

Ken Garff

Remote Start

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AGENDA

- Ken Garff Remote Start Overview
- Priority Requirements
- Conceptual & Relational Models
- Physical Database/SQL Process
- Game Time!!!



OVERVIEW

- The Utah-based company started in 1932
- 65 dealerships across eight states, including
 - UT, CA, NV, AZ, WY, CO, IA, TX
- Donated ~ 20 million dollars to the
- Remote Start (online sales)



Priority Requirements

- Customer
- Inventory
 - New Car
 - Used Car
- Trade-In
- Payment
 - Cash
 - Lease
 - Finance
- Car Offer Quote

1
2
3

Select Your Vehicle

- View our inventory to find the vehicle you are interested in

[USED >>](#)

Calculate Payment

- Calculate your lease or financing payments
- Value your trade-in >> (if applicable)
- Apply for financing >>
- Select vehicle protection options

Get Your Vehicle

We'll contact you to:

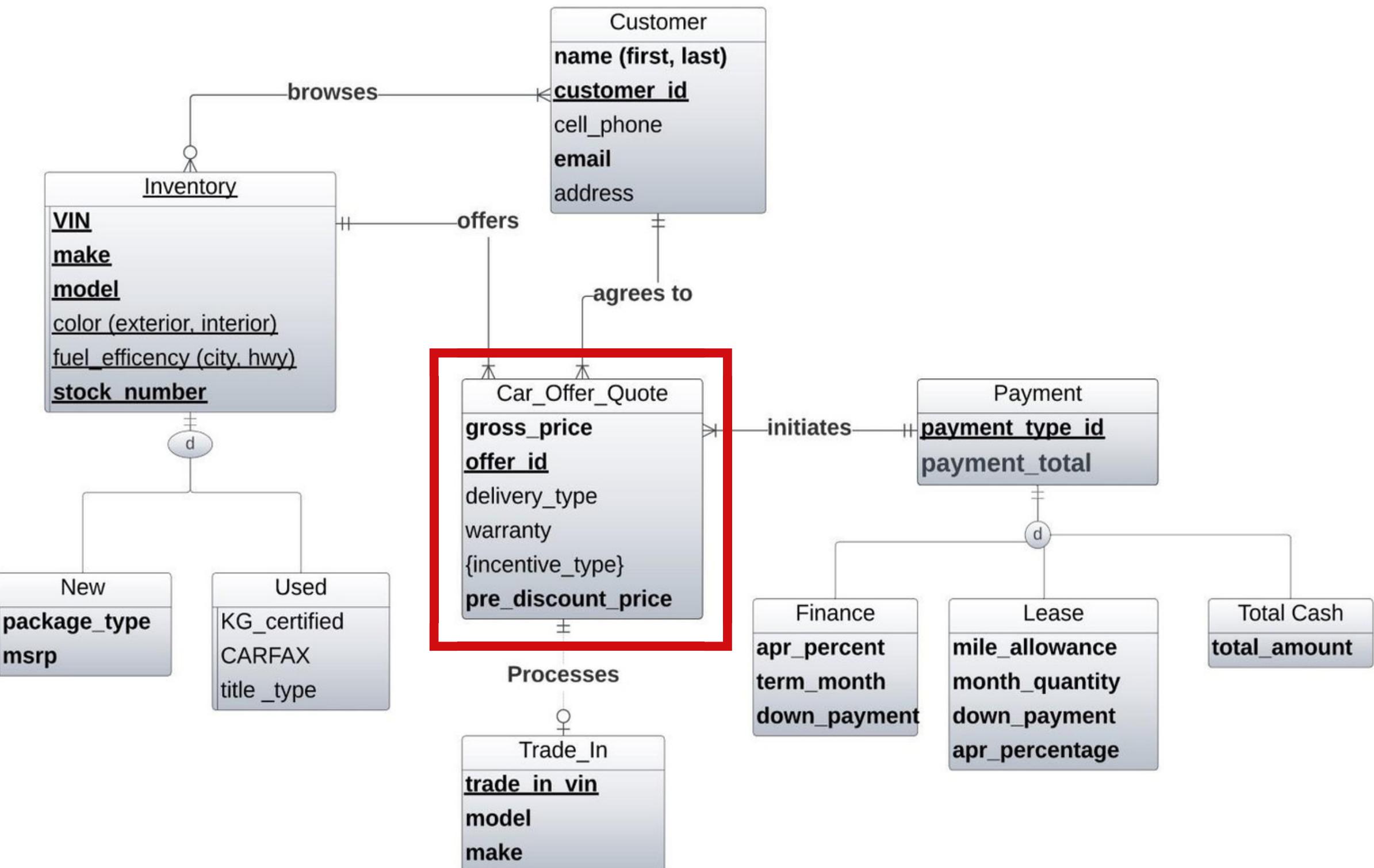
- Finalize initial terms of your dealer, ensure you have the best rebates and finance offers, provide you with vehicle, and confirm details of your trade if applicable
- Sign the paperwork (online, shipped to you, or signed in person)

Conceptual & Relational Models



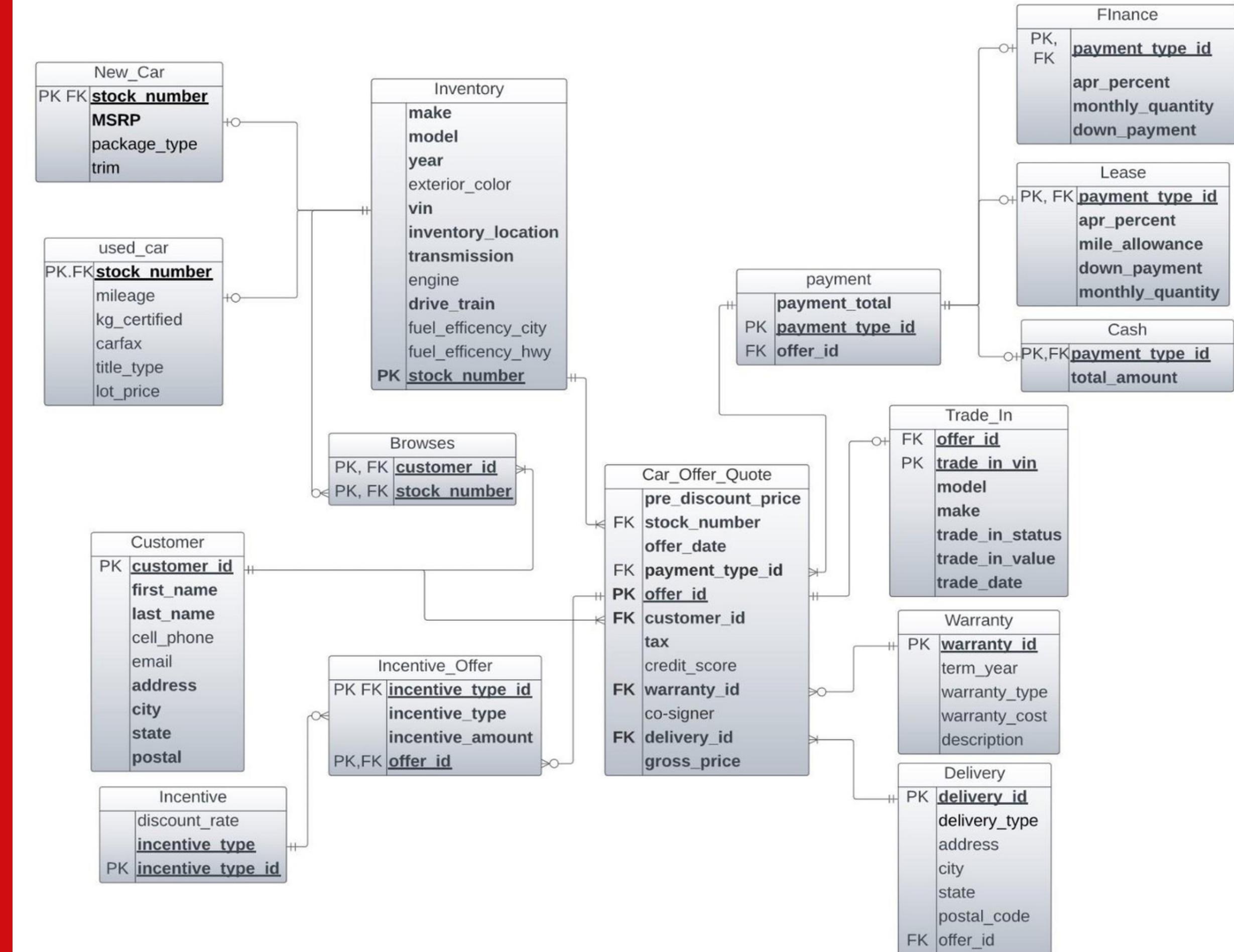
Conceptual Model

- The center of our model is the **Car Offer Quote** table.
- A Car Offer Quote is concocted by:
 - Customer Browsing Inventory
 - Customer choosing a Payment method
 - Customer inserting an optional Trade In



Relational Model

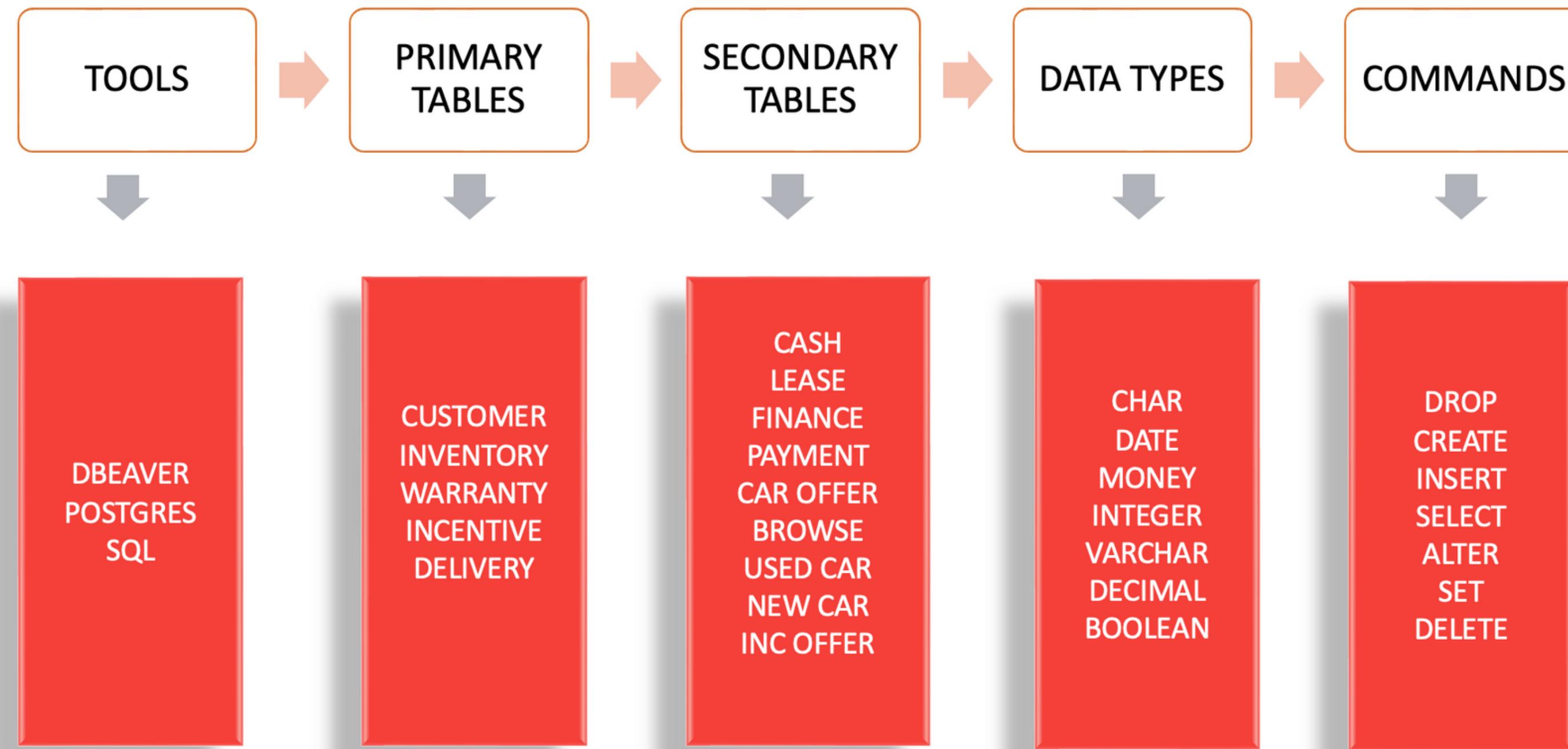
- 3rd Normal Form and 9 Logical principles applied:
 - Strengthening weak relationships
 - M:M break up
 - Remapping supertypes/subtypes
 - multivalue removal
 - composite attribute split
 - transitive functional dependency removal
- Ensures minimal redundancies and allows modification without anomalies



Physical Model



Physical Model



QUERIES: Out of Door Price

```
--compute out_of_door_price:  
  
select o.offer_id,  
concat(make, ' ',model) as vehicle, msrp_or_lot_price as manufacturer_cost, warranty_cost, tax,gross_price,  
sum(discount_rate)*100 as total_discount_perc,  
(gross_price - gross_price*sum(i.discount_rate)) as out_of_door_price  
from payment p  
join car_offer_quote o on o.offer_id= p.offer_id  
join warranty w on o.warranty_id = w.warranty_id  
join incentive_offer io on io.offer_id = o.offer_id  
join incentive i on i.incentive_id = io.incentive_id  
join inventory i2 on i2.stock_number = o.stock_number  
left join used_car cu on cu.stock_number = o.stock_number  
left join new_car nc on nc.stock_number = o.stock_number  
group by o.offer_id, payment_total,warranty_cost, msrp_or_lot_price,make,model;
```

car_offer_quote(+) 1 ×

Enter a SQL expression to filter results (use Ctrl+Space)

	offer_id	vehicle	manufacturer_cost	warranty_cost	tax	gross_price	total_discount_perc	out_of_door_price
1	1	Subaru Forester	\$2,900.00	\$0.00	5	\$3,045.00	5	\$2,892.75
2	2	Porsche Taycan	\$97,552.00	\$3,000.00	6.5	\$107,087.88	15	\$91,024.70
3	3	Audi S5 Sportback	\$38,687.00	\$3,500.00	4.75	\$44,190.88	10	\$39,771.79
4	4	Ford F-150 Raptor	\$63,550.00	\$4,000.00	5.25	\$71,096.37	5	\$67,541.55
5	5	Ford Super Duty F-350	\$39,950.00	\$2,000.00	6.75	\$44,781.62	5	\$42,542.54
6	6	Subaru Legacy Wagon Outback	\$3,000.00	\$3,700.00	5.5	\$7,068.50	5	\$6,715.08
7	7	Audi RS 3	\$51,990.00	\$2,500.00	4.25	\$56,805.82	10	\$51,125.24
8	8	Honda CR-V EX-L	\$4,500.00	\$0.00	7	\$4,815.00	5	\$4,574.25
9	DMMW:io	\$20,001.00	\$2,000.00	1.5	\$107,521.51	5	\$102,154.06	

Refresh Save Cancel Export data 200 26 26 row(s) fetched - 7ms (1ms fetch), on 2023-03-27 at 14:45:11

MST en Writable Smart Insert 1311 : 1 : 129190 Sel: 0 | 0



QUERIES: Max, Min, & AVG

```
-- MOST EXP:  
select concat(make, ' ',model) as vehicle, gross_price from inventory i join car_offer_quote coq  
on coq.stock_number = i.stock_number  
where msrp_or_lot_price is not null  
order by gross_price desc  
limit 1;
```

car_offer_quote 1	
ABC	vehicle
123	gross_price
1	BMW i8 \$107,531.54

```
-- AVG EXP:  
with avg_query as (select * from (  
select rank() over(order by gross_price), concat(make, ' ',model) as vehicle, gross_price from inventory i join car_offer_quote coq  
on coq.stock_number = i.stock_number) avg_exp)  
  
select vehicle, gross_price from avg_query  
where rank in (select round(max(rank)/2) from avg_query);
```

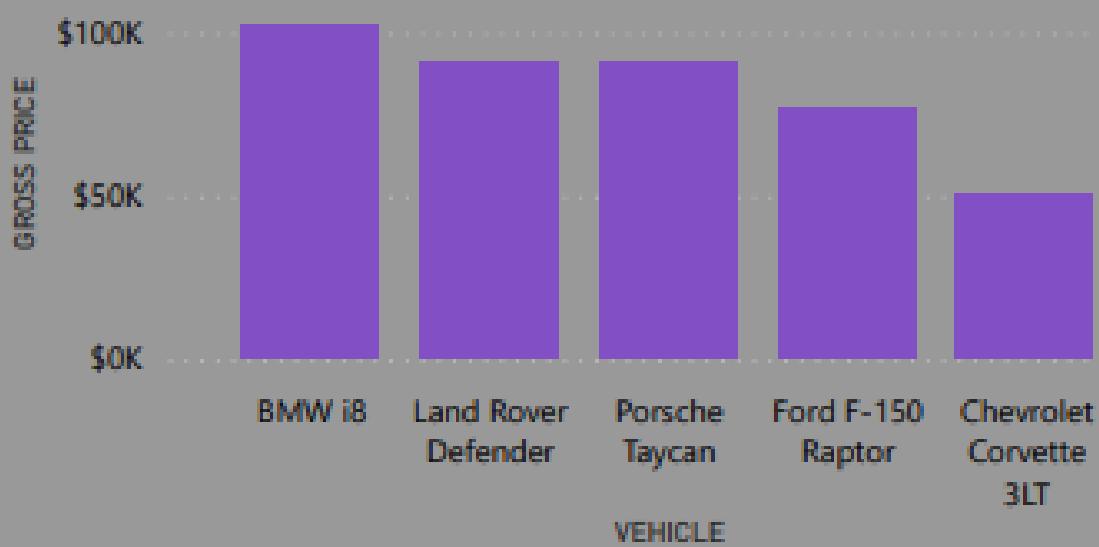
car_offer_quote 1	
ABC	vehicle
123	gross_price
1	Audi S5 Sportback \$44,190.88

```
-- LEAST EXP:  
select concat(make, ' ',model) as vehicle, gross_price from inventory i join car_offer_quote coq  
on coq.stock_number = i.stock_number  
order by gross_price  
limit 1;
```

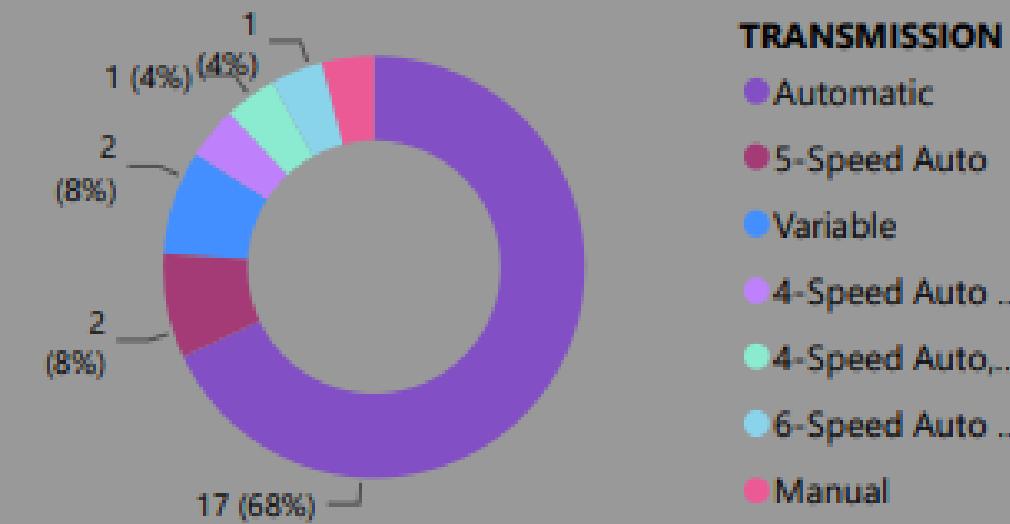
car_offer_quote 1	
ABC	vehicle
123	gross_price
1	Subaru Forester \$3,045.00



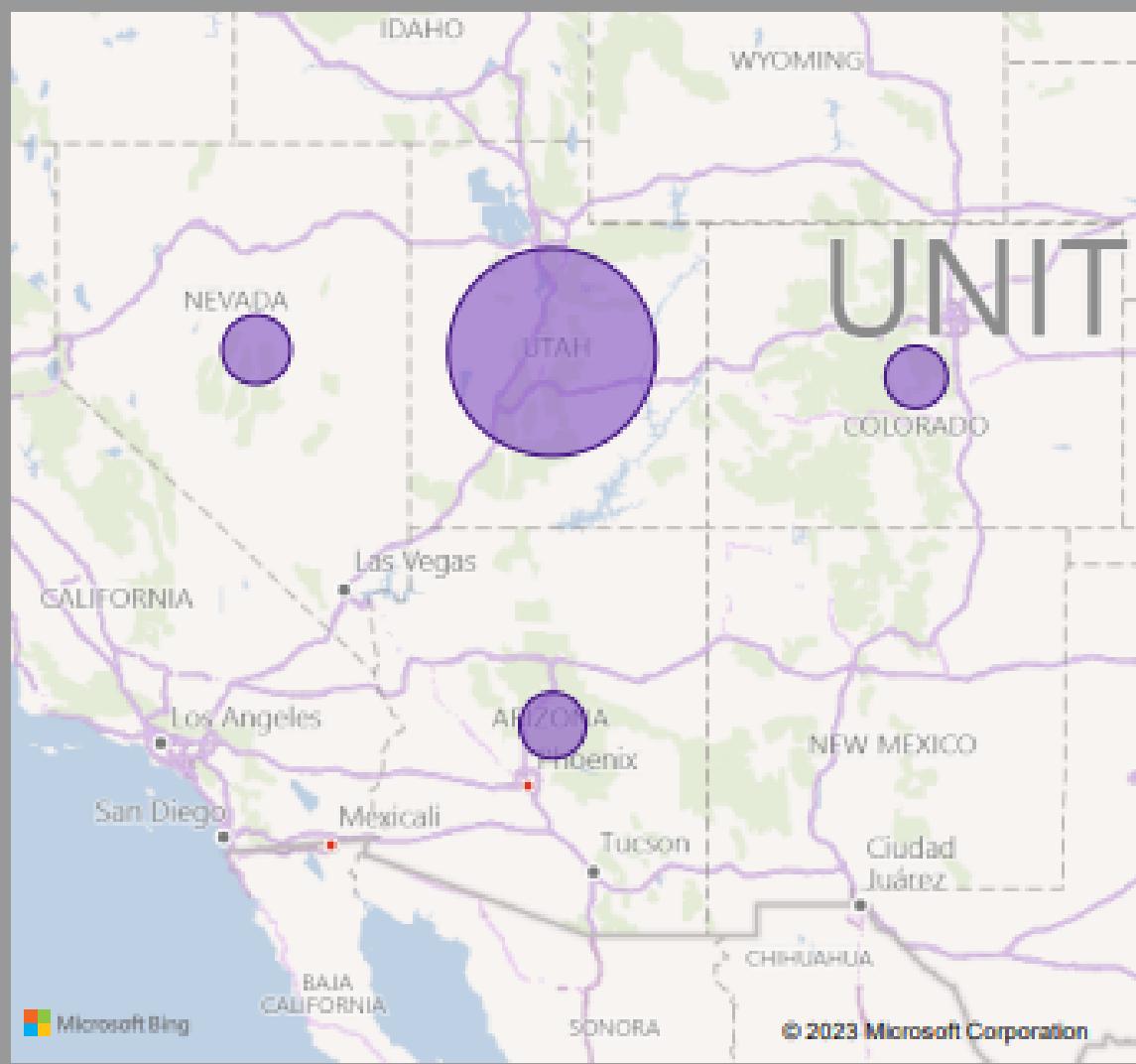
REVENUE BY VEHICLE (TOP 5)



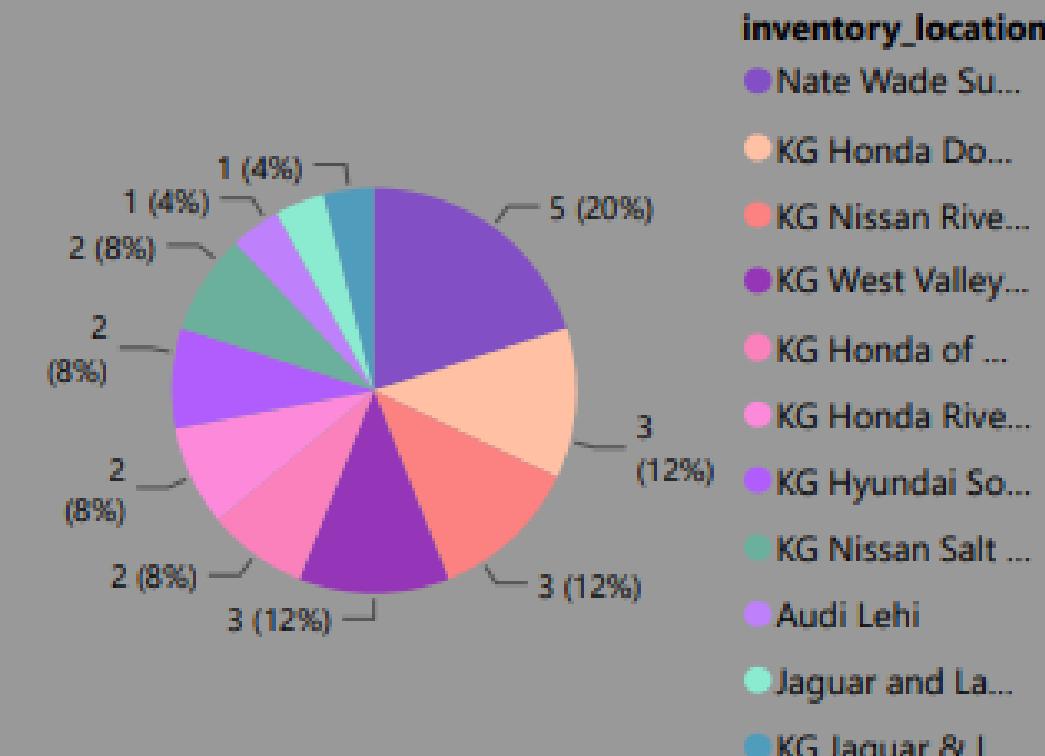
OFFERS BY TRANSMISSION



REVENUE BY STATE



INCENTIVES BY INVENTORY



Key influencers Top segments

What influences gross_price to

Increase



mileage goes down 6790...

\$16.07K

← On average when mileage decreases, gross_price increases.





**Guess the
case with
the highest
valued car!**



BMW i8

\$100k



Audi S5

Sportback

\$40k

**Subaru
Forester**

\$3k





THANK YOU

Conclusion & Questions



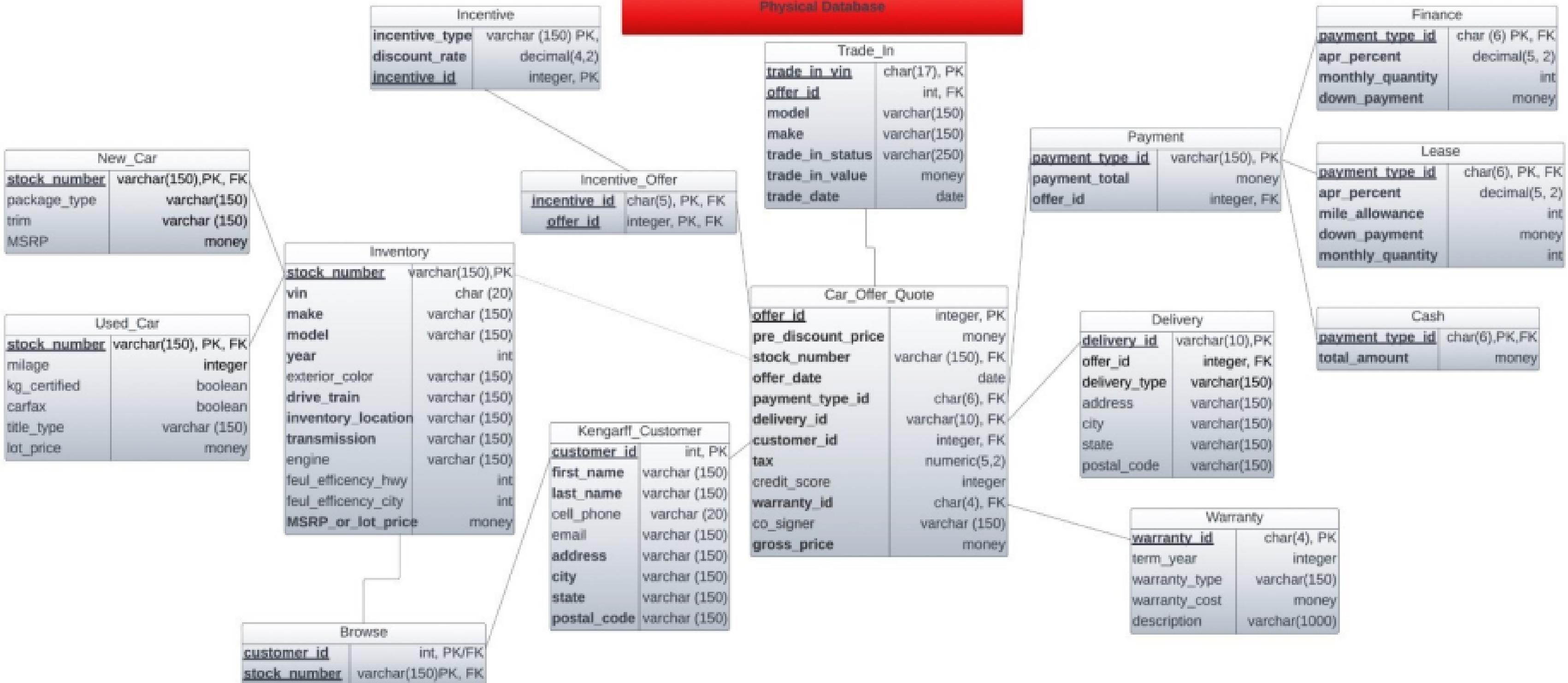
Ken Garff Automotive Group

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Physical Model

Ken Garff Automotive Group
Buying a Car Online



Ethical Considerations

Collection of Personal Information

Ken Garff Remote Start program collects personal information, such as one's email address, name, home/work address and telephone number. Ken Garff Remote Start also collects anonymous demographic information, which is not unique to an individual, such as ZIP code, age, gender, preferences, interests and favorites.

There is also information about computer hardware and software that is automatically collected by Ken Garff Remote Start. This information can includes: one's IP address, browser type, domain names, access times and referring website addresses. This information is used by Ken Garff Remote Start for operations, to maintain quality of the service, and to provide general statistics.

Ethical Considerations Cont.

Use of Personal Information

Ken Garff Remote Start is compliant with the CCPA in that it does not sell, rent or lease its customer lists to third parties and customers can opt out. In short, Ken Garff Automotive Group maintains confidentiality (KG).

Ken Garff Remote Start could be better at gaining explicit customer consent to use customer's data. Currently, the Remote Start program uses the data that customers enter into their website to reach back out to the customer about their inquiry, inform them of future opportunities or arrange delivery. Ken Garff Automotive also uses the data customers enter into the Remote Start site to determine which vehicles and services are most popular to know what to advertise, order, continue, or discontinue in the future. While this data is useful for both the Group and customers (as they are provided more of their desired vehicles and services), it would be helpful and more ethical for the Group to inform consumers about what their data would be used for and gain their consent to use it (metarouter).

Modifications Needed

Pricing Structure

When beginning the process of gathering data, we began to find a few discrepancies in our initial models. The first was how we hoped to structure the price. We first had the pricing information in the offer quote only. After looking through the vehicles in Ken Garff's inventory, we found that it would make the most sense to include the pricing information with each car in the inventory table. In the future, it may be more effective to separate this price out further into its own entity which would connect it to the vehicle listed but also detail other items such as tax, commission earned, registration fees, and all other financial charges that would be tied to that price point.