Nurturing Process - Capstone Project1 – Part -2/3

Name- Srishti Gupta

Date – 05.04.2025

Question 1 – Audits

4 Quarterly Audits are planned Q1, Q2, Q3, Q4 for this Project What is your knowledge on how these Audits will happen for a BA?

Answer:

Quarter 1:

Stage	Quarter 1 – Audit Report (Requirement gathering phase)
Completed	10 week (Week 1 to week 10)
Checklist	BRD Template Elicitation result report Duplicate requirement report Grouping of functionalities/features – Client sign off Email communication – To, CC, BCC

Quarter 2:

Stage	Quarter 2 – Audit Report (Requirement analysis phase)
Completed	7 week (Week 16 to week 23)
Checklist	UML Diagrams Business to functional requirement mapping Client sign off - Document RTM document version control Email communication – To, CC, BCC

Quarter 3:

Stage	Quarter 3 – Audit Report (Design phase)
Completed	7 week (Week 30 to week 37)
Checklist	Utilization of tools Documentation evidence on client communication Stakeholder MOM JAD Session Report Email communication – To, CC, BCC

Quarter 4: No audits to be conducted at the time of development stage.

Quarter 5:

Stage	Quarter 5 – Audit Report (Testing phase)
Completed	20 week (Week 58 to week 78)
Checklist	Test Case summary Training report to end users Lesson learnt document Email communication – To, CC, BCC End user manual preparation document

Question 2 – BA Approach Strategy

Answer-2

a) What Elicitation Techniques to apply?

As per my understanding we can use the below elicitation techniques:

- **Workshop-** It is a structured meeting where stakeholder and subject matter experts work together to define the established requirements for a project. We can gather farmers and manufacturers to bridge gap in understanding the flow of information.
- **Surveys/Questionnaires-** It is a method to gather all the information from multiple stakeholder in a system development process. We can use this to collect data from a group of farmers and manufacturers about their requirements and preferences.
- **Brainstorming –** It is a technique used to generate ideas, solutions and requirements for a project. In this process all the questions and challenges are introduced and participants are asked to propose as many ideas and solution as possible.

b) How to do Stakeholder Analysis RACI/ILS?

The RACI matrix can help clarity roles and responsibilities and ensure that stakeholder needs are addressed in the project – Responsible, Accountable, Consulted and Informed.

- Responsible: The individual performing the task.
- Accountable: The individual ultimately answerable for the task
- Consulted: Stakeholder whose opinions are sought
- Informed: Stakeholders kept up to date on progress.

c) What Documents to write?

We can write the below documents.

- **Initiation Documents-** These documents are created during the initial phase of the project to define objective, scope and stakeholder.
- **Business Required Document –** A high level document that outlines business needs and goals of a project. It's created at the beginning of a project and serves as a foundation for all other deliveries.
- **Functional Required Document-** A detailed document that outlines how to fulfil the business needs of the project, it's created after the BRD and breaks down the business requirements into technical specifications.
- **Non Functional Requirement-** It is to identify the requirements related to performance, security and usability.

- **Use case Document –** A document that describes how a user interacts with a system or product.
- **Test case documentation-** A document that includes test strategies , test cases, bugs and execution reports, It helps to ensure that all requirements are met and to minimise the time and cost of software development.
- **Risk Management Plan-** This document identifies the potential risk of project.

d) What process to follow to sign off on the Documents?

A project sign-off is a formal process that acknowledges the completion of a project and the delivery of its deliverables. Here are the steps to follow the sign-off process:\

- Preparing sign off document.
- Organizing a sign-off meeting.
- Presenting sign-off document.
- Discussing feedback.
- Asking for sign-off via email
- Documenting Approvals.
- Communication sign –off to all stakeholders.

e) How to take Approvals from the client?

Establish a formal meeting with the client to keep them informed and get continuous feedback.

Once the feedback is received, we can send a formal email to ask for an approval to sign off the project. After the approval is received, we can forward it to all the stakeholders and document it.

f) What communication channel to establish and implement?

Regular Meetings –

- Weekly status meetings
- Bi-Weekly sprint reviews
- monthly stakeholder updates
- Face to face meetings, E mail communication, telephonic comm. online messaging.

g) How to handle change Request?

To handle the change request we can follow the below steps:

- Change Request form
- Do Impact Analysis
- Documentation

h) How to update the progress of the project to stakeholder?
- Weekly status Reports
- Monthly Review Meetings

i) How to take signoff on the UAT –client Project Acceptance Form?

- UAT Preparation
- Conduct UAT
- Fix Issues
- Acceptance Form
- Final Review Meeting
- Obtain Sign-off

Question 3 – 3-Tier Architecture

Explain and illustrate 3-tier architectures

Answer-3

This divides the application into 3 logical layer-

1. **Application Layer-** Topmost layer of architecture – also known as Presentation Layer – It handles user interface (UI) components such as screens pages. Ex- E commerce Website.

2. **Business Logic Layer-** Middle layer of architecture – act as an intermediary between the presentation layer and the data storage layer –layer contains the core logic of the application. Ex- Printer, Payment gateways.

3. **Database Layer-** Bottom-most layer of the architecture – responsible for storing and retrieving data. Ex- MySQL, Oracle database.

Question 4 – BA Approach Strategy for Framing Questions

Business Analyst should keep what points in his/her mind before he frames a Question to ask to the Stakeholder

(5W 1H – SMART – RACI – 3 Tier Architecture – Use Cases, Use case Specs, Activity Diagrams,Models, Page designs)

Answer-4

I. **5W1H Framework –** This framework helps to analyse the project by the below question.

Question	Answer
Who?	Farmers, manufacturers, delivery teams, SONY company, and APT IT Solutions stakeholders.

What?	An online platform for farmers to purchase agricultural product like fertilizers, seeds, and pesticides
When?	Over 18 months with a budget of 2 Cr. INR.
Where?	Remote areas where farmers face difficulties procuring agricultural products.
Why?	To simplify access to essential products, reducing logistical challenges for farmers.
How?	Through a web/mobile application that connects farmers and manufacturers directly.

II. **Smart Goals-** Specific, Measurable, Attainable, Relevant and Time Bound goals for the project.

Criteria	Details
Specific	Develop a platform for farmers to browse, purchase , and receive agricultural products.
Measurable	Ensure at least 90% of farmers can place orders successfully during UAT.
Achievable	Use existing technology stack and skilled personnel within the budget and timeframe.
Relevant	Aligns with CSR goals of SONY company and address farmer's challenges.
Time-bound	Deliver the solution within 18 months.

III. **RACI Matrix-** This helps to define and clarify the roles and responsibilities within a team by outlining.

- **Responsible-** The individual performing the task
- **Accountable-** The individual ultimately answerable for the task
- **Consulted -** Stakeholder whose opinions are sought
- **Informed –** Stakeholder kept up to date on progress

IV. **3 Tier Architecture-** It's a software application that organizes application into 3 logical tier.
  i. **Presentation Layer-**
- How would be the application 1st page?
- How the filter option would work for different products listed in the application?
- How would the sensitive info will be protected?
- Will the store be available on both web and mobile platform for farmers?

  ii. **Application Layer-**
- How would the system work after farmers places?
- How would the project will be listed with in stock and out of stock?

- How would the System confirmed once order is confirmed?

   iii.   **Database Layer –**
- What type of details does the data store?
- How does the data store the user information, how will the data manage?
- How would the database manage the payment option?

  V.   **Use Case-** It refer to a description of how a farmer ad manufacturer interact with the system to achieve a specific goal.

  VI.   **Use Case specs -** It provide a detailed description of the functional behaviour of a system from a user's perspective.

  VII.   **Activity Diagram-** It is a type of UML (Unified Modelling Language) diagram that visually represent the workflow of a system or process. For Mr, Henry's online agriculture products store case study, an activity diagram would illustrate how farmers interact with system to browse, select and purchase agriculture product and how system proceed these actions.

  VIII.   **Page Design-** After requirement gathering we can start page design along with the software design process.

Question 5 – Elicitation Techniques

As a Business Analyst, What Elicitation Techniques you are aware of? (BDRFOWJIPQU)

Answer 5-

Here the Elicitation Techniques- BDRFOWJIPQU

1. B- **Brainstorming-**Brainstorming is a collaboration technique where a group of stakeholders come together to generate a wide range of ideas, solution, or requirement in a short amount of time. The goal is to come up with as many ideas as possible without criticism.

2. **D- Document Analysis –** Document analysis involve reviewing existing documents, such as business process map policies, standards and reports, to extract relevant requirements and information. This technique is useful for understanding current systems, regulations or workflows that impact the project.

3. **R- Reverse Engineering –** Reverse engineering is a process of analysing and deconstructing a system, product, or component to understand its structure, functionality and operation. The goal of reverse engineering is to

extract knowledge or design information from the existing product without prior access to the original design documents or source code.

4. **F- Focus Group –** Focus groups are small groups of stakeholders, typically end users, gathered together to discuss their needs , expectations, and pain points regarding the system or process in question.

5. **O- Observations(Job Shadowing) –** Observation involves watching users perform their work in their natural environment.

6. **W- Workshops (facilitated Session) –** Workshops involve structured and collaborative session where stakeholders, including users and domain experts, work together to define business processes, identifying problems, and generate solutions. They encourage interaction and direct involvement in the requirements gathering process.

7. **J- Joint Application (JAD) –** JAD is a highly structured, facilitated session where business users, IT staff, and other stakeholders come together to discuss and define system requirements.

8. **I - Interviews –** Interviews are one-on-one discussions with stakeholders to gather detailed insights about their needs, problems, and expectations. Interviews can be structured or unstructured.

9. **P- Prototyping –** Prototyping involves building an early simplified version of a system that stakeholders can interact with. Feedback from stakeholders is used to refine the prototype, and this iterative process helps clarity and define requirements.

10. **Q-Questionnaires-** Questionnaires or surveys are written tools used to collect information from a large group of stakeholders.

11. **U-Use Cases-** Use cases describe how users will interact with a system to achieve a specific goal. Creating use cases with stakeholders helps to define

functional requirements in a structured way by detailing system actions, user interactions and expected outcome.

Question 6 – This project Elicitation Techniques

Which Elicitation Techniques can be used in this Project and Justify your selection of Elicitation Techniques?

Prototyping

Use case Specs

Document Analysis

Brainstorming

Answer 6-

Together, these techniques can provide a comprehensive and adaptable approach to gathering requirements for complex systems or projects each has its strengths depending on the stage of the project and the nature of the requirements.

- **Prototyping –** Prototyping involves creating a working model of the system early in the project. This prototype is continuously refined based on the feedback, allowing stakeholder to interact with the system and clarity their needs.

- **Use case Specs-** Use case describe how users will interact with a system achieve a specific goal. Creating use case with stakeholders helps to define functional requirements in a structured way by detailing system actions , user interaction and clarify their needs.

- **Document Analysis-** Document Analysis involve reviewing existing documents , such as business process maps, policies, standards and reports to extract relevant requirements and information. This is useful for understanding current systems, regulations or workflows
That impact the projects.

- **Brainstorming-** Brainstorming is a collaboration technique where a group of stakeholders come together to generate a wide range of ideas, solution, or requirement in a short amount of time. The goal is to come up with as many ideas as possible without criticism.

Question 7 – 10 Business Requirements

Identify Business Requirements (which includes Stakeholder Requirements)

BR001 – Farmers should be able to search for available products in fertilizers, seeds, pesticides

BR002 – Manufacturers should be able to upload and display their products in the application

Answer 7-

Req. ID	Requirement Name	Description
BR001	Accessibility	If the application would be accessible via both desktop and mobile.
BR002	Ease of use	The application should be easy to use for all the farmers and manufacturers.
BR003	Language	The application should be have multiple language as per the user's convenience.
BR004	Search & Filter	The user should be able to search all the available options and add a filter to it.
BR005	Data logging	The manufacturers should be able to upload all the details with respective bifurcation.
BR006	System update	The application should update the details about the availability of the products real time.
BR007	Privacy	The application should be able to protect all the personal data uploaded by users.
BR008	Tracking	The application should support the method to track the order and provide the delivery date/day update.
BR009	Support and feedback	There should be a system to provide pre-sales and post –sales support to users for the effectiveness of the application.
BR010	Notification & Alert	The application should be able to send the notification and important updates such as system errors, approval request, or order status change.

Question 8 –Assumptions

List your assumptions

1. The stakeholders would have all the idea around the business requirements before the first stage of the project.
2. The stakeholder would attend all the meetings on time as per the decided schedule.
3. All the users would have the basic knowledge to use the application.
4. All the necessary data would be available for the technical team to use and prepare the designing and development stage.
5. The common resources like mobile devices and internet connection would be available for the users.

6. The application would be developed within a given time frame and decided budget.
7. There would be no unethical work involved while working on this project.
8. All third party stakeholder would co-ordinate properly at each stage of the project.
9. The logistics and delivery will be done seamlessly in all the locations of the users.
10. The logistics and delivery will be done seamlessly in all the locations of the users.
11. The overall users of the application would increase with time.

Question 9 – This project Requirements Priority

Give Priority 1 to 10 numbers (1 being low priority – 10 being high priority) to these Requirements after discussions with the stakeholders.

Answer 9

With the help of MosSCoW (Must-have, Should Have, Could Have, and Won't Have This Time), technique we can priorities the list of top 10 business requirements.

Req. ID	Requirement Name	Description
BR001	Accessibility	If the application would be accessible via both desktop and mobile.
BR002	Ease of use	The application should be easy to use for all the farmers and manufacturers.
BR003	Language	The application should be have multiple language as per the user's convenience.
BR004	Search & Filter	The user should be able to search all the available options and add a filter to it.
BR005	Data logging	The manufacturers should be able to upload all the details with respective bifurcation.
BR006	System update	The application should update the details about the availability of the products real time.
BR007	Privacy	The application should be able to protect all the personal data uploaded by users.
BR008	Tracking	The application should support the method to track the order and provide the delivery date/day update.
BR009	Support and feedback	There should be a system to provide pre-sales and post –sales support to users for the effectiveness of the application.
BR010	Notification & Alert	The application should be able to send the notification and important updates such as system errors, approval request, or order status change.

Question 10 – Use Case Diagram

Draw use case diagram.

Answer-10

The use case diagram is a type of UML diagram which is used to represent the functional requirements of a system and the interaction between the system and its external actors. For Mr. Henry's project, We can consider Manufacturers, Farmers, and Delivery partners as actors.

In the below use case diagram the mail use cases can be for registration by manufacturers, login by farmers/ users, search option subsections , payment methods available and order confirmation status via email/text message.

Question 11 – (minimum 5) Use Case Specs

Prepare use case specs for all use cases.

Answer 11-

1. Use Case Document for login to the online agriculture store.

User Case ID	UC001		
Use Case Name	User Login		
Created By	Mr Daniel	Last Updated by	November 1st,2024
Data Created	August 31st,2024	Last Revision dtd.	November 15th,2024
Actor	Farmer, Manufacturer Admit		
Description	This use case describes how the user can login.		
Pre-condition	a. The user must have internet activity. b. The user must have registered account to login to the application.		
Post condition	.The user successfully logged in and re-directed tot eh dashboard of the application.		
Normal flow	a. The user navigate to the login page of the online agriculture store. b. The login page ask for the user Name / phone no. /email address and password. c. The user enters the credentials and click to the login button. d. The system verified the credential and redirected the user To the dashboard.		
Alternative flow	a. In case user fails to login successfully , the system will show an error message for "invalid credentials" b. The system will then provide an option for "Forgot User ID/ Password". c. The user is asked to re-enter their credentials.		
Exceptions	a. If the user forgot their password. b. If the internet connectivity is not working. c. If the application is facing some technical issue.		
Frequency of use	High		
Assumptions	a. It is assumed that the users has registered to the applications.		

	b. It is assumed that the user known the credential correctly.

2. Use Case Document for "Searching products" to the online agriculture store.

User Case ID	UC002		
Use Case Name	Search Products		
Created By	Mr Daniel	Last Updated by	November 1st,2024
Data Created	August 31st,2024	Last Revision dtd.	November 15th,2024
Actor	Farmer, Manufacturer Admit		
Description	This use case describes how the farmers would search for products.		
Pre-condition	a. The user must be logged in to the application. b. The application must have the data uploaded by the manufacturers.		
Post condition	The farmer was able to search for the desired product.		
Normal flow	a. The user clicked on the search bar on the dashboard of the application. b. The user enter a keyword like "seed" and click on search button. c. The application would show the complete list of similar products. d. User can click on them product to see complete details and specifications of the product including product name, quantity in options, price, other specification and manufacturer seller details. e. Along with the list of product , the application would show a filter option to sort the list as per brand , price, variety quantity etc.		
Alternative flow	a. In case no product match with the keyboard searched, the application would redirect to page that will show "no product found". b. The user can try search with different keyword.		
Exceptions	a. If the internet connectivity is not working. b. If the application is facing some technical issue.		
Frequency of use	High		
Assumptions	a. The product database matched with the keyword searched by the user. b. The user has knowledge to use the search option and applying filter to the searched list of the products.		

3. Use Case Document for "Adding product in the cart" to the online agriculture store.

User Case ID	UC003		
Use Case Name	Add product in the cart		
Created By	Mr Daniel	Last Updated by	November 1st,2024
Data Created	August 31st,2024	Last Revision dtd.	November 15th,2024
Actor	Farmer, Manufacturer Admit		
Description	This use case describes how the farmers would add the product in the cart.		
Pre-condition	a. The user must be logged in to the application.		

	b. The application must have the details of the product in the system inventory. The user has already reached to the product through the search option.
Post condition	The farmer has successfully added the product in the cart.
Normal flow	a. The user searches for the desired product in the search options. b. The application shows a list of all the similar products. c. The user selects the product they want to purchase. d. The user click on the "add to cart" button. e. The product gets added to the cart with the details – product name, price, and quantity. f. The system displays the message that the product is added in the cart.
Alternative flow	a. In case of user wants to changes the product after adding a product to the cart. b. The user wants to change the quantity selected for the products.
Exceptions	a. If the product is out of stock. b. If the application is facing some technical issue.
Frequency of use	High
Assumptions	a. The user has knowledge to add the product to the cart. b. The product details are up to date and the application showing the "In stock" and "out of stock" products properly.

4. Use Case Document for "Making Payment" to the online agriculture store.

| User Case ID	UC004		
Use Case Name	Making Payment		
Created By	Mr Daniel	Last Updated by	November 1st,2024
Data Created	August 31st,2024	Last Revision dtd.	November 15th,2024
Actor	Farmer		
Description	This use case describes how the farmers would make payment for the products available in the cart.		
Pre-condition	a. The user must be logged in to the application. b. The user must have added to some products to the cart. c. The application should have secure option to the make the payment.		
Post condition	The farmer has successfully made the payment for the products.		
Normal flow	a. The user searched and added the products to the cart to checkout. b. The system display the total amount to be paid for all the products added to the cart. c. The user click on the option " proceed to pay" d. The application shows different method to make the payment as:- UPI Credit Card Debit Card Wallet		

	Cash on delivery Net banking e. The user selects an option and click on the pay now button. f. The system processes the payment through the payment gateway. g. The payment gateway confirms the transactions and sends a response to the system. h. The system displays a confirmation message: "Payment successful! Your order has been placed. i. The user receives as order confirmation with a receipt via email/SMS.
Alternative flow	a. In case the user wants to change the payment method, the application would show an option to go back to the previous page. b. In case user wants to add any discount available on the products.
Exceptions	a. If the payment fails after clicking on the pay now through the desired gateway of the payment, the application would ask to "retry to make payment after few minutes". b. In case the product is interrupted due to any bank or technical issue. c. In case the sufficient balance is not available in the chosen payment method.
Frequency of use	High
Assumptions	a. The user has knowledge to use different payment methods. b. The user would have sufficient amount in their bank account to make the required payment.

5. Use Case Document for "Product Delivery" to the online agriculture store.

User Case ID	UC005		
Use Case Name	Making Payment		
Created By	Mr Daniel	Last Updated by	November 1st,2024
Data Created	August 31st,2024	Last Revision dtd.	November 15th,2024
Actor	Farmers, manufacturers and delivery partner		
Description	This use case describes how the process of delivering purchased products to the user designated address after an order has been successfully in the system.		
Pre-condition	a. The user has successfully placed an order and the complete the payment process. b. A valid delivery address is provide during the checkout process. c. Product are available in stock and ready to dispatch.		
Post condition	Product are delivered successfully to the customer's specified address and the order status is updated to "Delivered".		
Normal flow	a. After the order is placed and payment is confirmed, the system generated unique order ID. b. The system assign the order to the logistics/delivery partner.		

	c. The logistics team receives the order details, including the delivery address and product information. d. The warehouse staff prepares the product for the shipment, including secure packing and labelling. e. The delivery partner collects the package and updated the system with the shipments status. f. The system needs a notification to the user with the tracking details. g. The delivery partner delivers the product to the user specified address. h. Upon successfully delivery, the system updates the order status to "Delivery" and notifies the users.
Alternative flow	a. In case user want to change the address of the product delivery. b. In case the delivery is delayed due to some reason.
Exceptions	a. If the Delivery fails due to incorrect address or user unavailability, the system notifies the user and provides options for rescheduling or cancellation. b. In case the user receives any damaged/missing products after the delivery of the products, the user reports the issue to customer support and the system initiates a replacement or refund process as per the return policy.
Frequency of use	High
Assumptions	a. The customer provides the accurate delivery address and contact details. b. The delivery partner provides timely delivery services. c. The product are dispatched within the given timeline ate the time of order placing.

Question 12 – (minimum 5) Activity Diagrams

a. Activity Diagram:User Login

```
                    ●
                    │
                    ▼
          ┌──────────────────────┐
          │ Enter login Credential│◄──────────────────┐
          └──────────────────────┘                    │
                    │                                  │
                    ▼                                  │
                  ◇ ─────────────────►┌────────────────────────┐
                  ◇                   │ Invalid login / Password│
                    │                 └────────────────────────┘
                    ▼
          ┌──────────────────────┐
          │ Successfully Logged In│
          └──────────────────────┘
                    │
                    ▼
                    ●
```
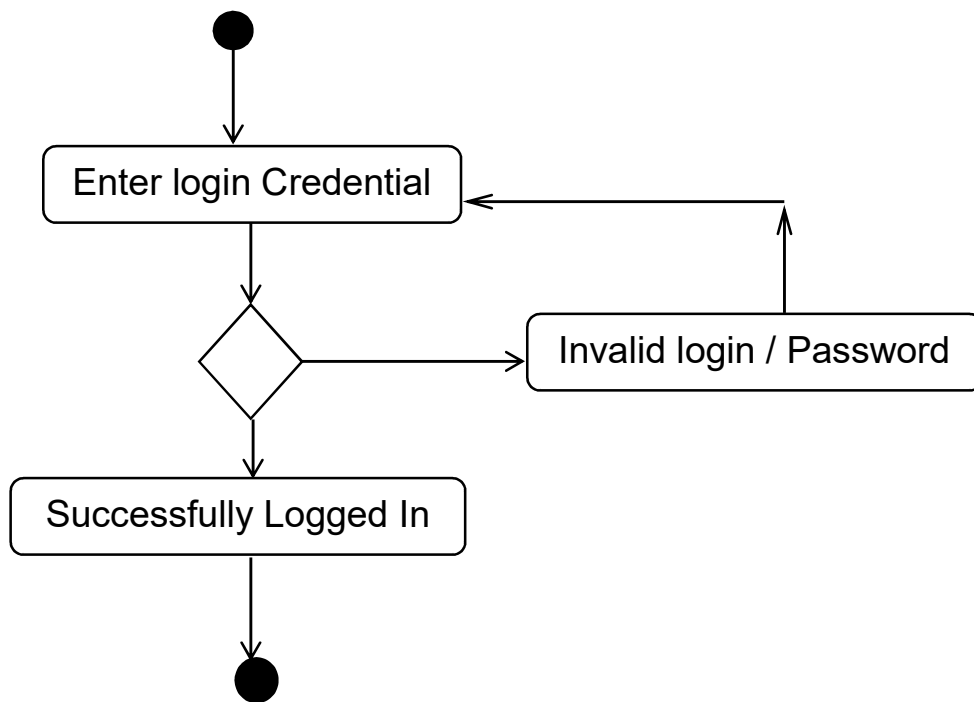
b. Activity Diagram :Search Product
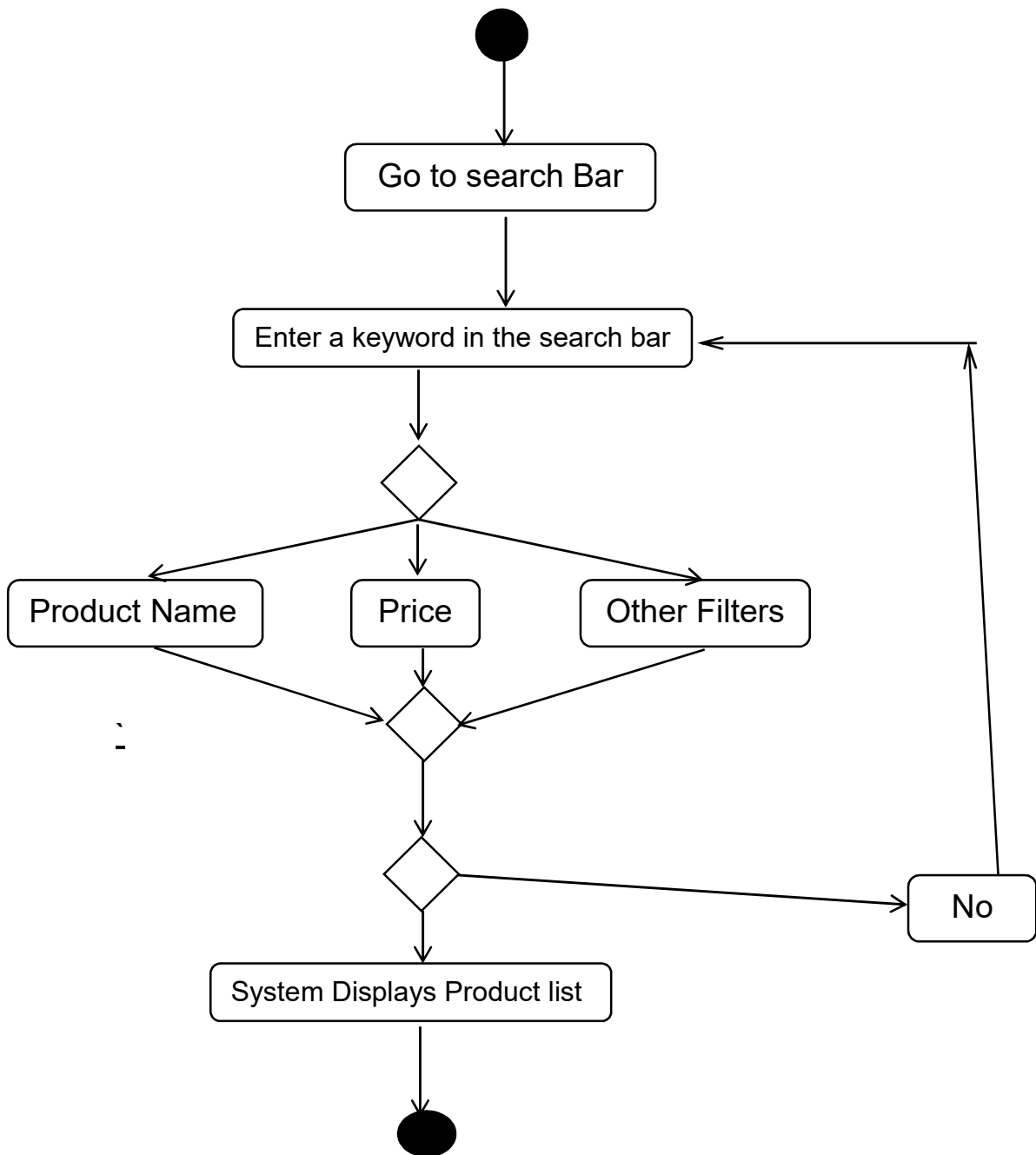
C. Activity Diagram : Add Product to cart

Search for product

No product found

Item/Product Selected

Item Added to the Cart

System shows message: Item added to the cart
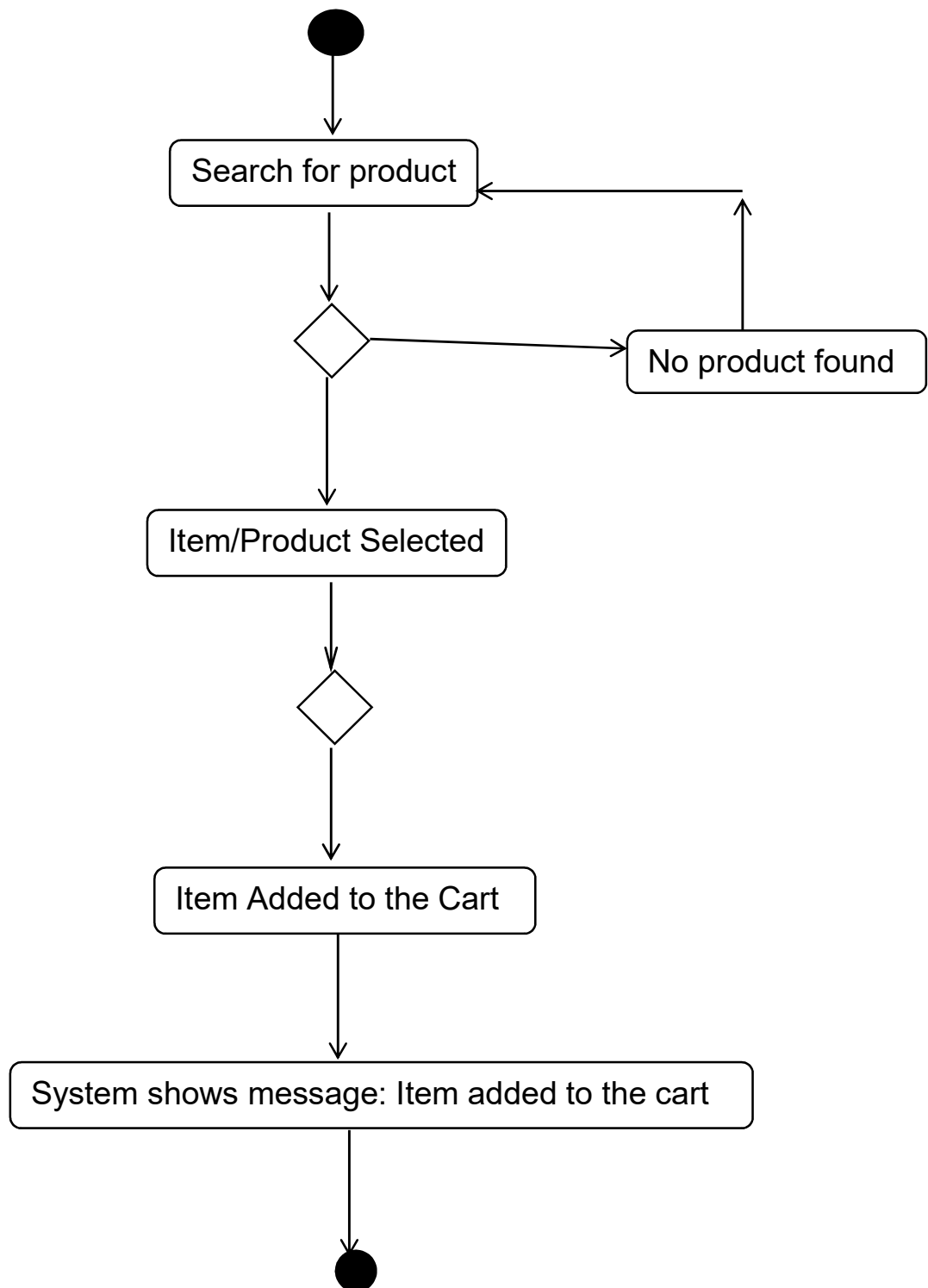
d. **Activity Diagram : Make payment for the product added in the cart**
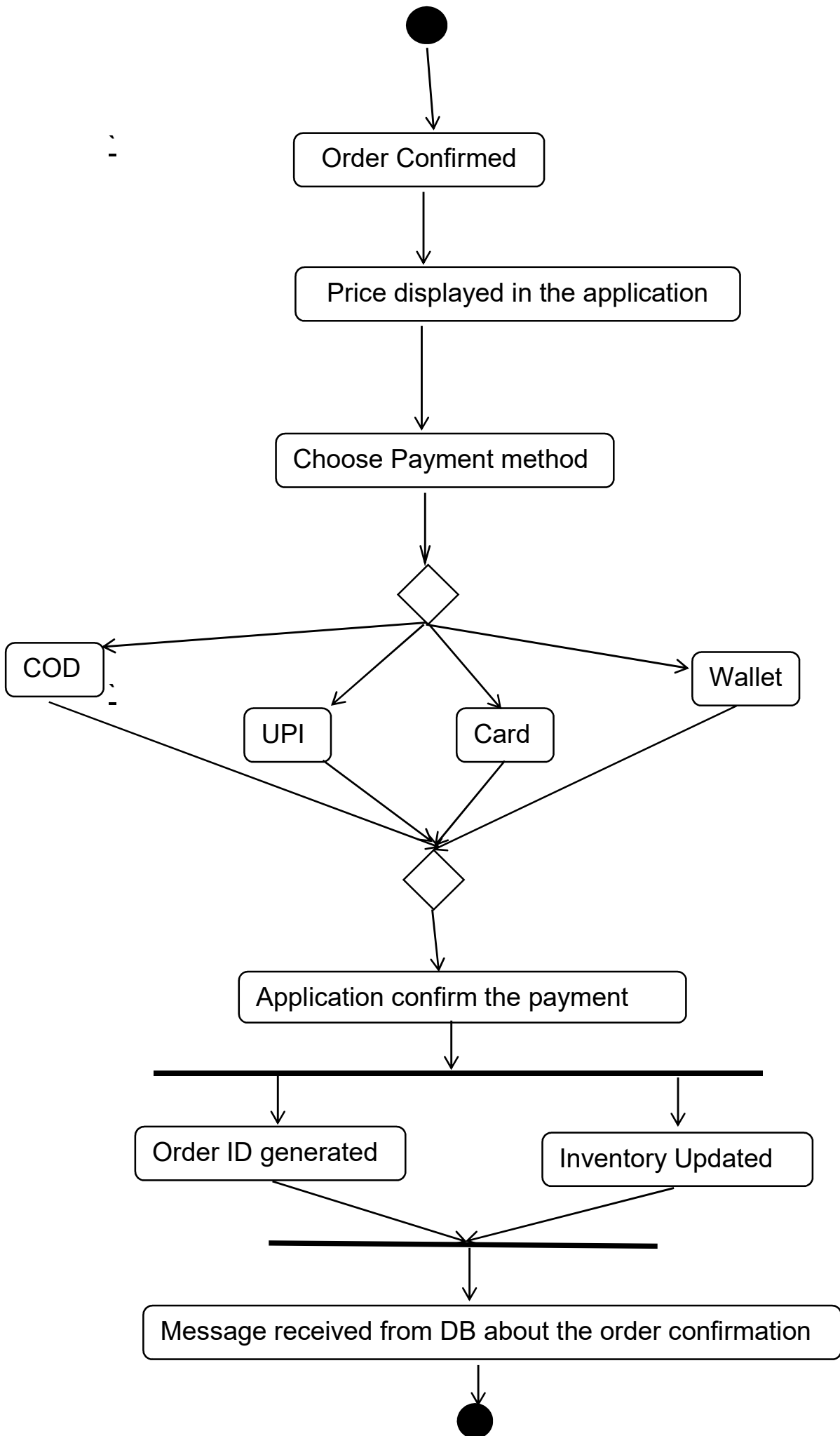
e. Activity Diagram : Delivery Partner Delivered the product

```
                        ●
                        │
                        ▼
┌──────────────────────────────────────────────────┐
│  Deliver Partner gets the notification about new order │
└──────────────────────────────────────────────────┘
                        │
                        ▼
            ┌──────────────────────────┐
            │  Order is packed by manufacturer │
            └──────────────────────────┘
                        │
                        ▼
            ┌──────────────────────────┐
            │  Order is picked by deliver partner │
            └──────────────────────────┘
                        │
                        ▼
            ┌──────────────────────────┐
            │  Order is delivered to the customer │
            └──────────────────────────┘
                        │
                        ▼
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━
       ↙                           ↘
┌──────────────────────┐   ┌──────────────────────────────┐
│  SMS/ Email confirmation │  │  Product status is updated to delivered │
└──────────────────────┘   └──────────────────────────────┘
          ↘                       ↙
                   ◇
                   │
                   ▼
        ┌──────────────────────────┐
        │  Feedback shared by customer │
        └──────────────────────────┘
                   │
                   ▼
                   ●
```