Crispy Donut Case

You are working on a big project as a Business Analyst at Crispy Donuts (CD), a donut company. You are focusing on CD's inventory management problem, but you have been asked to review the work of the team's most junior member who is assigned to the package loading and bill of lading sub-process. You remember that the Bill of Lading is the list of orders that are loaded onto a van for delivery. While you have not examined this process yourself, you have worked around it for several years and you have a general understanding,

You know that:

•Donut deliveries are planned by the baker. The Customer Service Representative prints a copy of the customer's order from the Order Tracking System (OTS) for both the baker and the shipping clerk. The shipping clerk separates the orders into two batches, one for local delivery and one for out-of-town delivery. You think he uses zip codes to make this decision. Zip codes of 19220, 19221,and 19222 refer to local deliveries that will be made by a CD van. At the bakery, the baker picks the donuts item by item until he has picked every item, and the order is complete. Once complete, he brings the orders to the van. If he can't find something and the order is short one or more items, he takes the rest of the items to fridge to keep the donuts cool and passes his copy of the order to his assistant. The assistant then investigates why the donut(s) is missing. If he can fix the problem within 24 hours he does so. If it looks like a bigger problem, he sends the order back to the CSR and asks him to contact the customer and ask how they want to proceed.

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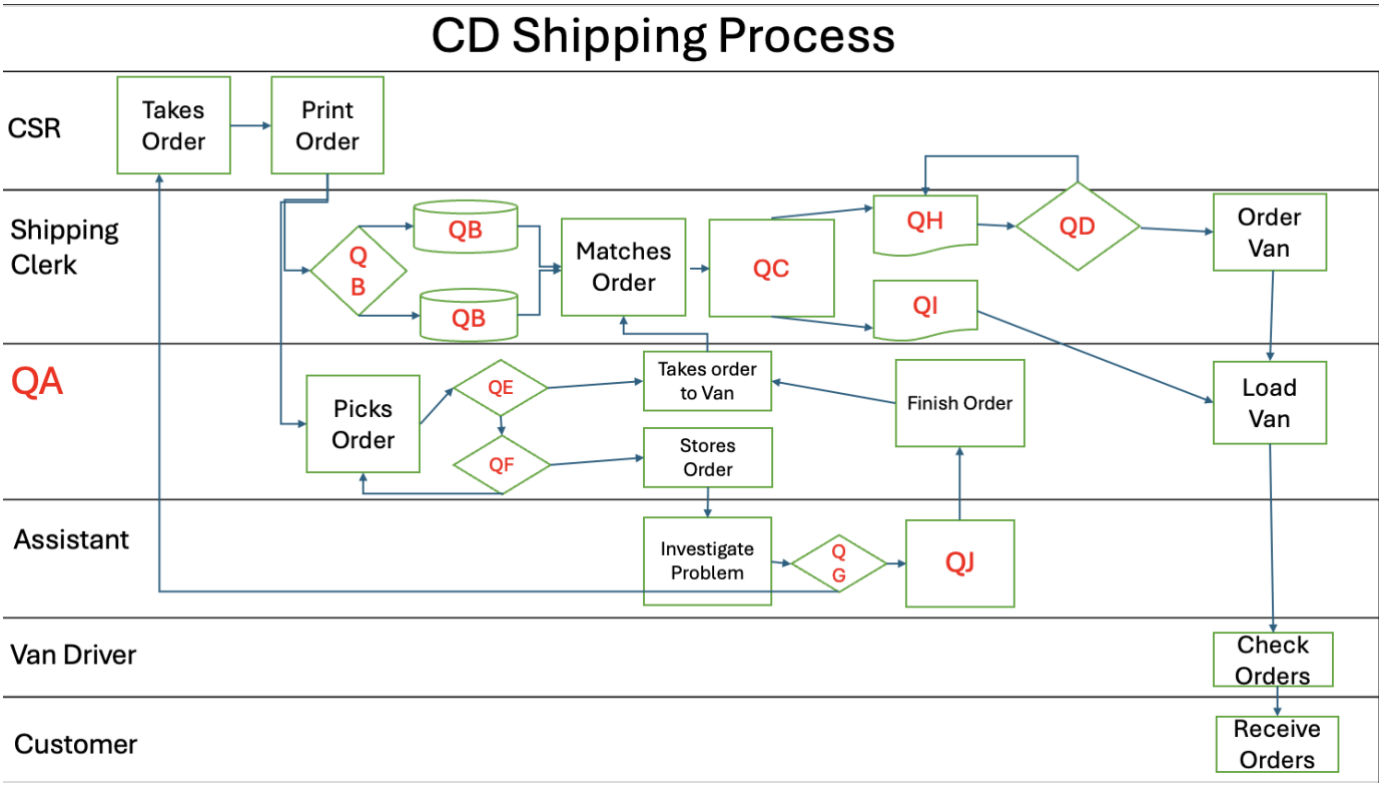
•Assuming the completed orders get to the van, the shipping clerk matches them to his copies. He then types that order onto the appropriate bill of lading for the van driver including customer name, ship-to address, number of donuts and their combined weight. When the bill of lading fills up to its maximum carrying weight, the shipping clerk orders a van in the case of out-of-town deliveries. He knows the company van makes a run each day, so he just keeps adding orders to its bill of lading for that day. When either van arrives, the shipping clerk gives the bill of lading to the driver who checks as Crispy Donuts' drivers load each order onto the vans. Once the driver is sure that all orders have been loaded, he signs the bill of lading, gives a copy back to the shipping clerk, and leaves. The shipping clerk must enter the shipment data into the system to close out the order by the time his shift is over.

•The data for this process is fairly simple. There is the order itself with customer information (particularly the ship-to address) and the item information (number, item-id etc). Since the money has already been collected, there is no need for the financial aspects of the order. The bill of lading contains the customer, the ship-to address, the number of items for that customer and their total weight. The total weight of all items is needed so as not to overload the vans. For local deliveries, the van's listed maximum capacity is 5,000 lbs but the firm knows if can carry 7,500 lbs so the clerk targets a total shipment weight somewhere in the middle. The

data the clerk collects for each shipment is the external van company (CD for local shipments), the shipment number, the date and time of departure. He then records that shipment on each of the orders listed on the bill of lading to close them out.

You are now looking at the swim lane diagram and data tables that the new Business Analyst has produced. *Read them carefully, analyze them and try to understand what matches with your understanding and what doesn't. There are some things missing, some done incorrectly and some questions that should be asked.* What are they?

Once you think you understand the process and data and where the novice business analyst has made mistakes, go on to answer the questions.



CD Shipping Entity/Attributes Draft

Customer	Shipment	QK	Order
CustNumber	ShipNumber	UniqueID	OrderNumber
CustName	CustName	CustName	CustName
Street Address	OrderNumber	CustNumber	CustNumber
City	ShipWeight	OrderNumber	OrderDate
State	Shipping-Company	#ItemsInOrder	OrderTime
Zip code	ShipDate	QL	ItemQuantity
CreditCardNo	ShipTime		ItemNumber
CreditCardExp			ItemName
			ItemWeight

CD Shipping Business Rules

Rule #	Business Rule
BR1	The assistant baker will investigate the reason why if an order is incomplete.
BR2	If the assistant baker cannot fix an order within 24 hours then he must return it to the CSR so the customer can be contacted.
BR3	Long haul delivery vans must be shipped full.
BR4	If an order in incomplete, it can not be shipped.
BR5	Order from local zip codes can be shipped within 24 hours.

1. What entity is the novice referring to with QK?

a. Bill of Lading
b. Inventory Transfer record
c. Customer billing record
d. Van identification record

2. What attribute (QL) is missing from QK, based on your answer to the previous question?
   a. VanNumber - unique identifier of each van
   b. SalesTaxExempt – Customer's sales tax status
   c. InventoryLoc - location of the needed inventory in the bakery
   d. OrderWeight – the total weight of the order

3. If your understanding is right, what entity/attribute does the shipping clerk need to make decision QB?
   a. QE/CustPref
   b. QE/InventoryLoc
   c. Customer/Zipcode
   d. Customer/Bill-to-Address

4. What key entity/attribute pair is missing from the Shipment entity?
   a. Order/Item
   b. Customer/CreditCardNo
   c. QK/UniqueID
   d. Order/CustNo

5. What is the minimum number of attributes that would work for the Shipment entity?
   a. 2
   b. 3
   c. 5
   d. You need all that the new BA has identified

6. The novice BA has combined two entities into one. What new entity does he need to add?
   a. Credit card
   b. Order item
   c. Bill of Lading
   d. Shipping Company

Match the following business rules to where they occur on the process diagram.

7. BR2 a) QB b) QG c) QD d) QE e) QF

8. BR3 a) QB b) QG c) QD d) QE e) QF

9. BR4 a) QB b) QG c) QD d) QE e) QF

10. BR5 a) QB b) QG c) QD d) QE e) QF

11. What is represented by QH?

a) The decision about what kind of delivery is appropriate.
b) The current local bill of lading
c) The current bill of lading for out-of-town deliveries
d) The last order that completed bill of lading

12. Which business rule BEST follows the rules about how to write business rules?

a) BR1
b) BR2
c) BR3
d) BR4
e) BR5