Order Fulfillment Process Specification

This document outlines the Order Fulfillment Process BPMN model, covering tasks from order placement to closure. Errors identified in specific files indicate necessary corrections to ensure a smooth and accurate fulfillment process.

Process Steps and Details
Order Placement

Step Summary: Customers can place orders online or in-store.
Process Details:
Online Orders: System checks product availability immediately.
In-Store Orders: Sales representative manually verifies availability.
Exit Criteria: Product availability confirmed or restocking request generated.
Errors Identified:
Incorrect Link File: Incorrect link between tasks or events, potentially affecting task flow.

Stock Check

Step Summary: Product availability is verified.
Process Details:
If Available: System or sales representative confirms availability to customer.
If Unavailable: Restocking request generated; customers are notified and may choose to wait or cancel.
Exit Criteria: Product availability confirmation or restocking notification.

Order Payment

Step Summary: Customer payment is processed.
Process Details:
Online: Payments processed via credit card, PayPal, or bank transfer.
In-Store: Customers may pay by cash, card, or financing options, and the sales representative registers payment.
Exit Criteria: Successful payment confirmation.
Errors Identified:
Logical Error File: Logical error in process flow, requiring a review of payment and verification steps.

Order Fulfillment

Step Summary: Order forwarded to warehouse for packaging.
Process Details:
Online Orders: Logistics team selects shipping method and provides tracking details to the customer.

In-Store Orders: Product is either handed to the customer or scheduled for delivery.
Exit Criteria: Order packaged and ready for shipping or pickup.
Errors Identified:
Task Error File: Task configuration error, potentially affecting fulfillment operations.

Shipping

Step Summary: Product is shipped or handed to the customer.
Process Details:
Online: Shipping company notified and tracking details sent to customer.
In-Store: Product handed directly to customer or scheduled for delivery.
Exit Criteria: Shipping confirmation or product handoff to customer.
Errors Identified:
End Start Error File: Start/End event mismatch error, potentially leading to premature termination or open-ended processes.
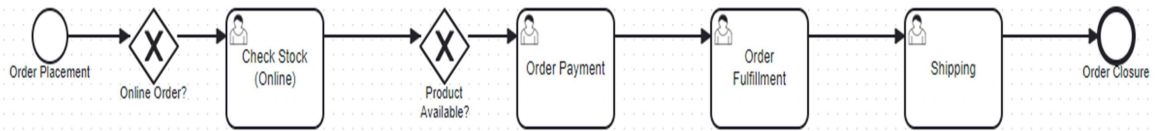
Order Closure

Step Summary: System marks order as complete after delivery or collection.
Process Details: Any post-delivery issues trigger the return or refund process.
Exit Criteria: Successful order closure.
Note: No errors found in the Ground Truth file.
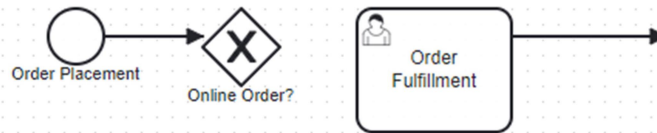
Error Summary

Task Error File: Task configuration error in Order Fulfillment.
End Start Error File: Start/End event mismatch in Shipping.
Incorrect Link File: Incorrect link detected in Order Placement.
Logical Error File: Logical error detected in Order Payment.
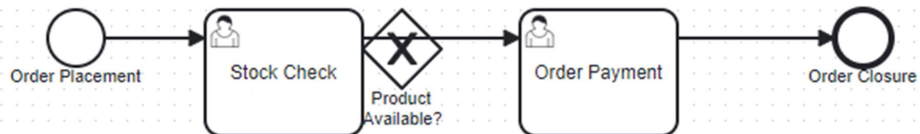Ground Truth File: No errors detected.

BPMN diagrams
Ground truth:-

Logical error:-

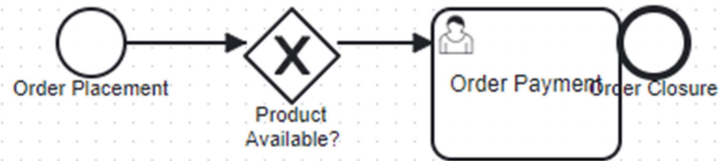Incorrect Link Error:

End/Start Event Error:-

Order Placement → Stock Check → Product Available? (X gateway)

Order Closure   Delivery Confirmation

Task Error:-

Order Placement → Product Available? (X gateway) → Order Payment / Order Closure

Annotated Entity Table for Order Processing Specification

Entity Type	Entity	Description
Process	Order Fulfillment Process	Overall process from order placement to closure for fulfilling customer orders.
Step	Order Placement	Step where customers place orders either online or in-store.
Step	Stock Check	Step where product availability is verified and restocking is managed if needed.
Step	Order Payment	Step where customer payments are processed for the order.
Step	Order Fulfillment	Step where the order is packaged and prepared for shipping or pickup.
Step	Shipping	Step where the product is shipped or handed to the customer.
Step	Order Closure	Final step where the system marks the order as complete.
Error Type	Incorrect Link File	Errors due to incorrect task or event links that disrupt task flow.
Error Type	Logical Error File	Logical errors in the process especially in the payment verification.
Error Type	Task Error File	Errors in task configuration particularly in the fulfillment process.
Error Type	End Start Error File	Start or end event mismatches that may lead to incomplete processes.
Error Type	Ground Truth File	File representing the correct model without any errors.
Criteria	Exit Criteria	Criteria that determine the completion of each step.
Criterion	Product availability confirmed or restocking request generated	Exit criteria for Order Placement step.
Criterion	Product availability confirmation or restocking notification	Exit criteria for Stock Check step.
Criterion	Successful payment confirmation	Exit criteria for Order Payment step.
Criterion	Order packaged and ready for shipping or pickup	Exit criteria for Order Fulfillment step.
Criterion	Shipping confirmation or product handoff to customer	Exit criteria for Shipping step.
Criterion	Successful order closure	Exit criteria for Order Closure step.
System Component	Online Order System	System used to place and verify online orders.
System Component	Payment Processing System	System component for handling online and in-store payments.
System Component	Logistics and Shipping System	System used for shipping products and tracking deliveries.