

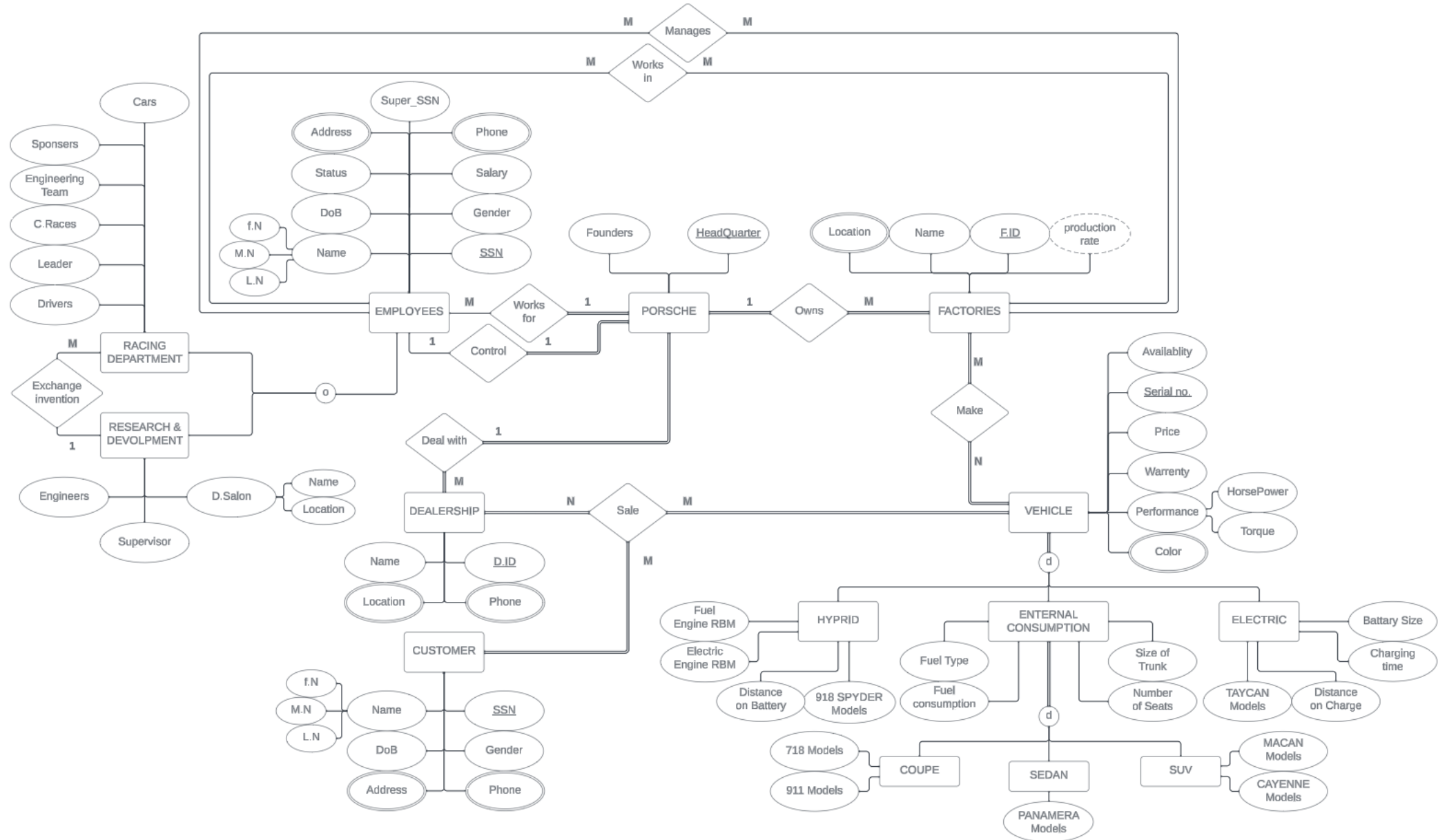


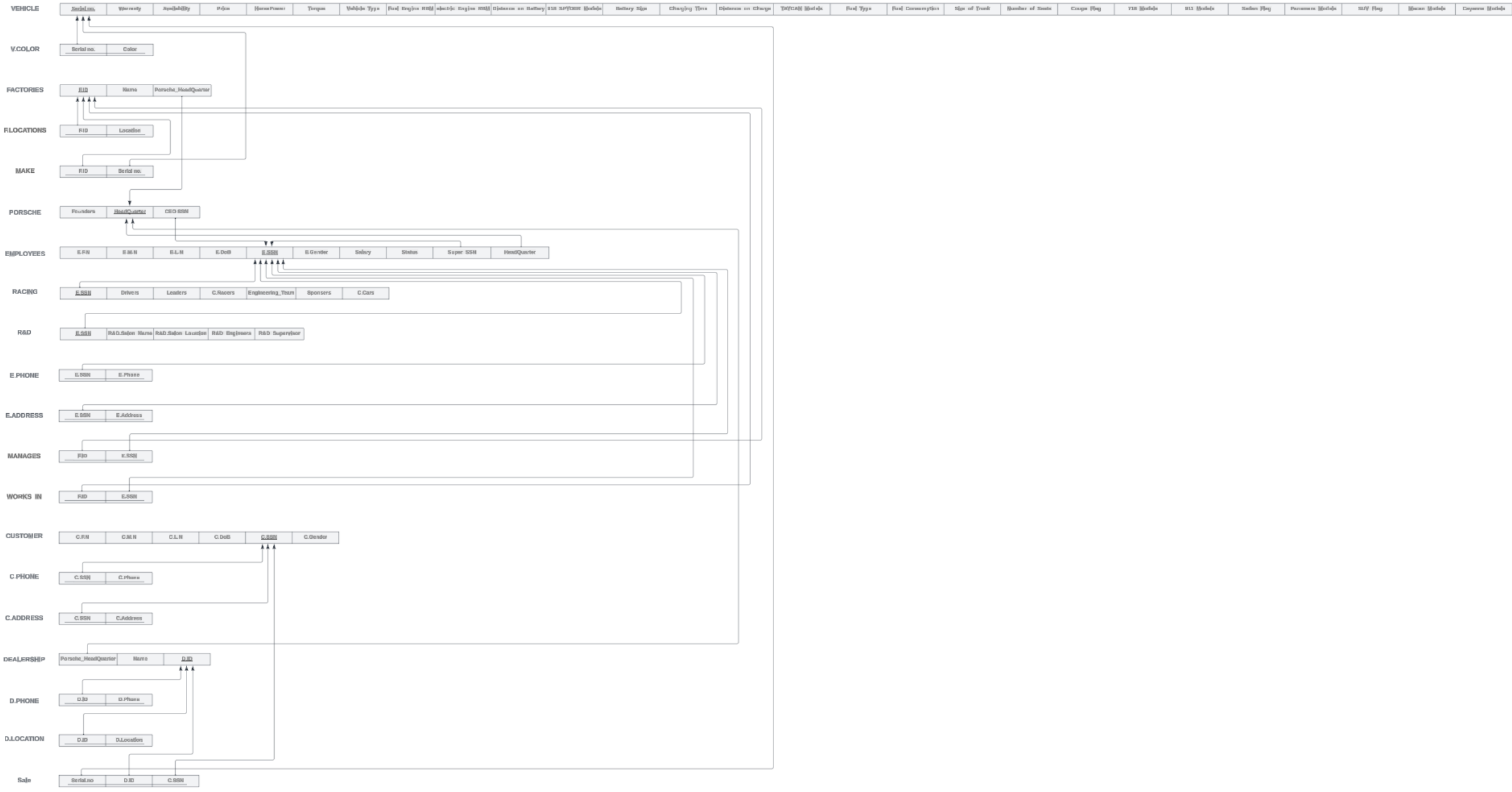
Porsche

ER, Relation Table, RAL, Data Sample

Porsche

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Rational Algebra Queries

Employees name that works in factories of germany:

$\pi_{efn,emn,eln,ssn}(\sigma_{location='Germany'}(EMPLOYEES \bowtie_{e.ssn=e.ssn} WORKS_IN \bowtie_{f.id=f.id} FLOCATIONS))$

Retrieve the colors of vehicles sold to customers:

$\pi_{color}(VEHICLE \bowtie_{serial\ no.=serial\ no.} SALE \bowtie_{c.ssn=c.ssn} CUSTOMER)$

Find the locations of factories where employees work:

$\pi_{f.location}(FACTORIES \bowtie_{f.id=f.id} WORKS_IN \bowtie_{e.ssn=e.ssn} EMPLOYEES)$

List the employees who manage others:

$\pi_{e.ssn,e.phone,e.address}(\sigma_{e.ssn=super_ssn} EMPLOYEES \bowtie_{e.ssn=e.ssn} MANAGES)$

Get the phone numbers and addresses of customers who made a purchase:

$\pi_{c.phone,c.address}(CUSTOMER \bowtie_{c.ssn=c.ssn} SALE)$

Retrieve the Serial no. and color of vehicles sold at a particular dealership:

$\pi_{serial\ no.,v.color}(\sigma_{d.id='201'}(VEHICLE \bowtie_{serial\ no.=serial\ no.} SALE))$

Find the locations of factories where employees with a specific phone number work:

$\pi_{f.location}(FACTORIES \bowtie_{f.id=f.id} WORKS_IN \bowtie_{e.ssn=e.ssn} \sigma_{phone='(212)-456-7900'}(EMPLOYEES))$

List the factory locations where employees are managed by a specific manager:

$\pi_{f.location}(FACTORIES \bowtie_{f.id=f.id} WORKS_IN \bowtie_{e.ssn=e.ssn} \sigma_{super_ssn=7}(MANAGES))$

Retrieve the colors of vehicles sold to customers in a specific location:

$\pi_{v.color}(VEHICLE \bowtie_{serial\ no.=serial\ no.} (SALE \bowtie_{c.ssn=c.ssn} \sigma_{c.address='Cairo'}(CUSTOMER)))$

Find the phone numbers and addresses of customers who made a purchase at a specific dealership:

$\pi_{c.phone,c.address}(\sigma_{d.id='Porsche Showroom Zayed'}(CUSTOMER \bowtie_{c.ssn=c.ssn} SALE))$

Retrieve the names and addresses of employees who manage others:

$\pi_{efn,emn,eln,e.address}(\sigma_{e.ssn=super_ssn}(EMPLOYEES \bowtie_{e.ssn=e.ssn} MANAGES))$

List the locations of dealerships where vehicles of a specific color were sold:

$\pi_{d.location}(DEALERSHIP \bowtie_{d.id=d.id} (SALE \bowtie_{serial\ no.=serial\ no.} \sigma_{color='Red'}(VEHICLE)))$

Retrieve the names and addresses of employees working in factories located in a specific city:

$\pi_{efn,emn,eln,e.address}(EMPLOYEES \bowtie_{e.ssn=e.ssn} (WORKS_IN \bowtie_{f.id=f.id} \sigma_{location='china'}(FACTORIES)))$

Find the phone numbers and addresses of customers who purchased vehicles of a specific color:

$\pi_{c.phone,c.address}(CUSTOMER \bowtie_{c.ssn=c.ssn} (SALE \bowtie_{serial\ no.=serial\ no.} \sigma_{color='Spectral color'}(VEHICLE)))$

Find the Serial number, Availability, Price, and Torque of vehicles with HorsePower greater than 400, fueled by gasoline, marked as a coupe:

$\pi_{Serial.no, Availability, Price, Torque}(\sigma_{HorsePower > 400 \wedge Fuel_Type = 'Gasoline' \wedge Coupe_Flag = 'Yes'}(VEHICLE)) \bowtie_{Serial.no = Serial.no} (MAKE)$