Capstone project 1(Part 1)

Question 1 – BPM

Answer:

To identify the Business Process Model for the Online Agriculture Store, we need to break down the process into its components. Here's a possible BPM:

- Goal: To provide a platform for farmers to buy agriculture products online.

- Inputs: Farmer registration, product information, payment details.

- Resources: Website, payment gateway, logistics.

- Outputs: Confirmed orders, product delivery.

- Activities: Farmer registration, product browsing, payment processing, order confirmation, product delivery.

- Value created to the end Customer: Convenience, accessibility, competitive pricing.

Question 2 – SWOT

Answer:

 - Strengths: Strong demand for agriculture products, existing network of farmers and suppliers, experienced project team.

- Weaknesses: High competition in the e-commerce market, logistical challenges in delivering products to remote areas.

- Opportunities: Growing demand for online shopping, potential partnerships with agriculture companies and organizations.

- Threats: Changes in government regulations, economic downturn, cybersecurity threats.

Question 3 – Feasibility study

Answer:

- Hardware: Servers, storage, network infrastructure.

- Software: E-commerce platform, payment gateway, logistics software.

- Trained Resources: Project team, customer support, logistics personnel.

- Budget: Initial investment, ongoing expenses, revenue projections.

- Time frame: Project timeline, milestones, deadlines.

Question 4 – Gap Analysis

Answer:

- AS-IS process: Farmers buy agriculture products from physical stores or through intermediaries.

- TO-BE process: Farmers buy agriculture products online through the Online Agriculture Store platform.

- Gaps:

 - Lack of online platform for buying agriculture products.

 - Limited accessibility to agriculture products for farmers in remote areas.

 - High costs and inefficiencies in the current supply chain.

Question 5 – Risk Analysis

Answer:

- BA Risks:

 - Inaccurate requirements gathering.

 - Insufficient stakeholder engagement.

 - Poor communication with project team.

- Process/Project Risks:

 - Delays in project timeline.

 - Budget overruns.

 - Cybersecurity threats.

 - Logistical challenges in delivering products.

Question 6 – Stakeholder Analysis (RACI Matrix)

Answer:

| Mr. Henry | Sponsor | Provides funding and resources | Accountable for project success | | |

| Mr. Karthik | Project Manager | Oversees project implementation | Responsible for project timeline and budget | | |

| Peter, Kevin, Ben | Stakeholders | Provide input on farmer requirements | Consulted on project requirements | | |

| APT IT SOLUTIONS team | Project Team | Implements project | Responsible for project deliverables | | |

Question 7 – Business Case Document

Answer:

- Executive Summary: The Online Agriculture Store project aims to provide a platform for farmers to buy agriculture products online.

- Business Need: The current process of buying agriculture products is inefficient and costly for farmers.

- Solution Overview: The Online Agriculture Store platform will provide a user-friendly interface for farmers to browse and purchase agriculture products.

- Benefits: Increased accessibility to agriculture products, reduced costs, improved efficiency.

- Costs: Initial investment, ongoing expenses.

- Risks: Delays in project timeline, budget overruns, cybersecurity threats.

Question 8 – Four SDLC Methodologies

Answer:

- Sequential: A linear approach to software development, where each phase is completed before moving on to the next one.

- Iterative: A cyclical approach to software development, where each phase is repeated multiple times until the desired outcome is achieved.

- Evolutionary: A flexible approach to software development, where the requirements and design evolve over time.

- Agile: A flexible and iterative approach to software development, where the focus is on delivering working software in short iterations.

Question 9 – Waterfall RUP Spiral and Scrum Models

Answer:

As a Business Analyst, I would recommend the Waterfall model for this project.

Waterfall Model Suitability:

1. Clear Requirements: The project requirements are well-defined, and the stakeholders have a clear understanding of what they want to achieve. The Waterfall model is suitable for projects with clear and fixed requirements.

2. Predictable Timeline: The project has a predictable timeline, and the stakeholders are expecting a specific outcome within a certain timeframe. The Waterfall model provides a linear and sequential approach, which helps in meeting the project deadlines.

3. Low Complexity: The project involves developing an online agriculture product store, which is a relatively low-complexity project. The Waterfall model is suitable for low-complexity projects where the requirements are well-understood.

4. Stakeholder Expectations: The stakeholders, including Mr. Henry and the farmers, are expecting a specific outcome from this project. The Waterfall model provides a clear understanding of the project scope, timeline, and deliverables, which helps in managing stakeholder expectations.

V-Model Limitations:

1. High Complexity: The V-Model is suitable for high-complexity projects that require a high degree of verification and validation. This project, however, has relatively low complexity.

2. High Risk: The V-Model is suitable for projects with high risks, where the requirements are not well-understood. This project, however, has well-defined requirements and a predictable timeline.

In conclusion, considering the project requirements, timeline, and stakeholder expectations, I recommend the Waterfall model for this project.

Question 10 – Waterfall Vs V-Model

Answer:

**Structure:**

Waterfall Model follows a linear and sequential process.

V-Model is sequential but integrates a testing phase for each development stage.

**Testing Approach:**

In the Waterfall Model, testing is done only after the development phase is complete.

In the V-Model, testing is done in parallel with each development phase.

**Flexibility:**

Waterfall Model is less flexible; changes are difficult to incorporate once a phase is completed.

V-Model is slightly more flexible since issues can be identified and addressed early.

**Risk Management:**

Waterfall Model has higher risks because defects are often discovered late in the process.

V-Model reduces risks by detecting defects during each phase.

**Cost of Fixing Bugs:**

In the Waterfall Model, fixing bugs is more expensive as they are found later.

In the V-Model, fixing bugs is less costly since they are identified early.

**Suitability:**

Waterfall Model is best suited for small projects with well-defined and stable requirements.

V-Model is ideal for projects where quality is critical, and requirements are stable.

**Overlap of Phases:**

In the Waterfall Model, there is no overlap; each phase begins only after the previous one ends.

In the V-Model, development and testing phases overlap for better validation.

**Documentation:**

Waterfall Model places heavy emphasis on documentation.

V-Model emphasizes both documentation and validation.

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Question 11– Justify your choice

Answer:

The V-Model is more suitable for this project because:

It ensures thorough testing at each stage, crucial for an application used by farmers with varying technical expertise.

Early defect detection minimizes risks and aligns with the project’s quality objectives.

The committee’s finalization of the V-Model aligns with stakeholder expectations.

Question 12–GanttChart

Answer:

Key Phases and Activities:

Requirement Gathering (RG):

Duration: 2 weeks.

Activities: Stakeholder interviews, requirement documentation, and approval.

Requirement Analysis (RA):

Duration: 2 weeks.

Activities: Analyse requirements, create use cases, and prepare a traceability matrix.

Design Phase:

Duration: 4 weeks.

Activities: System architecture design, wireframe creation, and design reviews.

Development and Testing:

D1 and T1 (Module 1): 4 weeks.

D2 and T2 (Module 2): 4 weeks.

D3 and T3 (Module 3): 4 weeks.

D4 and T4 (Module 4): 4 weeks.

Activities: Develop each module and perform corresponding testing.

User Acceptance Testing (UAT):

Duration: 3 weeks.

Activities: Conduct UAT sessions, gather feedback, and resolve issues.

Deployment and Implementation:

Duration: 2 weeks.

Activities: Deploy the application, monitor performance, and provide training.

Question 13 – Fixed Bid Vs Billing

Answer:

Fixed Bid Projects:

* Definition: A project where the cost is agreed upon upfront and does not change regardless of the actual effort or time spent.
* Features:
* Clear scope and requirements are essential.
* Risk is higher for the vendor as they bear the cost of scope changes or overruns.
* Best suited for projects with well-defined requirements and limited changes.
* Advantages:
* Predictable cost for the client.
* Easier budgeting and financial planning.
* Disadvantages:
* Limited flexibility for scope changes.
* May lead to quality compromises if the vendor tries to reduce costs.

Billing (Time and Material) Projects:

* Definition: A project where the client pays based on the actual effort (hours worked) and materials used.
* Features:
* Scope can evolve during the project.
* Risk is shared between the client and the vendor.
* Suitable for projects with dynamic or unclear requirements.
* Advantages:
* Flexibility to accommodate changes.
* Transparency in costs.
* Disadvantages:
* Higher cost unpredictability for the client.
* Requires close monitoring to avoid overruns.

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

Answer:

Below is an outline of a Business Analyst's (BA) timesheet activities across SDLC phases:

**1. Design Phase:**

* **Tasks:**
	+ Requirements documentation and analysis.
	+ Creating use cases, process flows, and wireframes.
	+ Collaborating with stakeholders to finalize design documents.
* **Sample Timesheet:**
	+ 4 hours: Requirements workshops.
	+ 3 hours: Preparing functional specification documents.
	+ 1 hour: Reviewing and validating designs.

**2. Development Phase:**

* **Tasks:**
	+ Clarifying requirements for the development team.
	+ Assisting with requirement traceability.
	+ Conducting periodic reviews of development progress.
* **Sample Timesheet:**
	+ 2 hours: Answering developer queries.
	+ 3 hours: Updating traceability matrices.
	+ 3 hours: Reviewing interim deliverables.

**3. Testing Phase:**

* **Tasks:**
	+ Preparing test cases and scenarios.
	+ Assisting testers in understanding requirements.
	+ Reviewing test results and ensuring alignment with requirements.
* **Sample Timesheet:**
	+ 3 hours: Preparing test scenarios.
	+ 4 hours: Reviewing test results.
	+ 1 hour: Coordinating with testing teams.

**4. UAT (User Acceptance Testing) Phase:**

* **Tasks:**
	+ Supporting users during UAT.
	+ Gathering and documenting user feedback.
	+ Ensuring issues identified during UAT are resolved.
* **Sample Timesheet:**
	+ 3 hours: Conducting UAT sessions.
	+ 3 hours: Documenting feedback and issues.
	+ 2 hours: Coordinating issue resolution.

**5. Deployment and Implementation Phase:**

* **Tasks:**
	+ Preparing user manuals and training materials.
	+ Conducting user training sessions.
	+ Supporting post-deployment activities.
* **Sample Timesheet:**
	+ 3 hours: Creating user manuals.
	+ 2 hours: Conducting training sessions.
	+ 3 hours: Monitoring deployment and resolving issues.