Car Sales – Attribute Details

Inventory			
Primary Key	INVENTORYID	*Varchar*	*Auto populated, Not Null*
	VIN	*Varchar*	*Not Null*
	YEAR	*Date*	
	MODEL	*Varchar*	
	TRIM	*Varchar*	
	DRIVE	*Varchar*	
	COLOR	*Varchar*	
	NO OF DOORS	*Integer*	
	ENGINE	*Varchar*	
	MSRP	*Integer*	*Not Null*

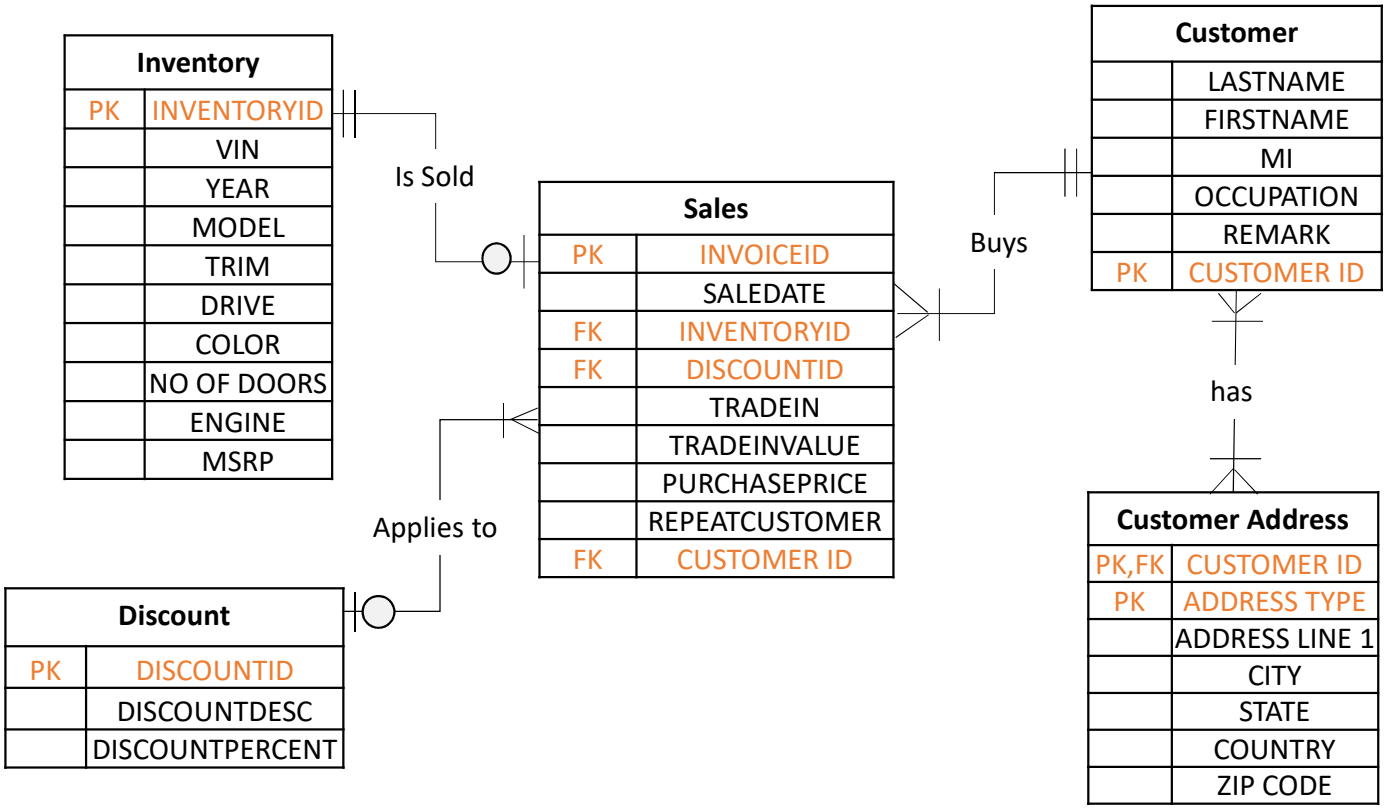
Sales			
Primary Key	INVOICEID	*Varchar*	*Auto Populated, Not Null*
	SALEDATE	*Date*	*Not Null*
Foreign Key	INVENTORYID	*Varchar*	*Not Null*
Foreign Key	DISCOUNTID	*Integer*	*Not Null*
	TRADEIN	*Boolean*	
	TRADEINVALUE	*Integer*	*Not Null if TradeIn = True*
	PURCHASEPRICE	*Integer*	
	REPEATCUSTOMER	*Boolean*	
Foreign Key	CUSTOMER ID	*Varchar*	*Not Null*

Customer Relation			
	LASTNAME	*Varchar*	*Not Null*
	FIRSTNAME	*Varchar*	*Not Null*
	MI	*Varchar*	
	OCCUPATION	*Varchar*	
	REMARK	*Varchar*	
Primary Key	CUSTOMER ID	*Varchar*	*Auto Populated, Not Null*

Customer Address			
Primary Key Foreign Key	CUSTOMER ID	*Varchar*	*Not Null*
Primary Key	ADDRESS TYPE	*Varchar*	*Not Null*
	ADDRESS LINE 1	*Varchar*	
	CITY	*Varchar*	
	STATE	*Varchar*	
	COUNTRY	*Varchar*	
	ZIPCODE	*Varchar*	*Not Null*

Discount			
Primary Key	DISCOUNTID	*Varchar*	*Not Null*
	DISCOUNTDESC	*Varchar*	
	DISCOUNTPERCENT	*Integer*	*Not Null*

Car Sales – ER Diagram



Relationships:

Sales – Inventory

One car can be sold zero or one time only

One sales can sell only one car

Sales – Discount

One discount can apply to multiple sales

One sales can have zero or one discount

Sales – Customer

One sales can have only one customer

One customer can buy multiple cars

Customer – Customer Address

One customer can have multiple address

One address can belong to many customer only

PK – Primary Key

FK – Foreign Key

Preowned Database – Attribute Details

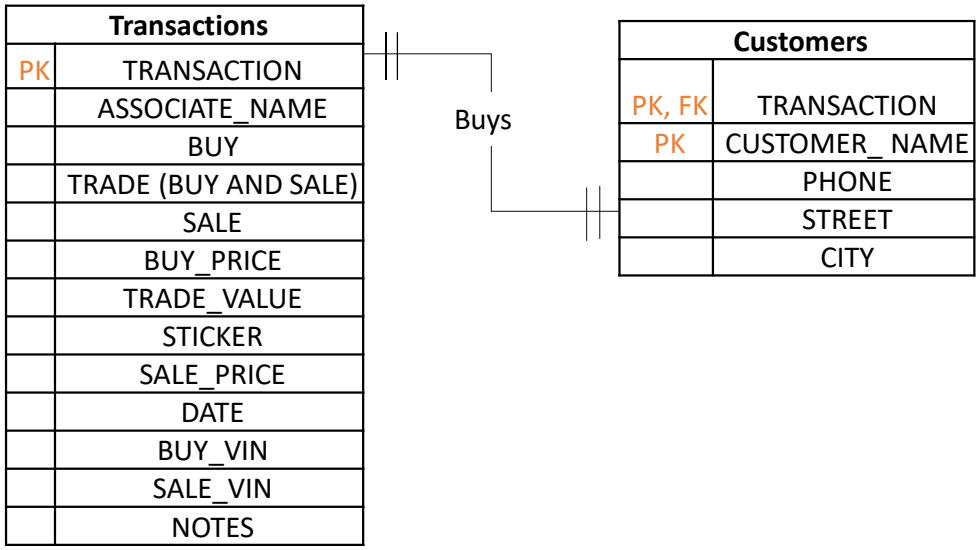
Transactions			
Primary Key	TRANSACTION	*Varchar*	*Not Null*
	ASSOCIATE_NAME	*Varchar*	
	BUY	*Varchar*	
	TRADE (BUY AND SALE)	*Varchar*	
	SALE	*Varchar*	
	BUY_PRICE	*Integer*	*Not null if Transaction type is Buy*
	TRADE_VALUE	*Integer*	*Not null if Transaction type is Trade*
	STICKER	*Integer*	*Not null if Transaction type is Sale, Trade*
	SALE_PRICE	*Integer*	
	DATE	*Varchar*	
	BUY_VIN	*Varchar*	*Not null if Transaction type is Buy, Trade*
	SALE_VIN	*Varchar*	*Not null if Transaction type is Sale, Trade*
	NOTES	*Varchar*	

Customers			
Primary Key Foreign Key	TRANSACTION	*Varchar*	*Not Null*
Primary Key	CUSTOMER_ NAME	*Varchar*	*Not Null*
	PHONE	*Varchar*	
	STREET	*Varchar*	
	CITY	*Varchar*	

Observations:

- Transactions is used as the key between Transactions and customer. If a customer buys more than one car, then there might be multiple rows for the same customer
- There is no separate inventory table.

Preowned Database – ER Diagram



Relationships:

Transactions – Customer

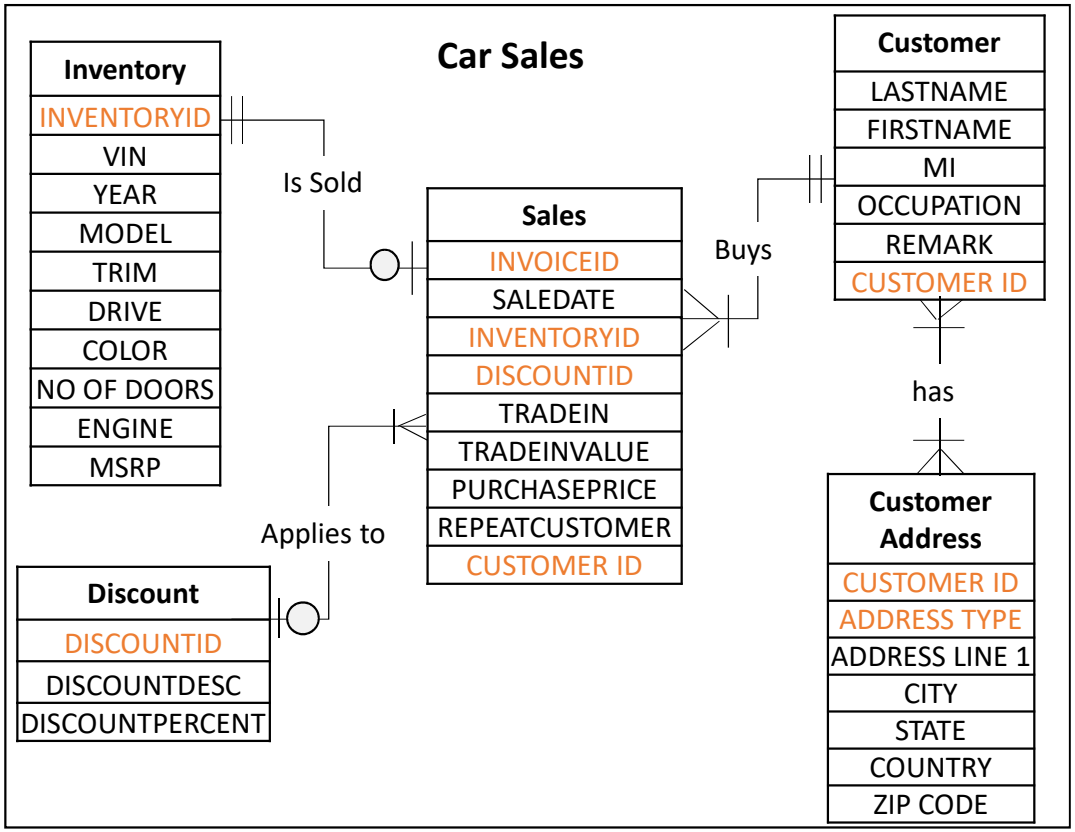
One transaction can have only one customer

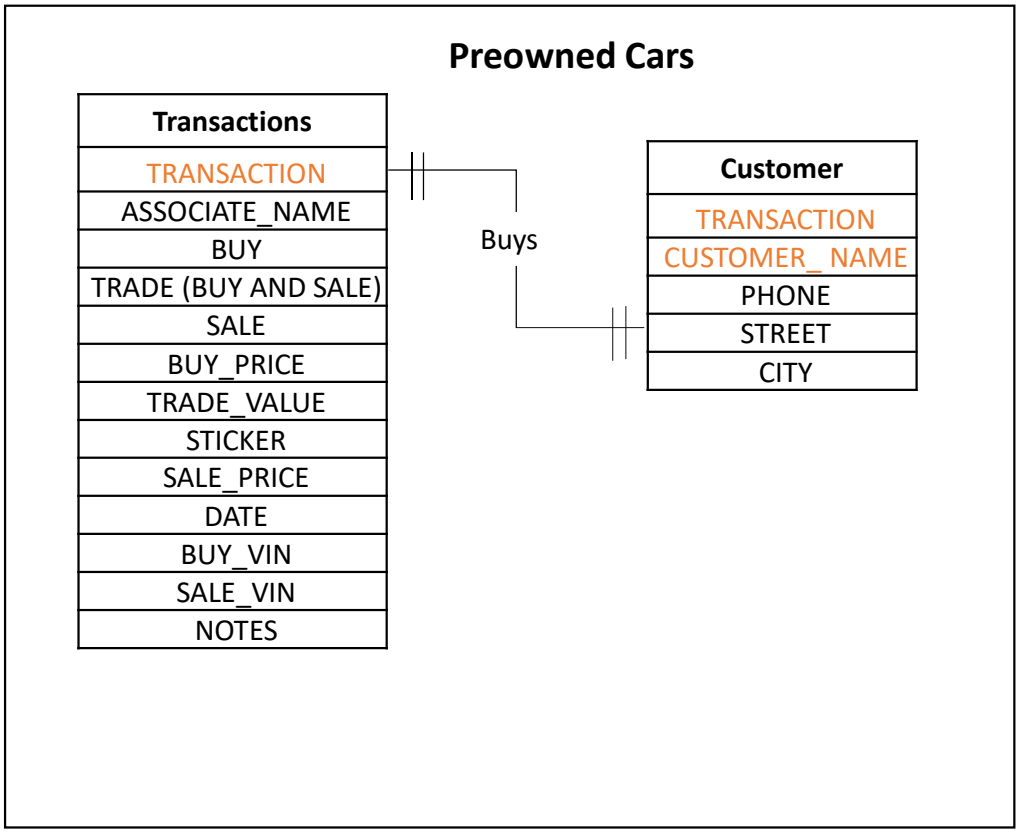
One customer /Transaction can be for one car only

PK – Primary Key

FK – Foreign Key

Data Integration : Analysis

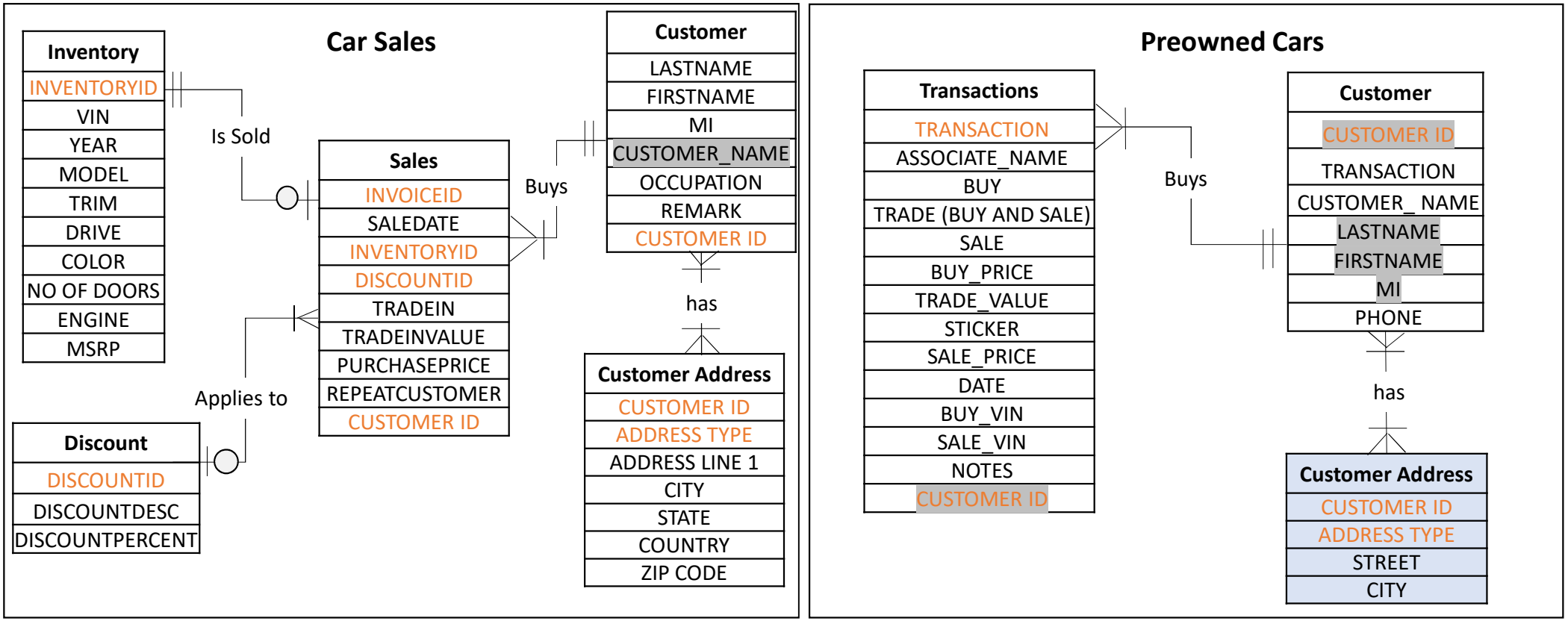




- Sales table looks like a subset of the Transactions table
- Car details VIN and MSRP for Car Sales are stored in inventory table while they are stored in Transactions for pre owned cars
- Discount details are typed as notes in Transactions for preowned, while they are stored in separate table in Car Sales
- Customer details are stored separately with Customer_ID as the key between the tables in Car Sales. Preowned has transaction/Customers as the key
- Customer address is stored separately in Car sales to allow multiple address storage

Data Integration : Customer Table Updates

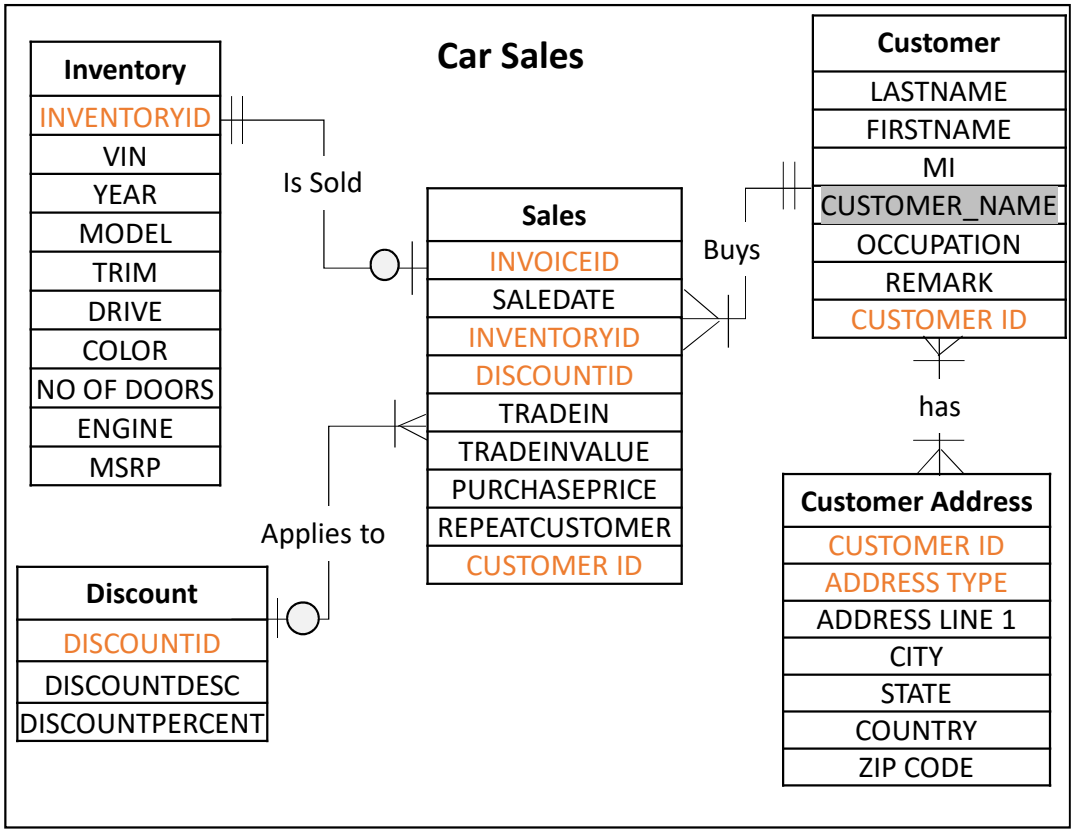
New Columns New Table

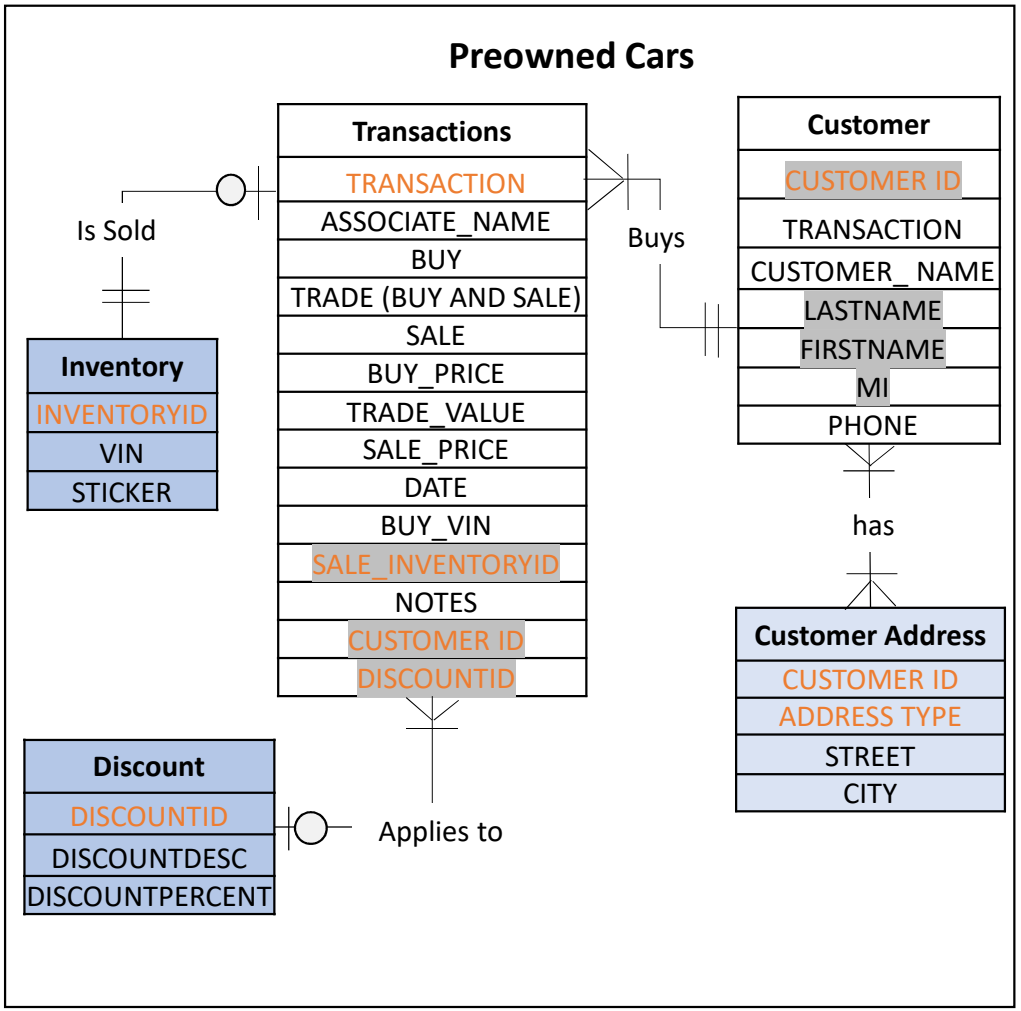


- Add new columns to split customer name into First Name, Last Name and MI columns in Preowned Customer table. Add Customer_NAME Column in Car Sales Customer table that combines LASTNAME, FIRSTNAME and MI
- Add a new column Customer ID that uniquely identifies each customer. For existing data this can be combination of transaction and Customer Name column. This way no data will be lost. This also changes the Customer to transaction relation as 1 to many.
- Separate the Customer address into a separate table
- Create the Customer ID column in the Transactions table

Data Integration : Transaction Table Updates

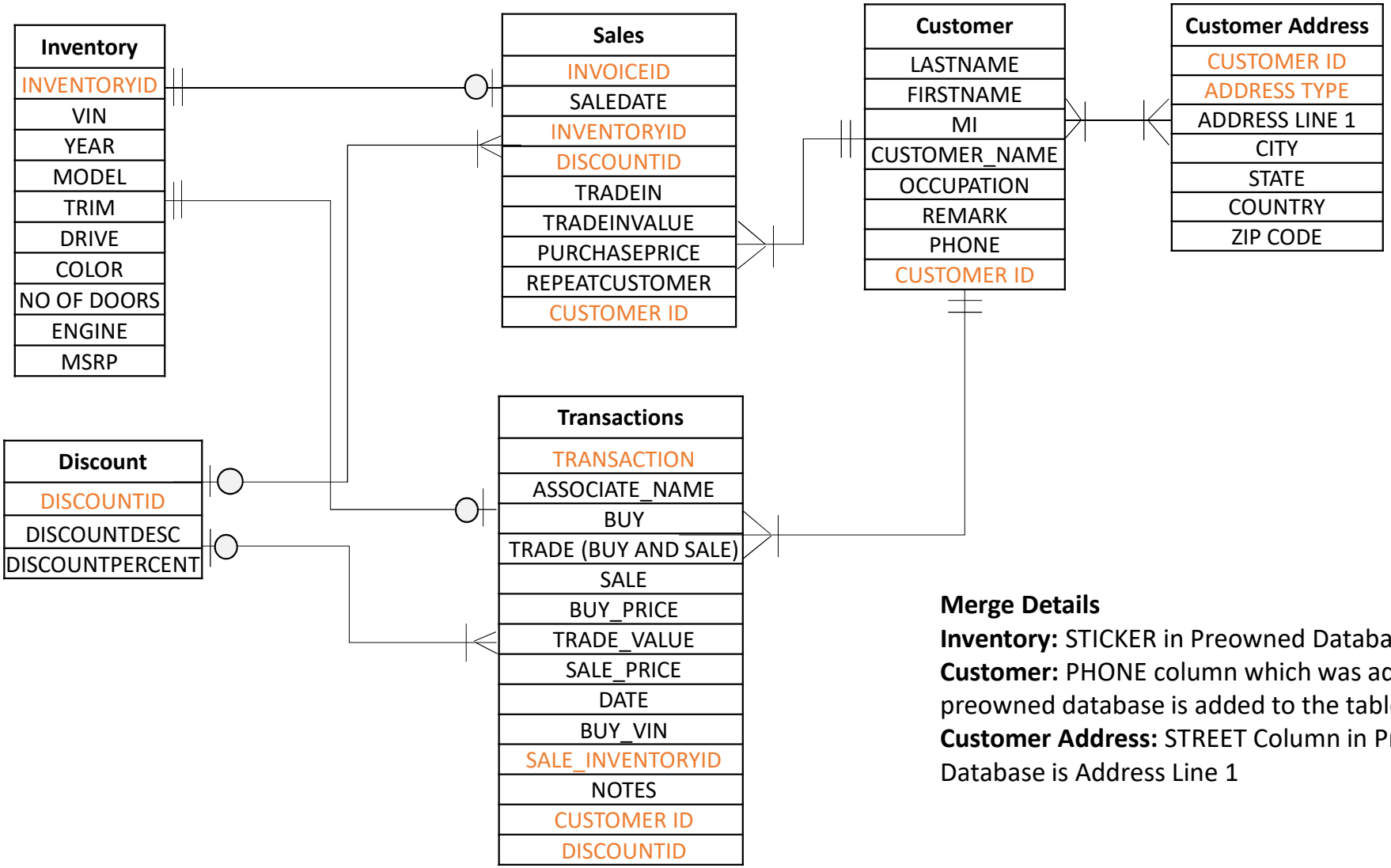
New Columns New Table





- Create two new tables to for inventory and Discount
- Create SALE_INVENTORYID that corresponds to the Sold car VIN from the inventory table
- Create Discount_ID in the Transaction table that corresponds to the discount applied based on the “Notes” column

Data Integration : Merge Schemas



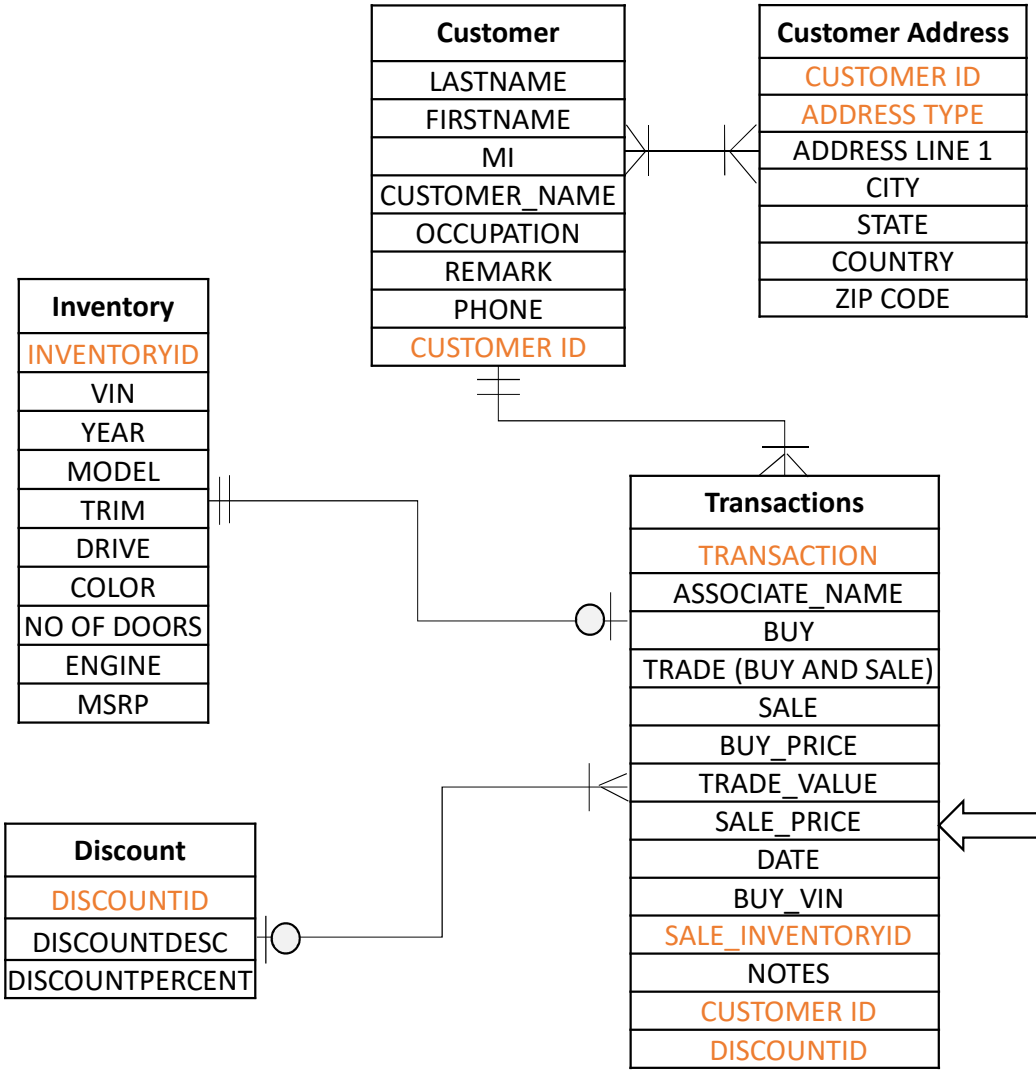
Merge Details

Inventory: STICKER in Preowned Database is called MSRP

Customer: PHONE column which was additional in the preowned database is added to the table

Customer Address: STREET Column in Preowned Database is Address Line 1

Data Integration : Remove Unwanted Relations and Create Subset



Sales:

INVOICEID is TRANSACTION
SALEDATE is DATE
INVENTORYID is SALE_INVENTORYID
TRADEIN is TRADE_VALUE
PURCHASEPRICE is SALE_PRICE