Best for feed back and improvements projects

1. Spiral Model

It is a combined elements of both iterative development and waterfall model . it focus in risk management. Best for large and complex model.

**Updated answer for question -8**

**1. Sequential Methodology (Waterfall)**

**Description**:
Waterfall is a traditional, linear approach to software development where each phase must be completed before moving on to the next. It is structured and sequential, with no overlap between phases.

**Pros**:

* **Clear Requirements**: Works well if the requirements are well-defined upfront.
* **Predictable**: It’s easier to estimate project timelines and costs because the process is rigidly structured.

**Cons**:

* **Inflexible**: Once you move to a new phase, you can't easily go back to change things, making it hard to accommodate new needs or changes.
* **Not ideal for dynamic projects**: If new features or changes in the market emerge (like changing agricultural trends), it becomes difficult to adapt.

**Suitability for an Online Agriculture Store**:

* A **Waterfall** methodology is typically more suitable for projects with very clear, well-defined requirements and limited changes. However, for an online agriculture store, where customer preferences and product offerings may change frequently (e.g., new agricultural products, seasonal changes), **Waterfall** might be too rigid.

**Opinion**:
I would **not recommend** the Waterfall methodology for an online agriculture store, because it lacks the flexibility needed for continuous updates and changes based on customer feedback and market trends.

**2. Iterative Methodology**

**Description**:
In the iterative model, the project is broken down into smaller parts or iterations. Each iteration builds on the previous one and adds more functionality. Each cycle typically involves planning, design, development, testing, and release.

**Pros**:

* **Flexibility**: Allows for changes and improvements at the end of each iteration.
* **Faster Releases**: Features can be rolled out more quickly, and feedback can be incorporated early.
* **Better Risk Management**: By breaking down the development into smaller cycles, risks can be managed more easily.

**Cons**:

* **Requires Active Collaboration**: Continuous involvement of stakeholders is necessary to provide feedback after each iteration.
* **Could Lead to Scope Creep**: If not managed carefully, iterations can get longer, adding extra features beyond the initial plan.

**Suitability for an Online Agriculture Store**:

* The **Iterative model** would be a good fit for an online agriculture store, as it allows for flexibility in responding to customer demands, new trends in the agriculture industry, and technology updates. You can release basic features (like product listings and checkout) first, then iterate to add more advanced features like personalized recommendations, advanced search filters, or seasonal promotions.

**Opinion**:
The **Iterative methodology** is a strong candidate for an online agriculture product store because of the flexibility it offers for continuous improvement and adaptability based on feedback from users and market changes.

**3. Evolutionary Methodology**

**Description**:
The evolutionary approach is similar to iterative development, but it emphasizes continuous development and releases over time. The product is expected to evolve based on user feedback and market conditions, often in a highly dynamic manner.

**Pros**:

* **Highly Adaptive**: The product evolves based on real-time user feedback, market trends, and changing requirements.
* **Customer-Centric**: It ensures the product remains aligned with customer needs.
* **Continuous Delivery**: New features and improvements are delivered consistently, often leading to high user satisfaction.

**Cons**:

* **Resource-Intensive**: Requires ongoing effort from all stakeholders to ensure continuous delivery.
* **Difficult to Scope**: Since the product is continuously evolving, it can be difficult to define project scope or set deadlines for specific features.

**Suitability for an Online Agriculture Store**:

* The **Evolutionary approach** would work very well for an online agriculture product store, especially considering the fast-paced changes in product offerings, customer preferences, and technological advancements in e-commerce. Constantly evolving based on customer feedback and market dynamics (e.g., new trends in sustainable farming, seasonal product needs) is crucial for staying competitive in the agriculture e-commerce space.

**Opinion**:
I believe the **Evolutionary methodology** is ideal for an online agriculture product store because it supports continuous adaptation, which is vital in a market where new products, customer demands, and technologies are constantly emerging.

**4. Agile Methodology**

**Description**:
Agile is a flexible and adaptive development methodology that emphasizes customer collaboration, responsiveness to change, and rapid delivery of small, functional increments of a product.

**Pros**:

* **Customer-Centric**: Agile involves constant feedback from customers, ensuring the product aligns with their needs.
* **Flexibility**: Easy to adapt to changes, new features, and evolving market trends.
* **Faster Time-to-Market**: Small, functional iterations can be delivered more quickly.
* **Collaboration**: Encourages close collaboration between developers, product managers, and stakeholders.

**Cons**:

* **Requires Active Stakeholder Engagement**: Success depends on frequent communication with customers and stakeholders.
* **Can be Challenging to Scale**: In large projects, coordinating multiple teams may become difficult.
* **Requires Skilled Team**: Teams must be experienced in agile practices to avoid scope creep or project delays.

**Suitability for an Online Agriculture Store**:

* **Agile** is an excellent methodology for an online agriculture product store. Given that e-commerce sites need frequent updates, quick responses to customer feedback, and continuous integration of new products or features, **Agile** provides the flexibility and speed needed to stay competitive in the market.

**Opinion**:
I highly recommend **Agile** for an online agriculture product store. It supports the frequent updates and iterative changes that are essential to keeping the store aligned with customer needs, seasonal product cycles, and competitive pressures.

**Conclusion**

After evaluating each methodology, I recommend the **Agile** or **Evolutionary** methodologies for developing an online agriculture product store. These approaches are ideal due to their flexibility, ability to respond to market and customer changes, and capacity for frequent updates — all of which are crucial in the e-commerce industry. **Agile** would be the best choice for smaller, cross-functional teams, while **Evolutionary** might be more suitable for a larger, more dynamic environment where continuous delivery and user feedback are key drivers.

 **Answer 9**

As per my analysis v model is appropriate because in very step it will validate and tested before going to next phase.

Moreover as a BA to resolve the issue of conflict – firstly I will be finding the root cause and then active listening to all the stakeholder who are involved then ask the question and clarify one by one. Also set up a meeting for an open discussion and propose win win solutions by using data and evidence and then documenting the discussion. And promote collaboration , compromise and accommodation technique.

**Answer 10 Waterfall v/s V model**

**Approach –** waterfall has linear and sequential process and v model emphasis on both along with testing

Testing – testing happens only after development phase is completed. V model happens parall

Flexibility – waterfall less flexibility . less flexibility but testing happens alongside

Risk management – in waterfall risk identified late . v model risk identified earlier.

Change management- waterfall difficult to accommodate. In v model harder to accommodate after testing

Documentation – in waterfall heavy document every phase. V model heavy document in development phase.

**Key Differences Between Waterfall and V-Model**

| **Aspect** | **Waterfall** | **V-Model** |
| --- | --- | --- |
| **Approach** | Linear and sequential (step-by-step) | Structured but with parallel verification/testing for each phase |
| **Testing** | Testing happens only after coding is completed | Testing is integrated into each phase (Verification & Validation) |
| **Flexibility** | Inflexible; changes are difficult after the project starts | Inflexible; changes are also difficult, but testing in parallel makes it easier to identify problems early |
| **Focus** | Focus on completing each phase before moving to the next | Focus on validating and verifying each phase alongside development |
| **Risk** | Higher risk of undetected issues (since testing is at the end) | Lower risk of defects, as validation and verification happen throughout the process |
| **Cost of Change** | High cost to accommodate changes once the project starts | High cost for changes, but earlier detection of issues might reduce some costs |
| **Project Type** | Suitable for projects with clear, fixed requirements | Suitable for projects where requirements are well-defined and testing is crucial |

**Answer 11 Justify your choice**

As a BA choosing V model for a project depends on various project requirements.

Timeline

Complexity

Need for early verification and validation

1. Early Identification of issues
2. Close alignment between development and testing
3. Clear structure and traceability
4. Ideal for critical systems
5. Minimal need for rework

Also in the end I would also suggest Agile Methodology. If situation have more complexities.

* **Waterfall** is best for projects where the requirements are **clear and well-defined** from the start and there’s little expectation of changes. Examples include projects with fixed requirements (e.g., government contracts or standard software with minimal updates).
* **V-Model** is ideal for projects where **quality and testing** are critical, and you want to ensure that each phase of development is carefully validated. It’s often preferred in **safety-critical systems** (e.g., healthcare, aerospace) where thorough verification and validation are paramount, or when a system requires heavy regulation.

For an **online agriculture product store**, if the project requirements are clear and unlikely to change much during development, **Waterfall** could be an option. However, if you expect frequent changes, updates, or want to focus heavily on early testing (for security, payment integration, etc.), the **V-Model** might be better due to its emphasis on validation and verification during the process.

**Answer 12 Gantt chart**

It is a type of a Bar chart used for project management to illustrate project scheduling. It show start and finish date of various projects

| **Phase** | **Start Date** | **End Date** | **PM** | **BA** | **Java Devs** | **Testers** | **DB Admin** | **Network Admin** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **RG (Requirements Gathering)** | 2025-05-01 | 2025-05-05 | X | X |  |  |  |  |
| **RA (Requirements Analysis)** | 2025-05-06 | 2025-05-10 | X | X |  |  |  |  |
| **Design** | 2025-05-11 | 2025-05-15 | X | X |  |  |  |  |
| **D1 (Module Design)** | 2025-05-16 | 2025-05-20 |  |  | X |  |  |  |
| **T1 (Unit Testing 1)** | 2025-05-21 | 2025-05-25 |  |  |  | X |  |  |
| **D2 (Architecture Design)** | 2025-05-26 | 2025-05-30 |  |  | X |  | X |  |
| **T2 (Unit Testing 2)** | 2025-06-01 | 2025-06-05 |  |  |  | X |  |  |
| **D3 (Module Development 3)** | 2025-06-06 | 2025-06-10 |  |  | X |  |  |  |
| **D4 (Module Development 4)** | 2025-06-11 | 2025-06-15 |  |  | X |  |  |  |
| **T4 (System Testing)** | 2025-06-16 | 2025-06-20 |  |  |  | X |  |  |
| **UAT (User Acceptance Testing)** | 2025-06-21 | 2025-06-25 | X | X |  | X |  |  |

**Answer -13 Fixed bid and billing projects**

1. Payment structure – Fixed price is agreed upon entire project . Billing is based on actual time and resources.
2. Risk – Higher risk for service provider. Billing higher risk for client
3. Scope – well defined and fixed scope. Billing scope is flexible
4. Flexibility – low flexibility and in billing high flexibility
5. Budgeting – fixed bid is set in advance . billing project is not fixed.

| **Aspect** | **Fixed-Price Projects** | **Billing Projects (Hourly/Time-and-Materials)** |
| --- | --- | --- |
| **Pricing Model** | Fixed price for the entire project or deliverable. | Charges based on the hours worked or materials used. |
| **Cost Predictability** | High, as the total cost is agreed upfront. | Low to moderate, as the final cost depends on the time spent. |
| **Risk** | The service provider assumes most of the risk. | The client assumes more risk, as costs can vary. |
| **Payment Schedule** | Payments may be tied to milestones or completion. | Payments are made periodically (e.g., weekly, bi-weekly) based on actual hours worked. |
| **Flexibility** | Low flexibility in scope changes without renegotiation of price. | High flexibility in scope changes, as work is billed as it is done. |
| **Scope of Work** | Defined and agreed upon upfront with limited changes. | The scope is more flexible and can evolve over time. |
| **Timeline** | A fixed timeline is established at the beginning. | Timelines may vary depending on the hours worked and tasks completed. |
| **Incentives** | No direct incentive to finish early; payment is fixed. | Service provider is incentivized to work efficiently to maximize billing. |
| **Usage Scenario** | Suitable for well-defined projects with clear requirements. | Ideal for projects where scope or requirements are unclear or may evolve. |
| **Contract Complexity** | Requires detailed contracts with well-defined deliverables, timelines, and milestones. | Contracts are often simpler, with focus on hourly rates and tasks. |
| **Example Projects** | Website development, software with clear specifications, construction projects. | Consulting, maintenance, ongoing development, custom software development. |

**Answer -14 Prepare Timesheets of a BA in various stages of sdlc.**

| **Date** | **Task/Activity** | **Project/Module** | **Time In** | **Time Out** | **Total Hours Worked** | **Notes/Comments** | **Category** | **Status** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2025-04-01 | Requirements Gathering | Online Store | 09:00 AM | 11:00 AM | 2 hours | Meeting with stakeholders to clarify requirements | Requirements Gathering | Completed |
| 2025-04-01 | Document Functional Specs | Online Store | 11:30 AM | 01:30 PM | 2 hours | Drafting specifications based on requirements | Documentation | In Progress |
| 2025-04-02 | Analyze Existing Systems | Online Store | 09:00 AM | 12:00 PM | 3 hours | Analyzing existing system architecture and identifying gaps | Analysis | Completed |
| 2025-04-02 | Meeting with Development Team | Online Store | 02:00 PM | 03:30 PM | 1.5 hours | Discussion about technical feasibility of features | Meetings | Completed |
| 2025-04-03 | User Stories Creation | Online Store | 09:30 AM | 12:00 PM | 2.5 hours | Writing user stories for e-commerce platform | Requirements Gathering | In Progress |
| 2025-04-03 | Review and Update Document | Online Store | 01:00 PM | 03:00 PM | 2 hours | Updating the functional specification document | Documentation | Completed |
| 2025-04-04 | Review Test Cases | Online Store | 10:00 AM | 12:00 PM | 2 hours | Reviewing test cases based on requirements | Testing Review | Pending |

**Development time sheet of a BA**

| **Date** | **Task/Activity** | **Project/Module** | **Time In** | **Time Out** | **Total Hours Worked** | **Notes/Comments** | **Category** | **Status** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2025-04-01 | Requirements Gathering | Online Store | 09:00 AM | 11:00 AM | 2 hours | Meeting with stakeholders to clarify requirements | Requirements Gathering | Completed |
| 2025-04-01 | Document Functional Specs | Online Store | 11:30 AM | 01:30 PM | 2 hours | Drafting specifications based on requirements | Documentation | In Progress |
| 2025-04-02 | User Stories Creation | Online Store | 09:00 AM | 11:00 AM | 2 hours | Writing user stories for e-commerce platform | Requirements Gathering | In Progress |
| 2025-04-02 | Analyze Existing Systems | Online Store | 01:00 PM | 04:00 PM | 3 hours | Analyzing existing system architecture and identifying gaps | Analysis | Completed |
| 2025-04-03 | Meeting with Development Team | Online Store | 10:00 AM | 12:00 PM | 2 hours | Discussion about technical feasibility of features | Meetings | Completed |
| 2025-04-03 | Review and Update Documentation | Online Store | 01:00 PM | 03:00 PM | 2 hours | Updating the functional specification document | Documentation | Completed |
| 2025-04-04 | Test Case Review | Online Store | 09:00 AM | 11:00 AM | 2 hours | Reviewing test cases and ensuring alignment with requirements | Testing Review | In Progress |
| 2025-04-04 | Stakeholder Presentation | Online Store | 01:00 PM | 02:00 PM | 1 hour | Presenting requirements and design to stakeholders | Meetings | Completed |
| 2025-04-05 | Final Review of Requirements | Online Store | 10:00 AM | 12:00 PM | 2 hours | Final review and sign-off on requirements document | Requirements Gathering | Completed |

**Testing time sheet of a BA**

| **Date** | **Task/Activity** | **Project/Module** | **Time In** | **Time Out** | **Total Hours Worked** | **Notes/Comments** | **Category** | **Status** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2025-04-01 | Review Test Cases | Online Store | 09:00 AM | 11:00 AM | 2 hours | Reviewing test cases to ensure alignment with requirements | Test Case Review | Completed |
| 2025-04-02 | Perform UAT (User Acceptance Testing) | Online Store | 09:00 AM | 12:00 PM | 3 hours | Participating in UAT for the Order Management module | UAT | In Progress |
| 2025-04-02 | Meeting with QA Team | Online Store | 01:00 PM | 02:00 PM | 1 hour | Discussing test results and defect prioritization | Meetings | Completed |
| 2025-04-03 | Update Functional Specifications | Online Store | 09:30 AM | 11:00 AM | 1.5 hours | Updating specs based on UAT feedback | Documentation | In Progress |
| 2025-04-03 | Review Defect Report | Online Store | 01:30 PM | 03:00 PM | 1.5 hours | Reviewing defect report and categorizing defects | Issue Resolution | Completed |
| 2025-04-04 | Verify Test Results | Online Store | 10:00 AM | 12:00 PM | 2 hours | Verifying test results for the Payment Gateway | Test Verification | Completed |
| 2025-04-04 | Test Case Documentation Review | Online Store | 01:00 PM | 02:30 PM | 1.5 hours | Reviewing and updating test case documentation for accuracy | Documentation | Completed |
| 2025-04-05 | Final Sign-off on UAT | Online Store | 09:00 AM | 11:00 AM | 2 hours | Final review and sign-off on User Acceptance Testing |  |  |

**UAT TIME SHEET OF A BA**

| **Date** | **Task/Activity** | **Project/Module** | **Time In** | **Time Out** | **Total Hours Worked** | **Notes/Comments** | **Category** | **Status** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2025-04-01 | Prepare UAT Test Plan | Online Store | 09:00 AM | 11:00 AM | 2 hours | Preparing UAT test plan and defining test scenarios | UAT Planning | Completed |
| 2025-04-02 | Stakeholder Meeting for UAT Setup | Online Store | 10:00 AM | 12:00 PM | 2 hours | Meeting with stakeholders to define UAT scope and schedule | Meetings | Completed |
| 2025-04-02 | Coordinate UAT Environment Setup | Online Store | 01:00 PM | 03:00 PM | 2 hours | Coordinating with the IT team to set up UAT environment | UAT Preparation | Completed |
| 2025-04-03 | Execute UAT Test Case 1 | Online Store | 09:00 AM | 11:00 AM | 2 hours | Executing UAT Test Case 1 and documenting results | UAT Execution | In Progress |
| 2025-04-03 | Collect UAT Feedback | Online Store | 11:30 AM | 01:00 PM | 1.5 hours | Collecting feedback from stakeholders after Test Case 1 execution | UAT Feedback | In Progress |
| 2025-04-04 | Issue Resolution for UAT | Online Store | 10:00 AM | 12:00 PM | 2 hours | Working with the development team to fix issues found during UAT | Issue Resolution | Completed |
| 2025-04-05 | UAT Test Case 2 Execution | Online Store | 09:00 AM | 12:00 PM | 3 hours | Executing UAT Test Case 2 and logging issues found | UAT Execution | In Progress |
| 2025-04-05 | UAT Sign-Off | Online Store | 01:00 PM | 02:30 PM | 1.5 hours | Final UAT sign-off after addressing all major issues | UAT Finalization | Completed |

**Deployment and implementation timesheet of a BA**

| **Date** | **Task/Activity** | **Project/Module** | **Time In** | **Time Out** | **Total Hours Worked** | **Notes/Comments** | **Category** | **Status** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2025-04-01 | Coordinate Deployment Planning | Online Store | 09:00 AM | 11:00 AM | 2 hours | Coordinating with technical teams to finalize deployment schedule | Deployment Preparation | Completed |
| 2025-04-02 | Review Deployment Checklist | Online Store | 10:00 AM | 12:00 PM | 2 hours | Reviewing checklist to ensure everything is in place for deployment | Deployment Preparation | Completed |
| 2025-04-02 | Stakeholder Communication about Deployment | Online Store | 01:00 PM | 03:00 PM | 2 hours | Communicating deployment schedule and potential risks to stakeholders | Stakeholder Communication | Completed |
| 2025-04-03 | Validate System Post-Deployment | Online Store | 09:30 AM | 12:00 PM | 2.5 hours | Validating that the deployed system meets business requirements | System Validation | In Progress |
| 2025-04-03 | Conduct User Training for Post-Deployment | Online Store | 01:00 PM | 03:00 PM | 2 hours | Providing training to users on the new system features | Training and Support | In Progress |
| 2025-04-04 | Monitor System Performance Post-Deployment | Online Store | 10:00 AM | 12:00 PM | 2 hours | Monitoring system performance after deployment, identifying issues | Post-Deployment Support | Completed |
| 2025-04-04 | Issue Resolution and Bug Fixes Post-Deployment | Online Store | 01:00 PM | 03:00 PM | 2 hours | Collaborating with developers to resolve issues identified post-deployment | Issue Resolution | Completed |
| 2025-04-05 | Final Stakeholder Sign-Off Post-Deployment | Online Store | 09:00 AM | 11:00 AM | 2 hours | Obtaining final sign-off from stakeholders after ensuring the system is functioning correctly | Stakeholder Communication | Completed |
| 2025-04-05 | Post-Deployment Monitoring and Support | Online Store | 11:30 AM | 01:00 PM | 1.5 hours | Ongoing monitoring and support to ensure system stability | Post-Deployment Support | In Progress |