



Adobe Experience Platform

Bootcamp Deep Dive Edition

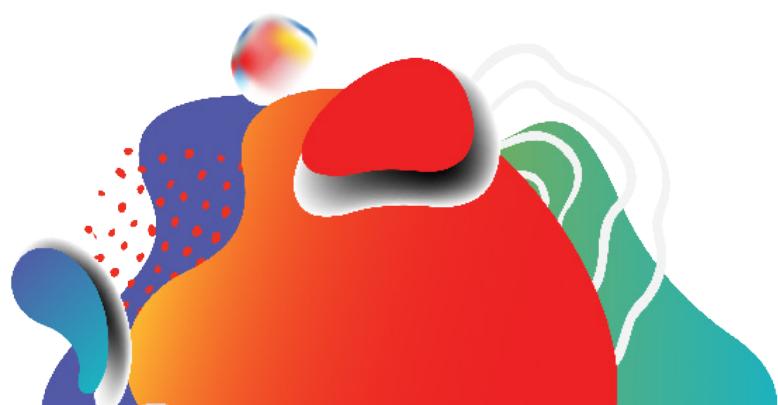
DOCUMENTATION AND LABS





SID METHODOLOGY LAB

Adobe Experience Platform Bootcamp Deep Dive Edition



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Lab Overview

Learn how to transform your relational data model into a NoSQL architecture that the Adobe Experience Platform's Real-Time Customer Profile can leverage. Follow the SID methodology steps of sort, identify, and de-normalization.

1. SORT

Learning Objectives

Be able to quickly sort entities into their appropriate XDM class for the Real-Time Customer Profile's primary entity and supporting entities:

- Primary Entity – Individual Profile (traits) and Experience Event (behaviors)
- Supporting Entities - lookup schemas

Lab Tasks

Sort the Connection 5G warehouse and streaming payload ERD schemas into the following buckets:

- XDM Individual Profile
- XDM Experience Event
- XDM Lookup

Label Individual Profile, Experience Event and Lookup Schemas

Label the entities from the customer data warehouse ERD and the customer streaming payload ERD with the appropriate XDM Class label for Individual Profile, Experience Event, and Lookup

Step 1

Identify all the source entities which represent a person or an individual in both the customer data warehouse ERD and the customer streaming ERD. Mark those with a "P" signifying it is part of the XDM Individual Profile class.

Note: Only mark the entities which uniquely represent the person

Step 2

Identify all the source entities which represent the behavior of a person or an individual in both the customer data warehouse ERD and the customer streaming ERD. Mark those as "E" signifying it is part of the XDM Experience Event class.

Note: Only mark the entities which uniquely represent a person's behavior.

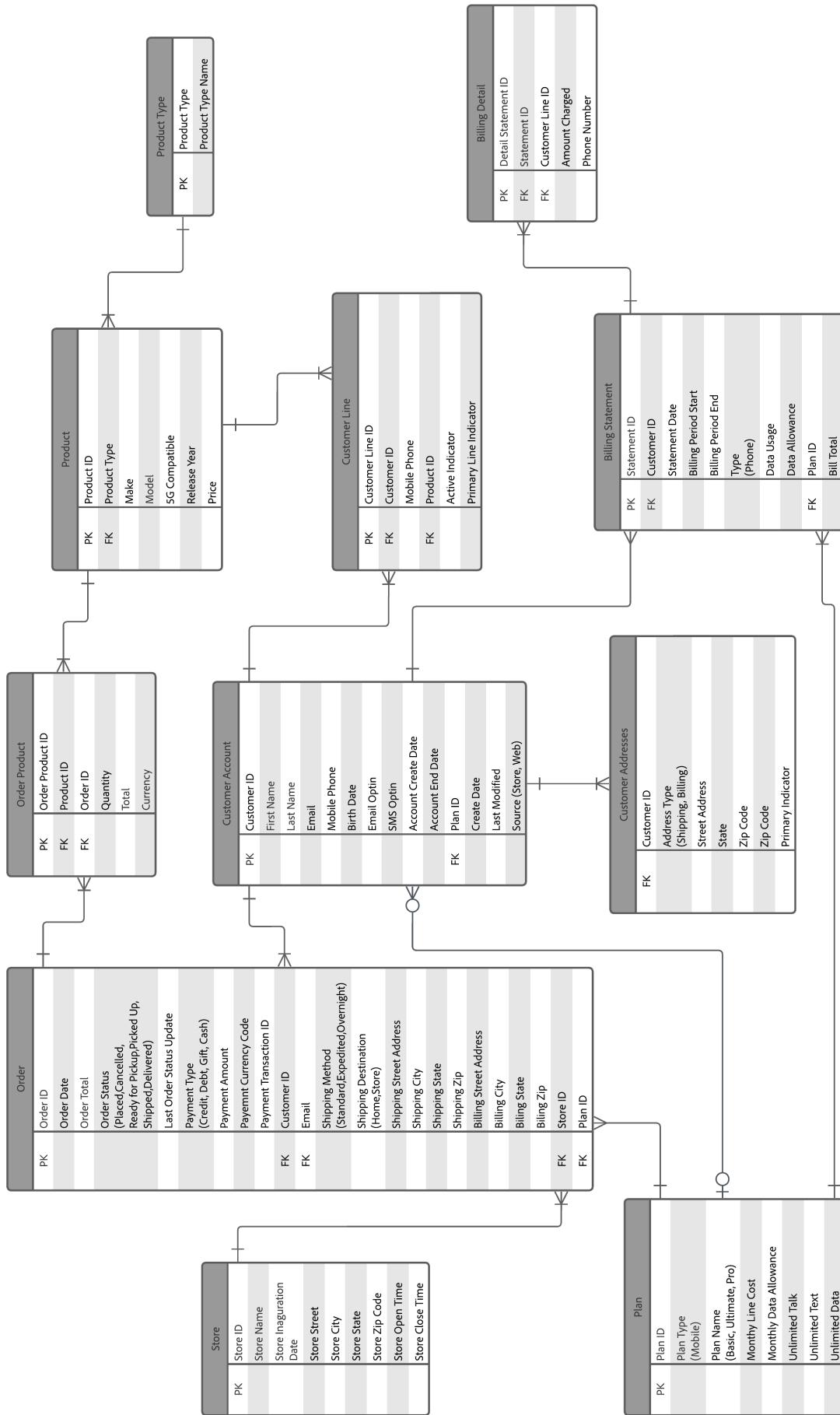
Step 3

Identify all the source entities which represent lookup data and directly related to either the "P" or "E" entities you have marked in both the customer data warehouse ERD and the customer streaming ERD. Mark those as "L" signifying it is part of a customer defined XDM class.

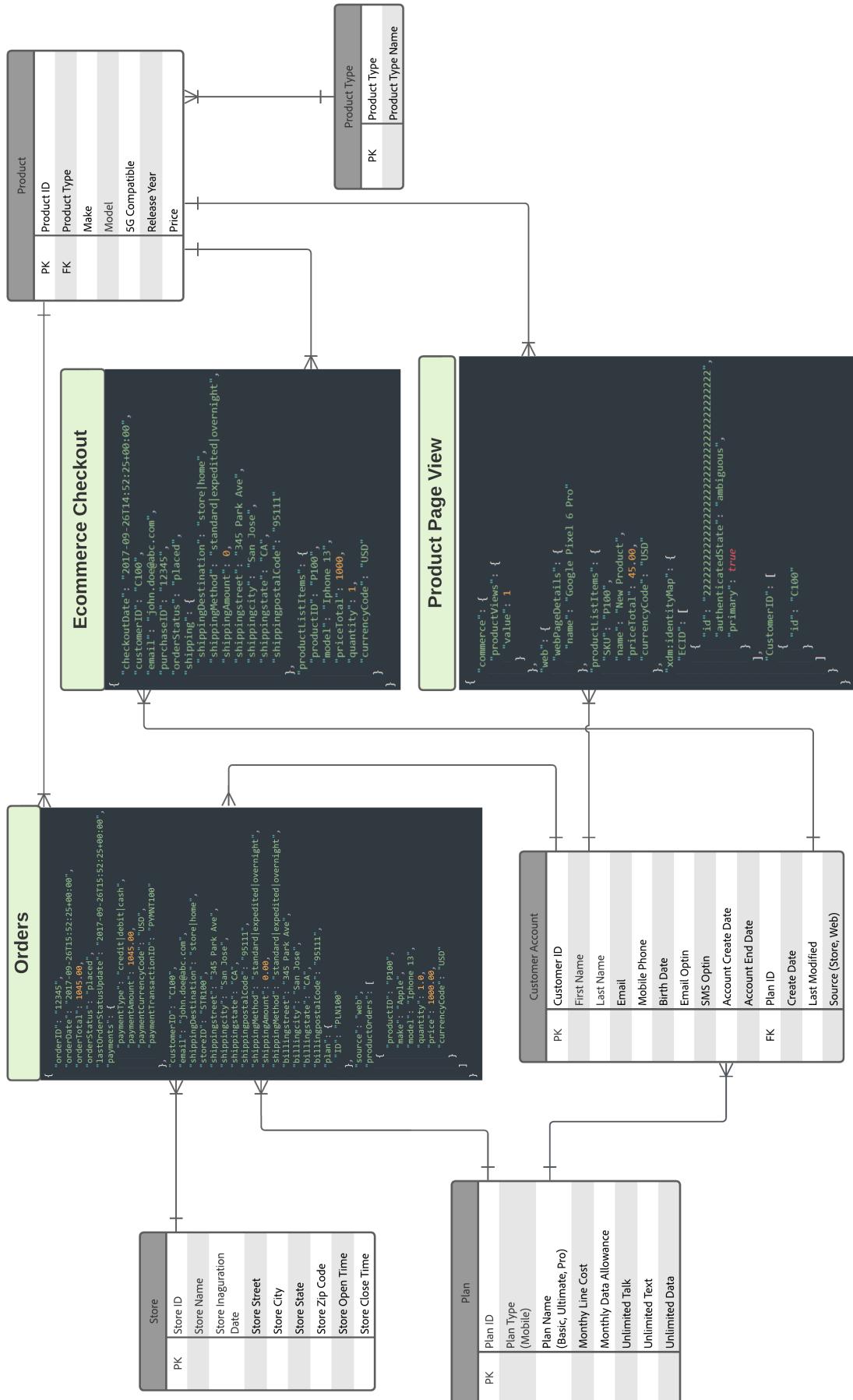
Note: Lookup tables can only be 1 join level away from either a "P" or "E" labeled schema

| | |
|------|--|
| Hint | <ul style="list-style-type: none">• Individual Profile (traits) – uniquely describes the traits of a person (i.e. name, email, address, preferences, etc.)• Experience Event (behaviors) – describe interactions and touchpoints a person has with a brand/company (i.e. web page visit, purchase, call to call center, application submit, etc.)• Lookup – provide additional information about the Individual Profile or Experience Event |
|------|--|

LAB: Connection 5G Data Warehouse ERD



LAB: Customer Streaming Payload ERD



2. IDENTIFY PART 1

PART 1: IDENTIFY SCHEMAS FOR DE-NORMALIZATION

Learning Objectives

- Be able to identify bridge schemas (Many to Many)
- Be able to identify schemas that will require de-normalization

Lab Tasks

Identify and label the schemas in the Connection 5G warehouse and streaming payload ERDs

- Bridge schema (labeled as "B")
 - New lookup schemas that exist due to bridge tables
- Schemas that will require de-normalization (labeled as "D")

Label Bridge Schemas and Schemas for De-Normalization

| | |
|---------|--|
| Warning | Order is very important here! Make sure you are following the steps in order as each step is dependent on the previous |
|---------|--|

Step 1: Start with XDM Individual Profile Labeled Schemas

1. Identify all schemas directly related to (one hop away from) the individual Profile labeled schemas that do not yet have a label. Mark them with a star.
2. Looking at only the schema's you just labeled with a star perform the following tasks:

- **Add a label "B" for bridge schemas** – a schema is considered a bridge schema when two or more schemas are related to it with the many side of the relationship pointing to the bridge schema

| | |
|-----|---|
| Tip | Remember, when encountering a bridge schema directly related to either a "P" or "E" schema the non-labeled M:1 side from the bridge schema acts like a lookup |
|-----|---|

- Add a label "D" for schemas to de-normalize – any entity that has a 1:M or M:1 cardinality with the Individual Profile labeled schema of 1:M and is not already marked

Step 2: Start with XDM Experience Event Labeled Schemas

1. Identify all schemas directly related to (one hop away from) the Experience Event labeled schemas that do not yet have a label. Mark them with a star.

2. Looking at only the schema's you just labeled with a star perform the following tasks:

- **Add a label "B" for bridge schemas** – a schema is considered a bridge schema when two or more schemas are related to it with the many side of the relationship pointing to the bridge schema

Tip

Remember, when encountering a bridge schema directly related to either a "P" or "E" schema the non-labeled M:1 side from the bridge schema acts like a lookup

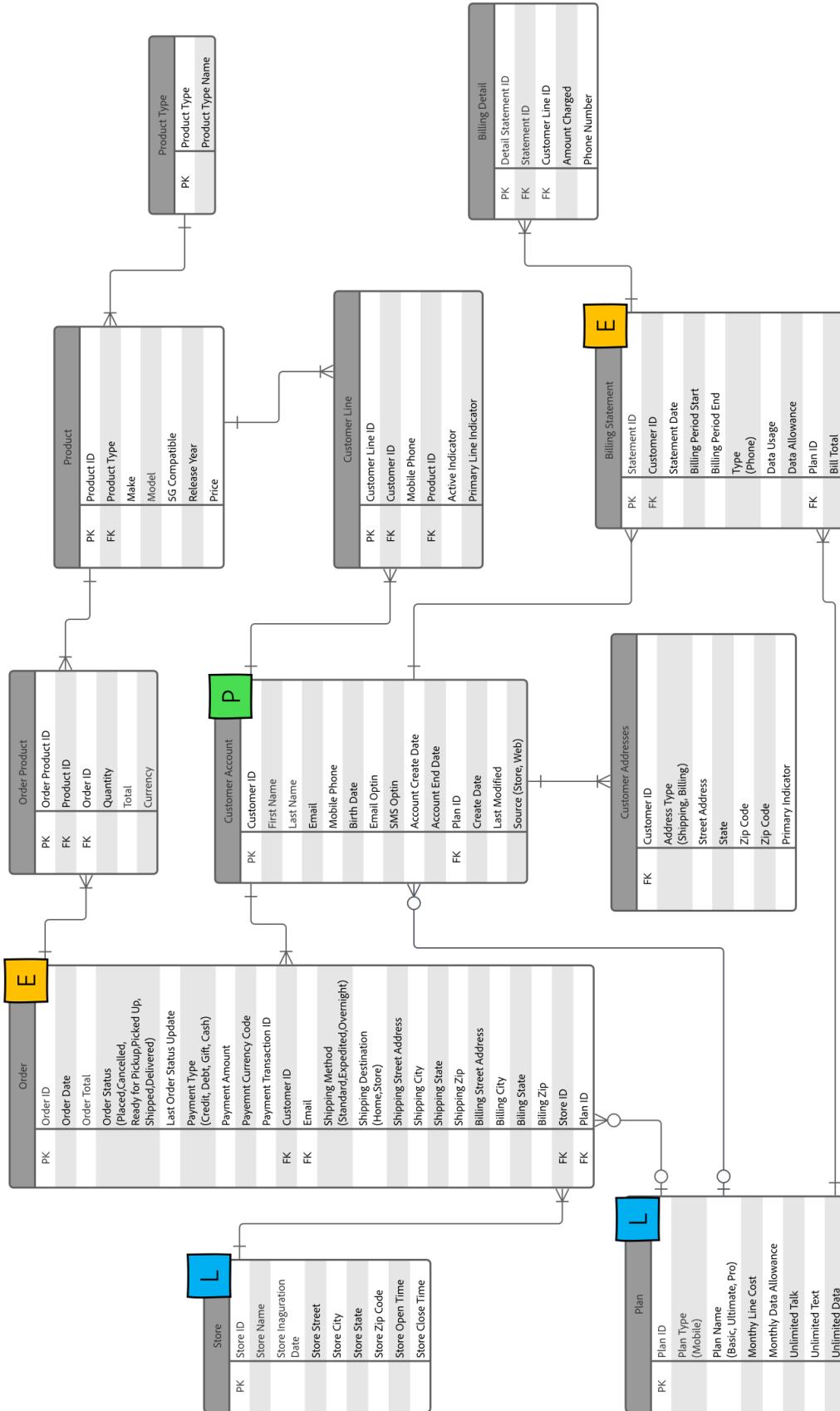
- **Add a label "D" for schemas to de-normalize** – any entity that has a 1:M or M:1 cardinality with the Experience Event labeled schema of 1:M and is not already marked

Step 3: Start with Lookup Labeled Schemas

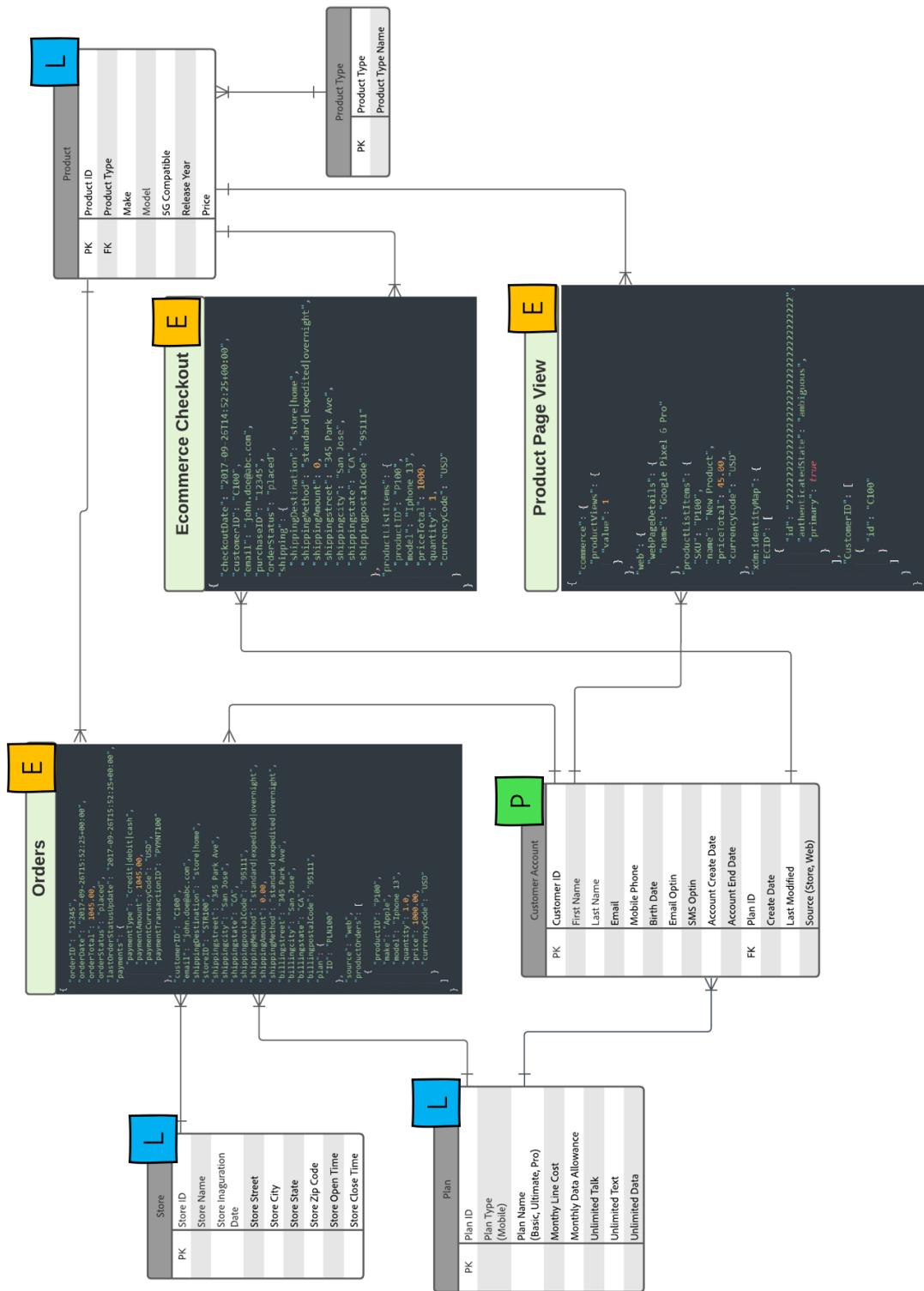
1. Identify all schemas related to (does not matter how many hops you make) any of the Lookup labeled schemas that do not yet have a label. Mark them with a star.
2. Looking at only the schema's you just labeled with a star perform the following tasks:

- Add a label "B" for bridge schemas – a schema is considered a bridge schema when two or more schemas are related to it with the many side of the relationship pointing to the bridge schema
- Add a label "D" for schemas to de-normalize – any entity that has a 1:M or M:1 cardinality with a Lookup schema or bridge schema related to a lookup

Connection 5G - Warehouse - SORT Output



Connection 5G - Streaming Payloads - SORT - Output Payload ERD



2. IDENTIFY PART 2

PART 2: IDENTIFY IDENTITIES, RELATIONSHIPS & REQUIRED FIELDS

Learning Objectives

Be able to identify the following:

- Primary identities of a schema that are used for storage within the Real-Time Customer Profile
- Person-based identities within the primary entity classes that can be used to uniquely identify a person
- Relationship identifiers between Individual Profile / Experience Event schemas and associated Lookup schemas
- Required fields needed for the Experience Event schema's

Lab Tasks

Identify the following from the Connection 5G warehouse and streaming ERDs

- Individual Profile primary identities, person identities and relationship identities
- Experience Event primary identities, person identities, relationship identities and required fields
- Lookup primary identities

For each schema from the Connection 5G warehouse and streaming payload ERD, that you have labeled as either a "P", "E" or "L", you will now perform the steps below to identify the primary identities, person identities, relationship identities and any required fields for the given schema classes.

Refer to the Customer Scenario.pdf when doing this lab as it contains relevant information related to the lab

Lecture Recap

Identity Recap:

- **Primary identity** – Used as a storage key and required for any schema being used by the Real-Time Customer Profile. For Primary Entity schema's the identity also uniquely identifies a person
- **Person identity** – Used in conjunction with a Primary Identity to create relationships in the identity graph to uniquely identify a person. They are only used in Primary Entity schema's
- **Relationship identity (i.e. non-person)** – Used to describe relationships from the Primary Entity schemas of the Real-Time Customer Profile to an associated supporting entity class (i.e. Lookups). These are not used for creating a unified view of a profile and do not participate in the identity graph

Required Fields (Experience Event Labeled Schemas Only):

- **_id** - used by the Real-Time Customer Profile in conjunction with the Primary Identity to create a unique storage key for the event. Required as events are considered immutable (i.e. distinctly unique)
- **Timestamp** – all events happen at a given time and therefore every event requires a timestamp
Not required by highly encouraged:
- **Event Type** – describes the high-level behavior of the event data (i.e. purchase, reservation booked, etc.)

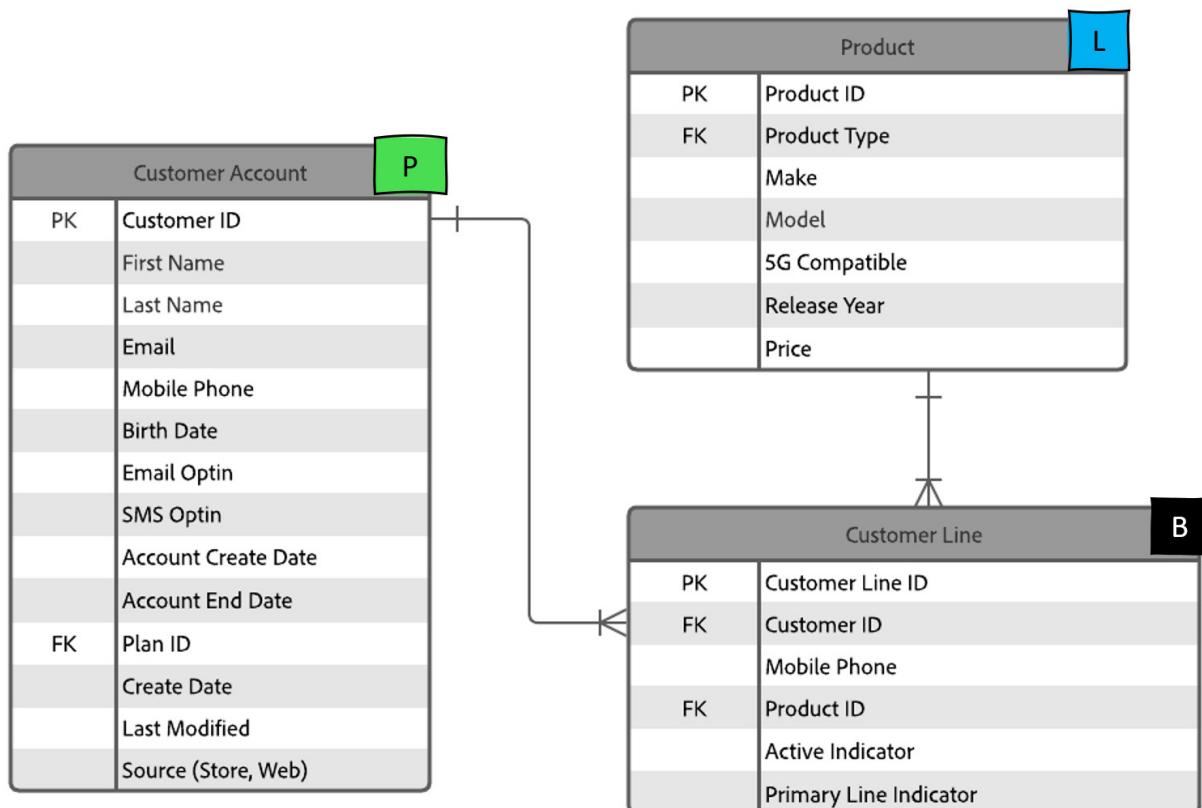
General Rules to Remember:

1. Where a bridge table exists between a Primary Entity ("P" or "E") and a Lookup Entity ("L") treat the bridge table as part of the Primary Entity
2. Always validate identities are unique (i.e. immutable) to a person at this stage to avoid re-work during data ingestion
3. For Experience Event schemas, the Primary Identity is what uniquely identifies that behavior to a single person.
4. For lookup tables, the primary key (PK) from the relational model will always be the Primary Identity

LABEL IDENTITIES, RELATIONSHIPS AND REQUIRED FIELDS

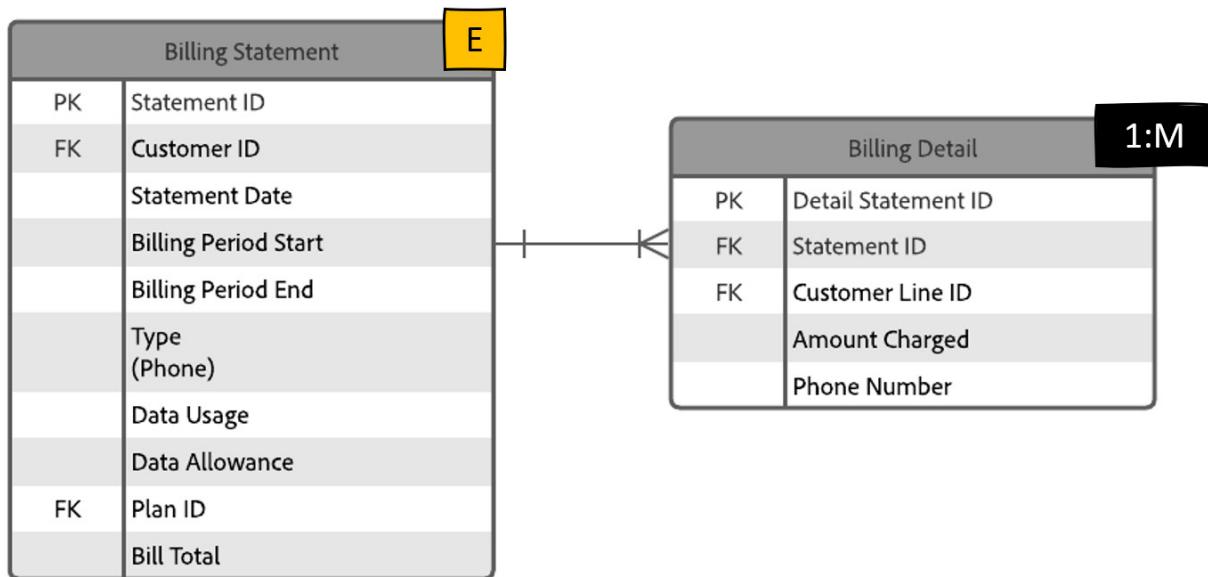
Step 1 – Label the Individual Profile schema with the following:

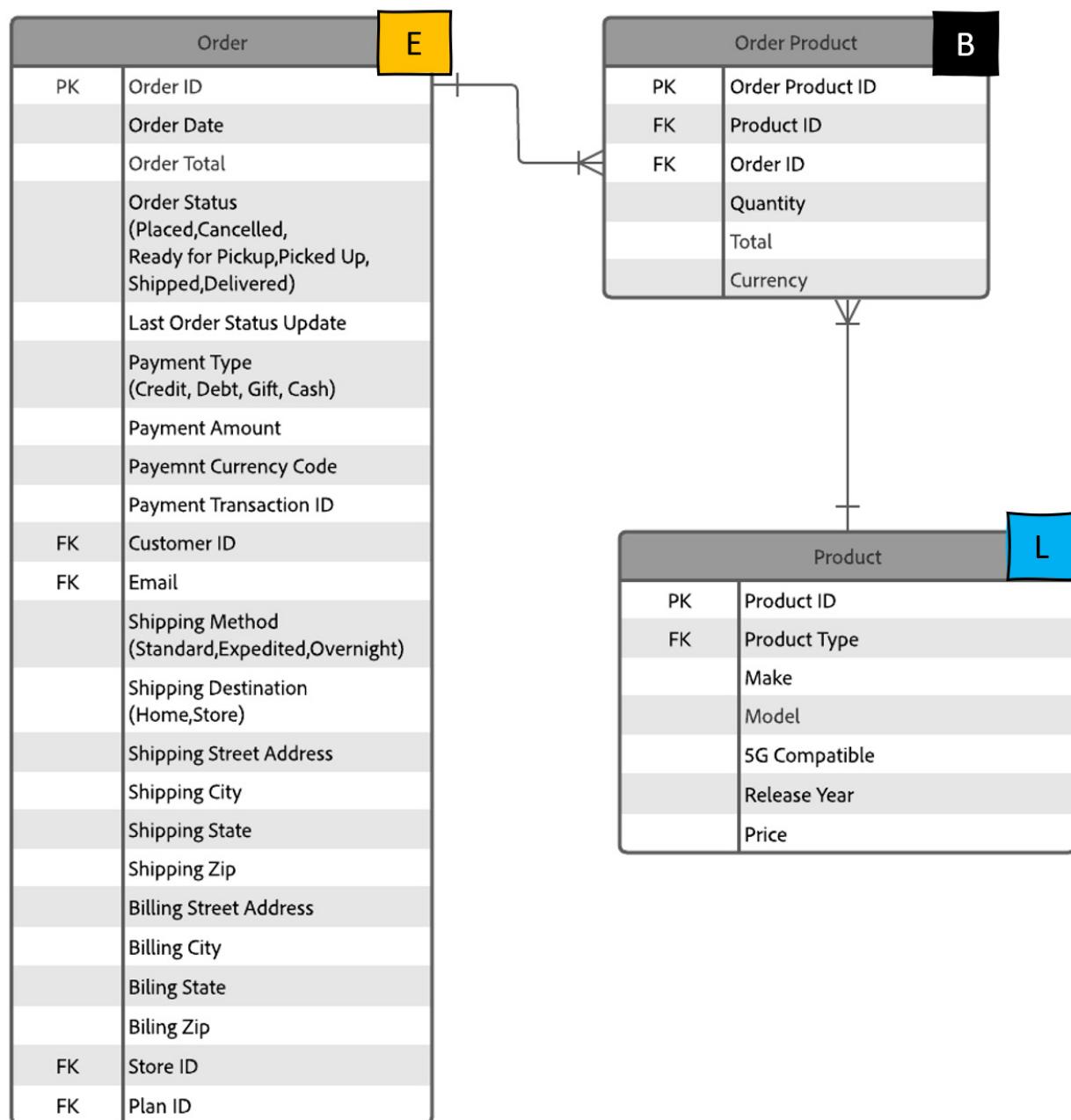
- Primary Identity (PI)
- Other Person Identities (I)
- Relationship Identities (R)



Step 2 – Label the Experience Event schemas with the following:

- Primary Identity (PI)
- Other Person Identities (I)
- Relationship Identities (R)
- _id and Timestamp (_id & T)
- Event Type (ET)





| Orders Payload | |
|--|--|
| <pre>{ "orderID": "12345", "orderDate": "2017-09-26T15:52:25+00:00", "orderTotal": 1045.00, "orderStatus": "placed", "lastOrderStatusUpdate": "2017-09-26T15:52:25+00:00", "payments": { "paymentType": "credit debit cash", "paymentAmount": 1045.00, "paymentCurrencyCode": "USD", "paymentTransactionID": "PYMNT100" }, "customerID": "C100", "email": "john.doe@abc.com", "shippingDestination": "store home", "storeID": "STR100", "shippingstreet": "345 Park Ave", "shippingcity": "San Jose", "shippingstate": "CA", "shippingpostalCode": "95111", "shippingMethod": "standard expedited overnight", "shippingAmount": 0.00, "shippingMethod": "standard expedited overnight", "billingstreet": "345 Park Ave", "billingcity": "San Jose", "billingstate": "CA", "billingpostalCode": "95111", "plan": { "ID": "PLN100" }, "source": "web", "productOrders": [{ "productID": "P100", "make": "Apple", "model": "Iphone 13", "quantity": 1.0, "price": 1000.00, "currencyCode": "USD" }] }</pre> | |

| Ecommerce Checkout Payload | |
|-----------------------------------|---|
| | <pre>{ "checkoutDate": "2017-09-26T14:52:25+00:00", "customerID": "C100", "email": "john.doe@abc.com", "purchaseID": "12345", "orderStatus": "placed", "shipping": { "shippingMethod": "standard expedited overnight", "shippingAmount": 0, "shippingstreet": "345 Park Ave", "shippingcity": "San Jose", "shippingstate": "CA", "shippingpostalCode": "95111" }, "productListItems": { "productID": "P100", "model": "Iphone 13", "priceTotal": 1000, "quantity": 1, "currencyCode": "USD" } }</pre> |

Step 3 – Label the Lookup schemas with the following:

- Primary Identity (PI)

| Plan | | L |
|------|-------------------------------------|---|
| PK | Plan ID | |
| | Plan Type (Mobile) | |
| | Plan Name (Basic, Ultimate, Pro) | |
| | Monthly Line Cost | |
| | Monthly Data Allowance | |
| | Unlimited Talk | |
| | Unlimited Text | |
| | Unlimited Data | |

| Store | | L |
|-------|------------------------|---|
| PK | Store ID | |
| | Store Name | |
| | Store Inaguration Date | |
| | Store Address | |
| | Store City | |
| | Store State | |
| | Store Zip Code | |
| | Store Open time | |
| | Store Close Time | |

| Product | | L |
|---------|-----------------|---|
| PK | Product ID | |
| FK | Product Type ID | |
| | Make | |
| | Model | |
| | 5G Compatible | |
| | Release Year | |
| | Price | |

3. DE-NORMALIZE

Learning Objectives

- Learn how to resolve bridge schemas and the data within them when de-normalizing them back into parent schemas
- Understand how to deal with 1:M and M:1 relationships when working with identified schemas for de-normalization
- Be able to identify marketing actionable data in de-normalization as well as in provided customer use cases

Lab Tasks

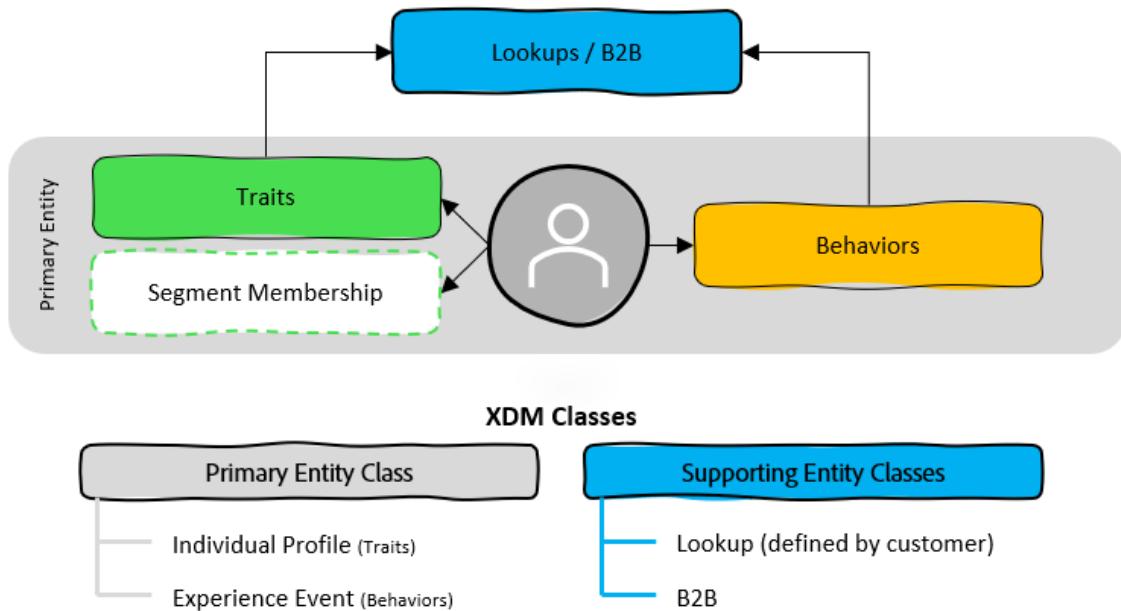
Perform the following tasks:

- De-normalize all the entities marked as "B" and "D" from the previous lab into their respective parent entity of either Individual Profile, Experience Event or Lookup.
- De-normalize all fields required Connection 5G proposed use cases for both streaming segmentation and personalization

De-normalize the Connection 5G Warehouse Schemas

Remember the Real-Time Customer Profile is only composed of the below XDM classes. Therefore, any schema you have identified in the Connection 5G relational model that is not one of these entity types below must be de-normalized back into its parent entity.

Real-Time Customer Profile Composition



** Note for this lab we will only focus on the Connection 5G warehouse ERD schemas **

Rules to remember:

- * **Rule# 1:** Any schema in the relational model that is labeled as a "D" with a 1:M cardinality or labeled as "B" will act as an object array on the parent entity
- * **Rule #2:** Before de-normalizing "D" or "B" schemas that act as arrays, interrogate them to determine how best to de-normalize them back into their parent entity
- * **Rule #3:** Any schema in the relational model that is labeled as "D" with a cardinality of M:1 will act as either an object or a list of fields on its parent entity

Always remember to review the customer use cases when building out the data model. Below are a few of the Connection 5G use cases from the Customer Scenario.pdf.



JOURNEY OPTIMIZER

Orchestrate the curb-side / in-store pickup communication process starting from when an order is placed to when an order has been picked up



REAL-TIME CDP (ACQUISITION)

Activate all profiles who have visited an iPhone 13/Pixel 6 product page and no order exists for that device or that device is not currently an active line on the customer's account



REAL-TIME CDP (UPSELL)

Find all profiles who have a total billing data usage in the last 6 months > 140 GB, have a rolling 6-month average monthly data usage >= 20 GB and are not on the ultimate phone plan

Remember

- Streaming segmentation does not have access to lookup schemas at evaluation time
- Only the traits and segment memberships of a profile are accessible for personalizing content*

*Event triggered Journey Optimizer journeys have access to the event payload and any associated lookup schemas related to the event itself

Step 1 – Fill in the Individual Profile Schema

1. Write in the fields that need to be de-normalized back on the Customer Account schema from any related "B" or "D" schemas
 2. Reviewing the use cases above what additional fields are required to support streaming segmentation and/or personalization? Add those fields to the schema

Step 2 – Fill in the Experience Event Schemas

1. Write in the fields that need to be de-normalized back into the Billing and Order's schema from any related "B" or "D" schemas
2. Reviewing the use cases above what additional fields are required to support streaming segmentation and/or personalization? Add those fields to the schema

| Billing | |
|---------|----------------------|
| _id | Statement ID |
| T | Statement Date |
| ET | "billing.statement" |
| PI | Customer ID |
| | Billing Period Start |
| | Billing Period End |
| | Type (Phone) |
| | Data Usage |
| | Data Allowance |
| R | Plan ID |
| | Bill Total |
| | |
| | |
| | |
| | |

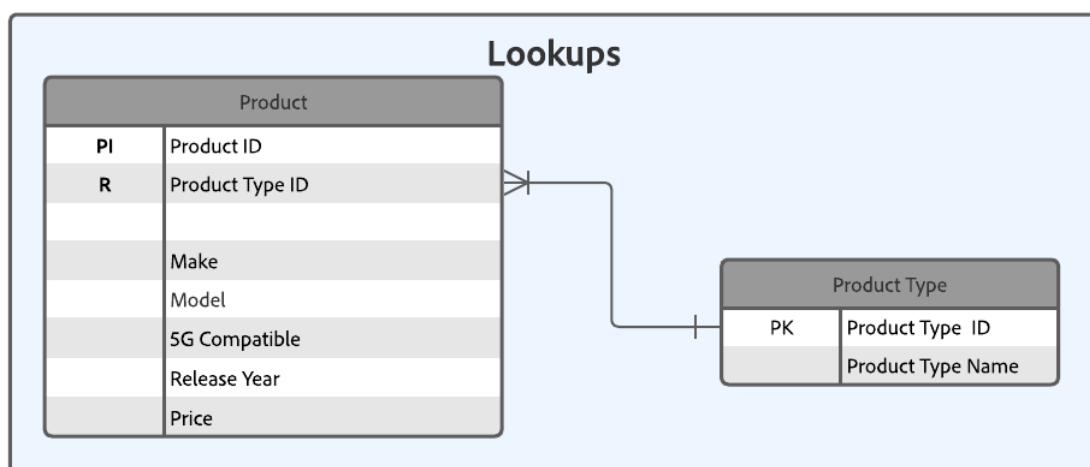
| Orders | |
|------------|--|
| _id | Order ID + Last Order Status Update |
| T | Last Order Status Update |
| ET | Order Status (Open,Complete, Cancelled,Ready for Pickup, Picked Up,Shipped) |
| | Order ID |
| | Order Date |
| | Order Total |
| I | Customer ID |
| PI | Email |
| | Payment Type (Credit, Debit, Gift, Cash) |
| | Payment Amount |
| | Payment Currency Code |
| | Payment Transaction ID |
| | Shipping Destination (Home, Store) |
| | Shipping Method |
| | Shipping Amount |
| | Shipping Address |
| | Shipping City |
| | Shipping State |
| | Shipping Zip Code |
| | Billing Address |
| | Billing City |
| | Billing State |
| | Billing Zip |
| R | Store ID |
| R | Plan ID |
| | Acq Source (Store, Web) |
| | |
| | |
| | |
| | |
| | |

Step 3 – Fill in the Lookup Schemas

1. Write in the fields that need to be de-normalized back into the Lookup schema from any related "B" or "D" schemas
2. Reviewing the use cases above what additional fields are required to support streaming segmentation and/or personalization? Add those fields to the schema

Lookups

| Plan | | Store | |
|------|----------------------------------|-------|------------------------|
| PI | Plan ID | PI | Store ID |
| | Plan Type (Mobile) | | Store Name |
| | Plan Name (Basic, Ultimate, Pro) | | Store Inaguration Date |
| | Monthly Line Cost | | Store Address |
| | Monthly Data Allowance | | Store City |
| | Unlimited Talk | | Store State |
| | Unlimited Text | | Store Zip Code |
| | Unlimited Data | | Store Open time |
| | | | Store Close Time |



FINAL EXPERIENCE PLATFORM ERD ANSWER KEY

FINAL EXPERIENCE PLATFORM ERD ANSWER KEY

