Capstone Project 1

Question 1: Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customer)

Answer:

Goal: The goal is to make an online agriculture product store to facilitate remote area farmers to buy agriculture products. Through this application, Farmers and Companies can commute directly with each other.

Inputs: Project Team, Business Team, 3rd Party Stakeholders involvement (Which includes companies and Integration with other parties regarding the payments etc)

Resources:

Business Team**:** SOONY Company, Mr Pandu (Financial Head), Mr Dooku (Project Coordinator)

Project Team: APT IT SOLUTIONS Company, Mr Vandanam (project Manager), Ms. Juhi (Senior Java Developer), MrTeyson, Ms Lucie, Mr Tucker, Mr Bravo (Java Developers). Mr Mike (Network Admin) and John (DB Admin). Mr Jason and Ms Alekya (Tester). Me (BA).

Stakeholders: Peter, Kevin and Ben

Output: To build an online store to facilitate farmers to buy seeds, pesticides and fertilizers from anywhere through internet connectivity.

Activities:

Step by Step activities to create the online application:

1. Gather all the requirements from the business/stakeholder's team.
2. Analyze the requirements with the project team and prepare a wireframe of the design of the application. Once the demo is accepted by the stakeholders/business then start the development.
3. Develop the project and make sure that all the requirements which are given are covered by the business team are covered.
4. Testers would test the developed end to end project and if there are any bugs/issues escalate back them to the developers and make sure that there are no issues.
5. Perform the UAT with the project team and release the final and fully developed project into the business team servers.

Value created to the end Customer: To provide farmers a platform where they can buy all the necessary agriculture related products.

Question 2: SWOT

Strengths:
1. The project is funded by a Corporate Social Responsibility (CSR) initiative, ensuring that the project is supported with both financial and social goodwill.

2. The APT IT SOLUTIONS company has a skilled talent pool, including project managers, developers, network and database administrators, and testers, ensuring the availability of resources.

3. Direct involvement of stakeholders (Peter, Kevin, and Ben) ensures that the product will meet actual user needs, making the solution more relevant and user-friendly for farmers.

4. The project has a budget of 2 Crores INR, which provides sufficient resources to cover development, deployment, and initial operations.

Weakness:
1. Since the target users are farmers in remote villages, challenges in internet connectivity and technology adoption might limit the application's reach.

2. The app needs to be extremely user-friendly since many farmers might not be familiar with using smartphones or the internet, creating potential barriers to adoption.

3. With a timeline of 18 months, there's a risk that user needs could change, or the technology could become outdated before the project is completed.

4. The project depends heavily on the cooperation of manufacturers (fertilizer, seed, pesticide companies) to provide product details, which could delay or complicate the development process.

Opportunities:

1. There's a significant opportunity to reach farmers across the country, especially those in remote areas, improving access to vital agricultural products.

2. This platform can help support small-scale farmers, increasing their productivity and

business profitability by providing them with easy access to essential supplies.

3. The project aligns with long-term agricultural sustainability goals by improving the quality and accessibility of farming resources.

4. The project opens doors to integrate advanced features like AI for personalized product recommendations or logistics optimization in the future.

Threats:

1. There might be existing or emerging competitors offering similar solutions, which could impact the app's market share.

2. There may be risks related to the app's scalability, security, or performance in remote areas with poor connectivity or infrastructure.

3. There might be legal or regulatory challenges, particularly around product quality, pricing, and distribution channels for agricultural goods.

4. Farmers' resistance to change and technology could hinder widespread adoption, especially if the application is difficult to use or if the benefits aren't clear.

Question 3: Feasibility Study

The software should be compactable and user friendly so that different companies could easily get integrated with the integration and there should be some of the trained resources to get/integrate the companies with the application. The application should be accessible in different device modes i.e phone/pc or in any other smart technology.
There should be security firewalls to the application so that anyone will not be able to hack the servers. A person who is well aware of the technical domain should be in the project as they write the codes and determine the security firewalls.
The time frame is 18 months and the company's budget for this project is 2 crores which may include the maintenance and marketing charges

Question 4: Gap Analysis

AS-IS process (Current process) :
1. Farmers are travelling to the market and purchasing the pesticides/seeds and other farming related products.

2. Farmers are getting limited number of options in the market and sometimes they could not get suitable pesticide for the crop as this may result into deprive crop state/ unproper quality crop.

TO-BE process (Future process):
1. Farmers can order the right suitable product from the application and get them delivered to their location in time.

2. They can directly connect with manufactures who produce pesticides and other farming related products and could get in low cost.

3. Farmers can get different number of options and can choose the product according to their crop type.

4. The application will be user friendly so that any farmer who is unable to understand/know will also have the ability to use the application.

5. There will be protected gateways which helps farmers to do the payment in online mode and there will be safe and secure delivery of the products.

6. A support team would be available so that if there are any concerns users can raise an issue.

Question 5: Risk Analysis

BA Risks:

1. Problems in gathering the requirements like miscommunication/lack of communication.
2. May not have complete idea about the agriculture sector
3. Can have disturbances/communication issues with stakeholders

Project risks:

1. All the farmers would not have the internet connectivity as some may be in remote areas
2. Farmers would not have awareness about the technology or the applications or the smart devices.
3. There could be payment related issues or system related issues.
4. There could be delay/wrong product delivery. This may be to any reason.

Question 6: Stakeholder Analysis (RACI Matrix)

RACI – Responsible, Accountable, Consulted and Informed.

Mr. Henry – Project Sponsor
Mr. Pandu – Financial Head
Mr. Dooku – Project Manager
Peter, Kevin, Ben – Stakeholders
Mr. Vandanam – Project Manager
Ms. Juhi – Senior Java developer
Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo - Java Developers
Mr Mike – Network Admin
John – DB Admin
Mr Jason and Ms Alekya – Testers
Srikar – BA

R – Responsible, A – Accountable, C- Consulted, I – Informed

	Srikar	Jason & Alekya	Teyson, Lucie, Tucker, Bravo	Juhi	Vandanam	Peter, Kevin, Ben	Karthik	Henry
Requirement Gathering	R				A/I	C		
Analysis	R				I			
Development			R	A/C	R/A			
Testing	I	R	R (Unit Testing)	I	I			
Implementation	R				I		R	
UAT	I				R/A			I

Question 7 – Business Case Document

Project Name	Online Agriculture product store
Project Manager	Mr. Vandanam
Client	Soony Ltd
Duration	18 months
Executive Summary	To develop an online agriculture store to facilitate farmers to buy agriculture products. The solution is to prepare an application that allows farmers and companies to interact directly so that farmers could buy the required products directly.
Mission Statement	Farmers in remote areas are facing difficulties in procuring the required materials for farming. There are lack of

	exact product availability in the nearby farmers area. Hence in order to solve this issue there should be a platform which helps farmers to directly interact with companies and get the required materials.
Product/Service	Online store that helps farmers and companies to directly interact with each other. Farmers can use this application and get the products to their home.
Project Organization	APT IT SOLUTIONS

Question 8: Four SDLC Methodologies

Sequential: The sequential methodology, often called the Waterfall model, is a step-by-step process where tasks are completed in a fixed order. Each phase, like planning, designing, development, testing, and deployment, is finished before moving to the next. It works well for projects with clear goals and stable requirements. However, it's less flexible for changes once the process begins. It's ideal for straightforward, predictable projects.

Iterative: Iterative methodology is a flexible approach where a project is broken into small cycles or iterations. Each iteration includes planning, development, and testing, building on the previous one to improve gradually. This allows for regular feedback and adjustments, making it ideal for projects where requirements may evolve. It focuses on continuous improvement and delivering value step by step.

Evolutionary: Evolutionary methodology is a flexible approach where the project develops in stages, adapting to changes as it progresses. It allows for ongoing feedback and refinements, ensuring the final product meets evolving requirements. Each version builds on the previous one, making it ideal for complex or uncertain projects. It focuses on gradual growth and continuous improvement.

Agile: Agile methodology is a dynamic and collaborative approach to project management. Work is divided into small, manageable parts called sprints, with regular feedback and adjustments. It prioritizes flexibility, teamwork, and customer satisfaction by adapting to changing needs. Agile is ideal for fast-paced projects requiring continuous improvement and quick delivery.

Question 9: Waterfall RUP Spiral and Scrum Models

Waterfall: The Waterfall model is a structured approach where project tasks flow in a fixed order, like a waterfall. Phases such as planning, design, development, testing, and deployment are completed one at a time. It's best for projects with clear, unchanging requirements. While simple to follow, it's less adaptable to changes once started.

RUP: The Rational Unified Process (RUP) model is a flexible, iterative framework that organizes work into four phases: Inception, Elaboration, Construction, and Transition. It focuses on gradual development through continuous feedback and testing. RUP adapts to changing requirements and emphasizes quality and risk management. It's ideal for complex and evolving projects.

Spiral: The Spiral model is a risk-driven approach that combines iterative and sequential processes. The project is developed in loops, called spirals, with each loop including planning, risk analysis, development, and evaluation. It focuses on managing risks and allows for continuous improvements. This model works well for large, high-risk projects with evolving requirements.

Scrum: The Scrum model is an Agile framework that focuses on delivering work in small, time-boxed cycles called sprints. Teams collaborate daily through short meetings (daily stand-ups) to track progress and address challenges. It emphasizes adaptability, teamwork, and delivering value quickly. Scrum is ideal for projects needing flexibility and regular feedback.

As a Business Analyst (BA), I would support the Waterfall methodology for this project because it is a structured and sequential approach that aligns well with the clear and defined requirements from stakeholders like Mr. Henry, Peter, Kevin, and Ben. Since the scope of the project is well-understood, with a specific goal of creating an online agriculture product store, Waterfall would allow us to follow a systematic process from requirement gathering, design, development, testing, and deployment, ensuring all phases are completed before moving on to the next. This methodology would be ideal for ensuring each stage is thoroughly reviewed and that the project progresses in a controlled, predictable manner, which is crucial given the fixed budget of 2 Crores INR and the 18-month duration. Additionally, Waterfall's linear approach helps in maintaining clear timelines, budget allocation, and scope management, making it easier to track progress and ensure quality deliverables at each phase.

Question 10: Waterfall Vs V-Model

Waterfall	V-Model
The process is linear and sequential. Each phase (like requirements, design,	It is also sequential but has a "V" shape. For every development phase on the left side of

development, testing) happens one after the other, and you can't go back to a previous phase once it's completed.	the "V", there's a corresponding testing phase on the right side. Testing is planned alongside development.
Testing happens only after the development is fully completed	• Testing is integrated from the beginning. Every phase of development has a corresponding test phase to ensure quality.
Changes are difficult to incorporate after a phase is completed because the process is rigid and flows downward.	It is slightly more structured for detecting errors early, but it's still not very flexible for handling changes during the development process.
Errors are usually found at the testing stage, which occurs late in the process	Errors can be detected early because testing activities are defined alongside each development phase.
Best for simple, well-defined projects where requirements are unlikely to change.	Suitable for projects with strict quality requirements or where testing is critical.

Question 11: Justify your choice

Answer: As the requirements are simple, I would recommend waterfall model

Question 12: Gantt Chart

Project Tasks	**Start Date**	**End Date**	**Resources Involved**
RG	01 Jan 2024	01 Feb 2024	PM, BA, Stakeholders
RA	02 Feb 2024	02 Mar 2024	PM, BA, Stakeholders
Design	03 Mar 2024	03 Apr 2024	PM, BA, UI/UX, Network Admin
D1	04 Apr 2024	04 May 2024	PM, BA, UI/UX, Network Admin
T1	05 May 2024	05 Jun 2024	BA, Testers, Java Developer
D2	06 Jun 2024	06 Jul 2024	PM, BA, UI/UX, Network Admin

T2	07 July 2024	07 Aug 2024	BA, Testers, Java Developer
D3	08 Aug 2024	08 Sep 2024	PM, BA, UI/UX, Network Admin
T3	09 Sep 2024	09 Oct 2024	BA, Testers, Java Developer
D4	10 Oct 2024	10 Nov 2024	PM, BA, UI/UX, Network Admin
T4	11 Nov 2024	11 Dec 2024	BA, Testers, Java Developer
UAT	12 Jan 2025	12 Feb 2025	PM, BA, Testers, Stakeholders

Ghantt Chart Excel :
https://d.docs.live.net/63c858940af7e992/Desktop/Capstone%20Proj%201.xlsx

Question 13: Fixed Bid Vs Billing projects

Fixed Bid	**Billing projects**
The price for the entire project is agreed upon upfront. The client pays a fixed amount regardless of the time or resources it takes to complete the project.	The client pays based on the time spent and materials used. There is no fixed price; payment depends on hours worked or resources consumed.
The scope is fixed and there is no flexibility	The scope is flexible and changes are allowed
The service provider bears the risk. If the project takes longer costs than expected then vendor will still get the same agreed amount	Client bears the risk
Used for simple and predictable projects	Used for complex and evolving projects

Question 14: Prepare Timesheets of a BA in various stages of SDLC

Design Timesheet of a BA

Date	**Task**	**In Time**	**Out Time**	**Duration**
03 Mar 2024	Participate in design discussions	10:00 AM	07:00 PM	9 Hrs

	with stakeholders and technical teams to clarify requirements and bridge any gaps.			
11 Mar 2024	Collaborate with system architects and developers to create detailed Functional Specification Documents (FSDs).	10:00 AM	07:00 PM	9 Hrs
19 Mar 2024	Ensure that all business rules, data mapping, and functional processes are correctly translated into the design.	10:00 AM	07:00 PM	9 Hrs
22 Mar 2024	Develop wireframes, mockups, or prototypes to visualize the system.	10:00 AM	07:00 PM	9 Hrs
03 Apr 2024	Coordinate with stake holders for the approvals of the wireframes	10:00 AM	07:00 PM	9 Hrs

Development Timesheet of a BA

Date	**Task**	**In time**	**Out time**	**Duration**
04 Apr 2024	Provide Requirement Clarifications	10:00 AM	07:00 PM	9 Hrs
11 Apr 2024	Monitor Development Progress	10:00 AM	07:00 PM	9 Hrs

17 Apr 2024	Maintaining a Requirements Traceability Matrix (RTM).	10:00 AM	07:00 PM	9 Hrs
21 Apr 2024	Coordinate with QA Team	10:00 AM	07:00 PM	9 Hrs
29 Apr 2024	Act as a bridge between developers, testers, and stakeholders, ensuring everyone is aligned.	10:00 AM	07:00 PM	9 Hrs
04 May 2024	Regularly update stakeholders on development progress and any challenges encountered.	10:00 AM	07:00 PM	9 Hrs

Testing Time sheet of BA

Date	**Task**	**In time**	**Out time**	**Duration**
05 May 2024	Collaborate with the Quality Assurance (QA) team to review test cases and scenarios to ensure they align with the business requirements.	10:00 AM	07:00 PM	9 Hrs
12 May 2024	Review defects reported by the QA team to	10:00 AM	07:00 PM	9 Hrs

	determine if they are valid issues or changes in scope.			
19 May 2024	Provide regular updates to stakeholders on the testing progress, key issues, and resolutions.	10:00 AM	07:00 PM	9 Hrs
23 May 2024	Retest resolved defects or newly implemented changes to ensure they meet requirements.	10:00 AM	07:00 PM	9 Hrs
05 Jun 2024	Track the completion of test cases and report any delays or risks to project timelines and document the approvals during the testing phase	10:00 AM	07:00 PM	9 Hrs

UAT Timesheet of BA

Date	Task	In time	Out time	Duration
06 Jun 2024	Help create test cases and scenarios based on real-world use cases	10:00 AM	07:00 PM	9 Hrs
15 Jun 2024	Schedule and coordinate UAT sessions with stakeholders,	10:00 AM	07:00 PM	9 Hrs

	end-users, and testers.			
23 Jun 2024	Train end-users on how to use the system and perform UAT effectively.	10:00 AM	07:00 PM	9 Hrs
27 Jun 2024	Record defects or issues reported during UAT in a defect-tracking system.	10:00 AM	07:00 PM	9 Hrs
06 Jul 2024	Obtain UAT Sign-Off	10:00 AM	07:00 PM	9 Hrs

Deployment and Implementation time sheet of BA

Date	Task	In time	Out Time	Duration
07 Jul 2024	Ensure all necessary pre-deployment activities (such as testing, approvals, and documentation) are completed.	10:00 AM	07:00 PM	9 Hrs
14 Jul 2024	Collaborate with stakeholders to align schedules and expectations for the deployment.	10:00 AM	07:00 PM	9 Hrs
22 Jul 2024	Track deployment progress and provide real-time updates to stakeholders.	10:00 AM	07:00 PM	9 Hrs
29 Jul 2024	Conduct post-deployment validation checks to ensure the system	10:00 AM	07:00 PM	9 Hrs

	functions as expected in the live environment.			
07 Aug 2024	Gather and analyze feedback from end-users post-implementation and document any issues or improvement requests	10:00 AM	07:00 PM	9 Hrs