

# RELATIONAL ALGEBRA: EXAMPLES

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*CS 564- Fall 2021*

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# EXAMPLE DB: SAILORS

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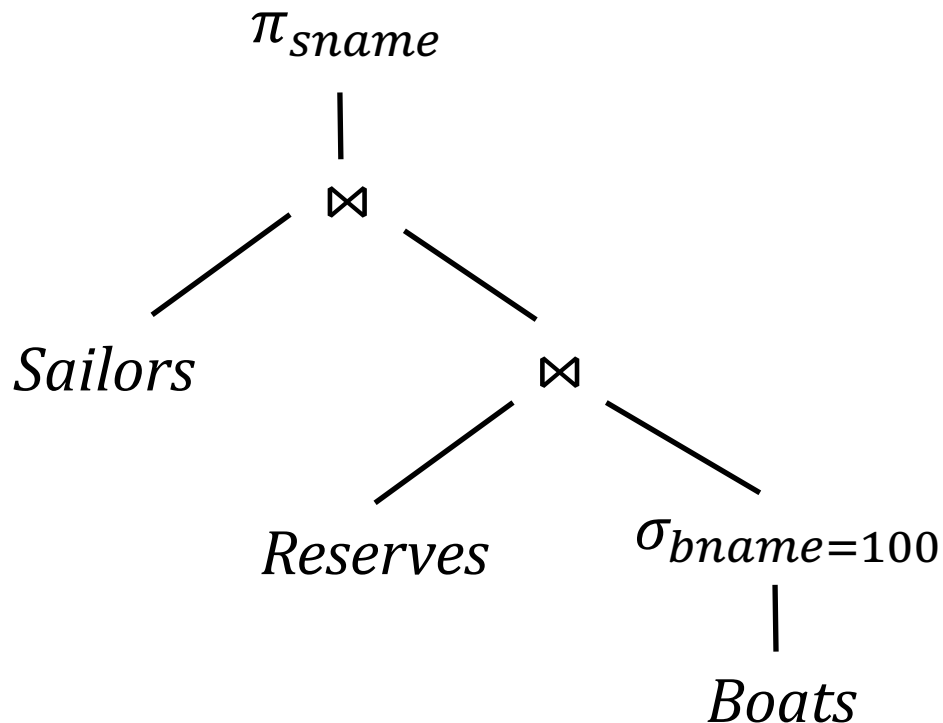
**Sailors** (sid, sname, rating, age)

**Reserves** (sid, bid, day)

**Boats** (bid, bname, color)

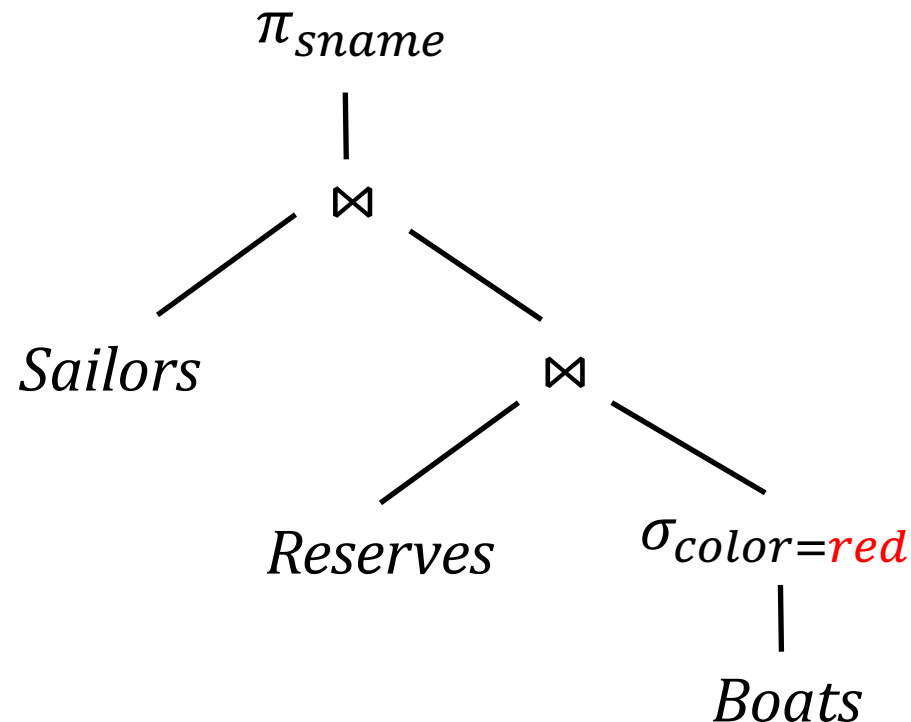
# EXAMPLE DB: SAILORS

***Q1:** What are the names of the sailors who have reserved boat with name “100” ?*



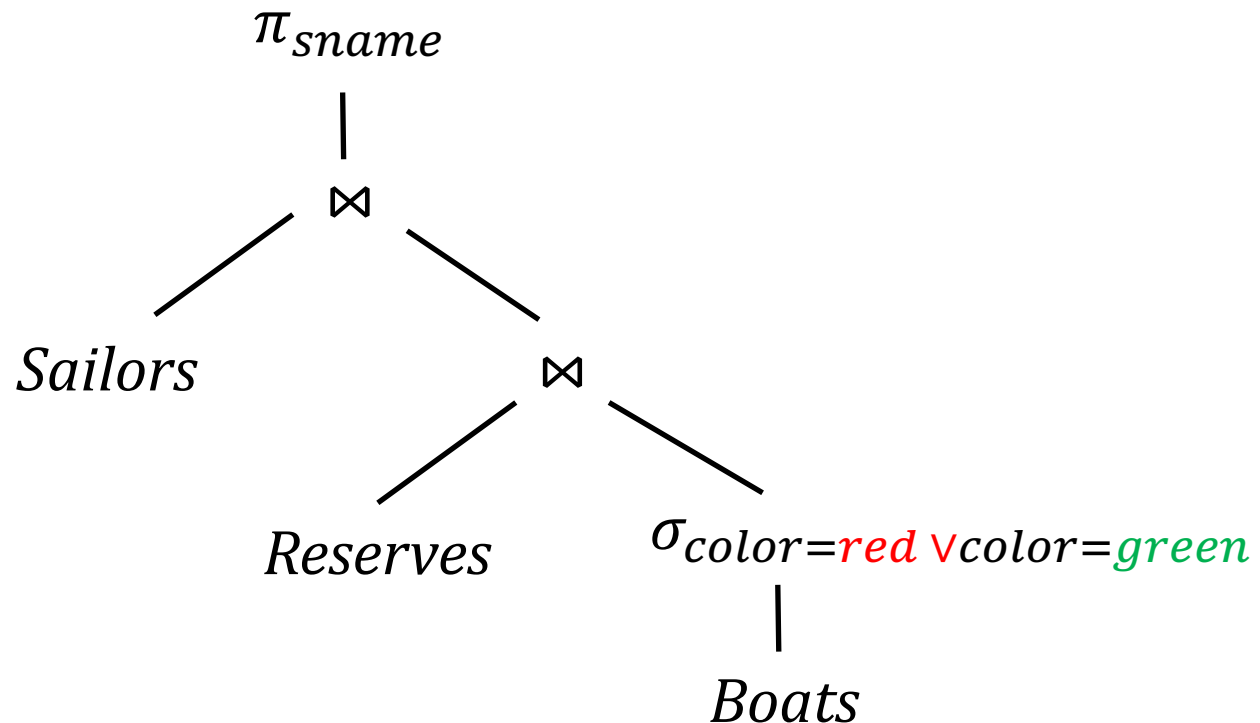
# EXAMPLE DB: SAILORS

**Q2:** *What are the names of the sailors who have reserved a **red** boat ?*



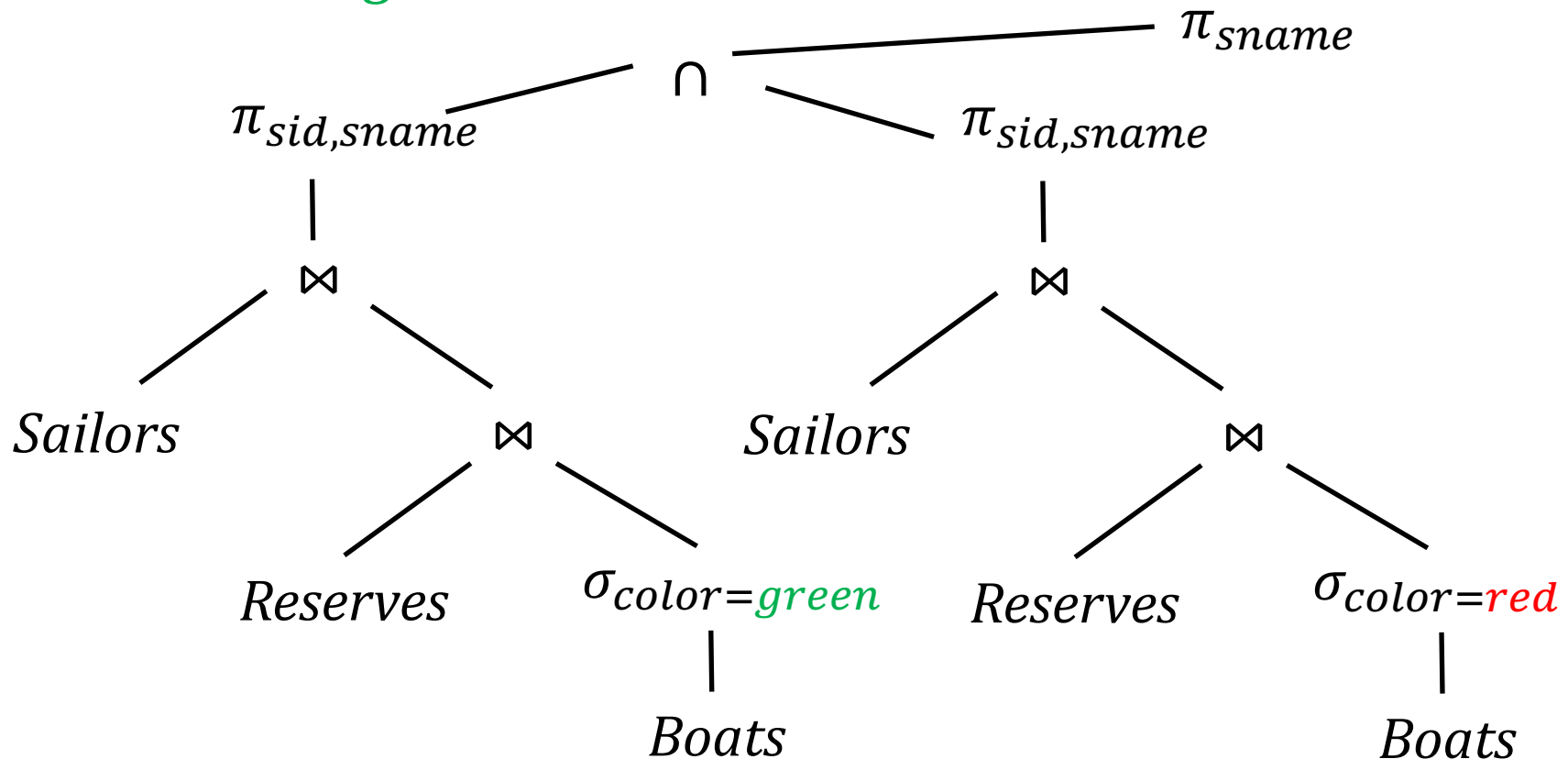
# EXAMPLE DB: SAILORS

**Q3:** *What are the names of the sailors who have reserved a **green** or **red** boat?*



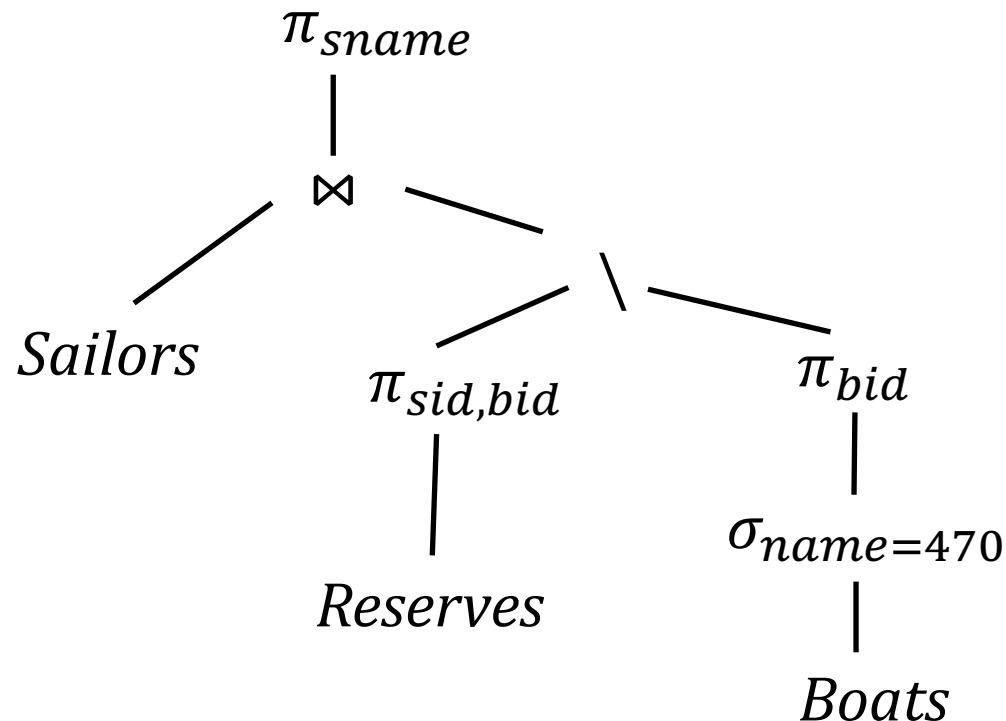
## EXAMPLE DB: SAILORS

**Q4:** What are the names of the sailors who have reserved a **green** and **red** boat ?



# EXAMPLE DB: SAILORS

*Q5: Find the names of the sailors who have reserved all boats with name "470".*



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# EXAMPLE DB: PRODUCTS

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**Product** (pid, name, price, category, maker-cid)

**Purchase** (buyer-ssn, seller-ssn, store, pid)

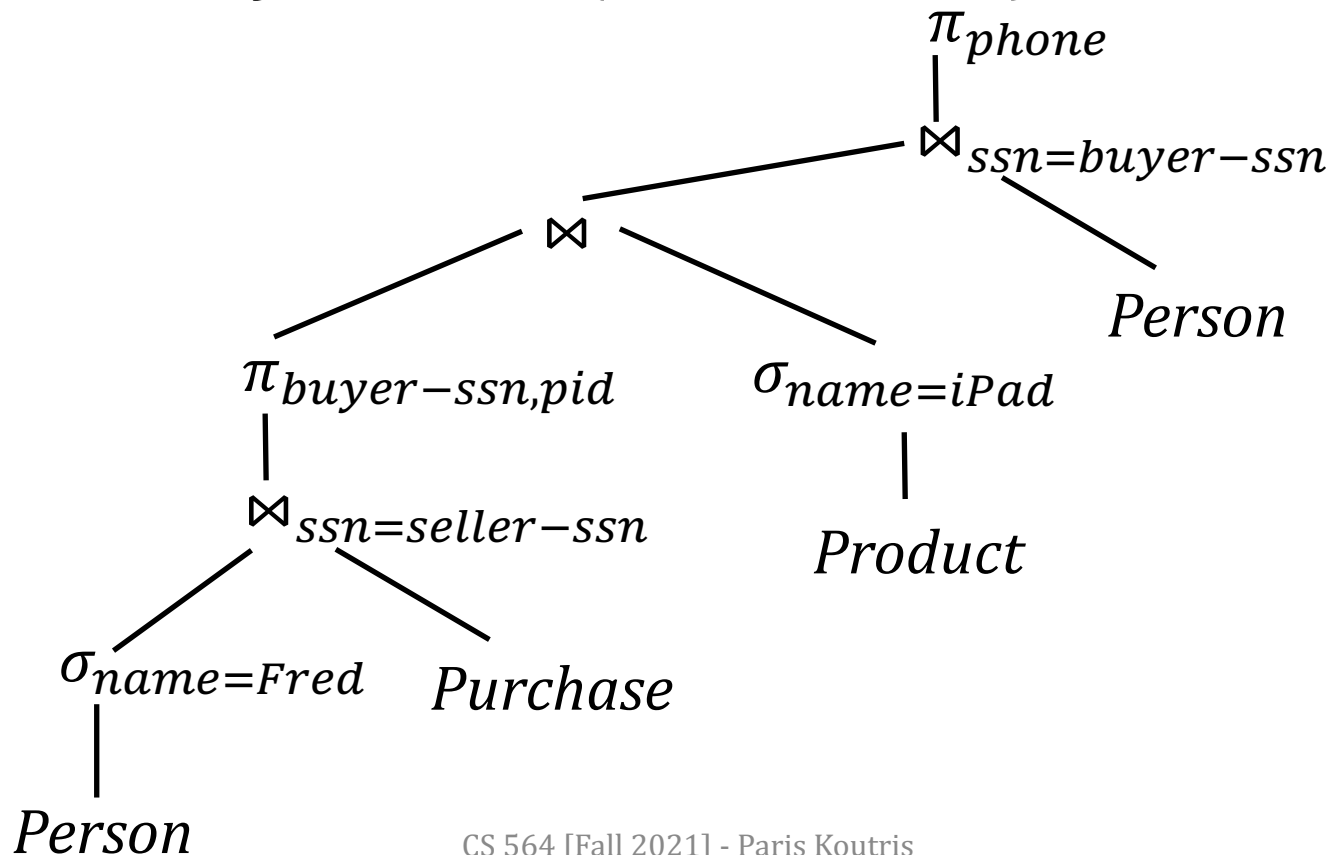
**Company** (cid, name, country)

**Person** (ssn, name, phone, city)



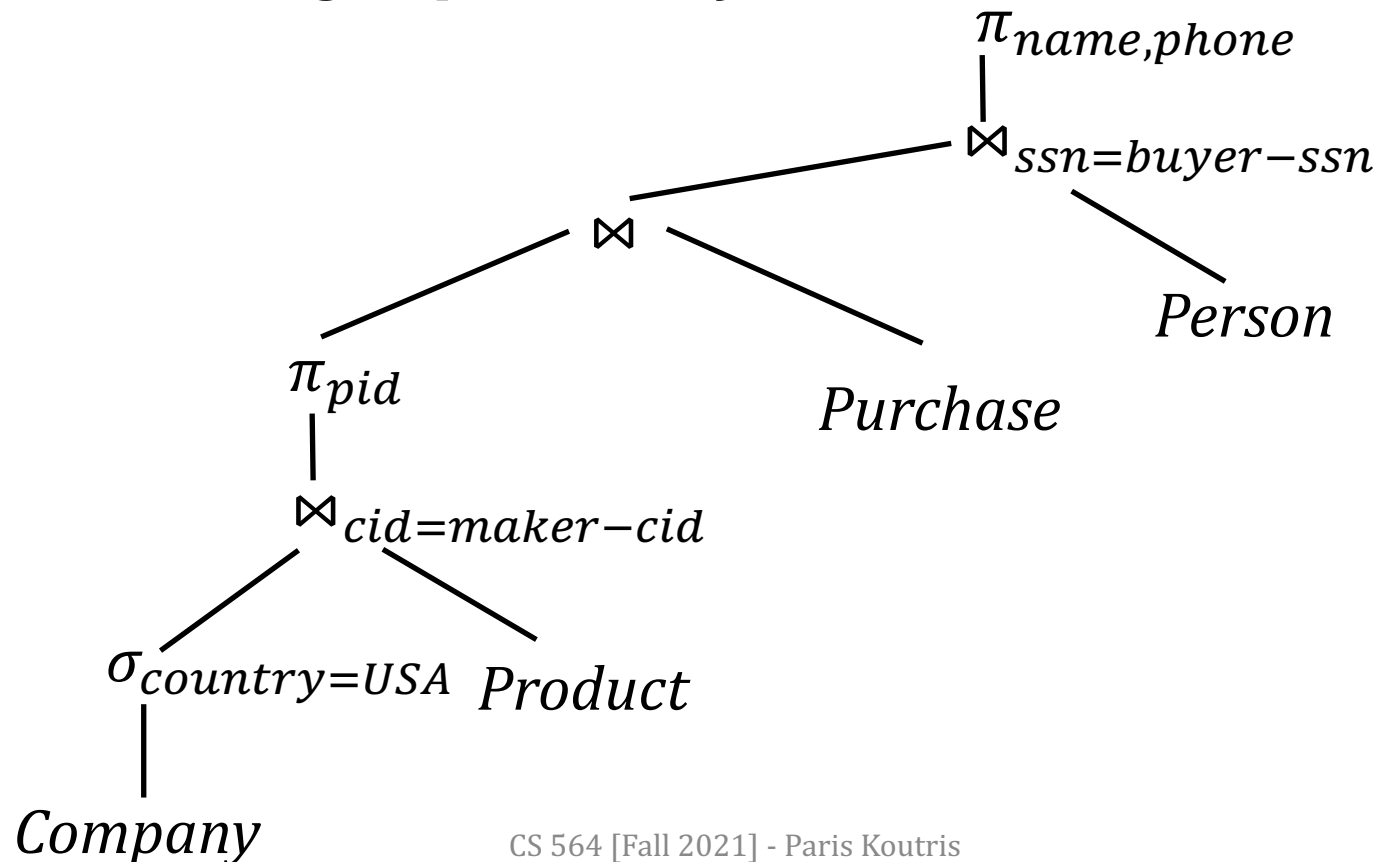
# EXAMPLE DB: PRODUCTS

*Q6: Find the phone numbers of the people who have bought iPads from Fred (the salesman).*



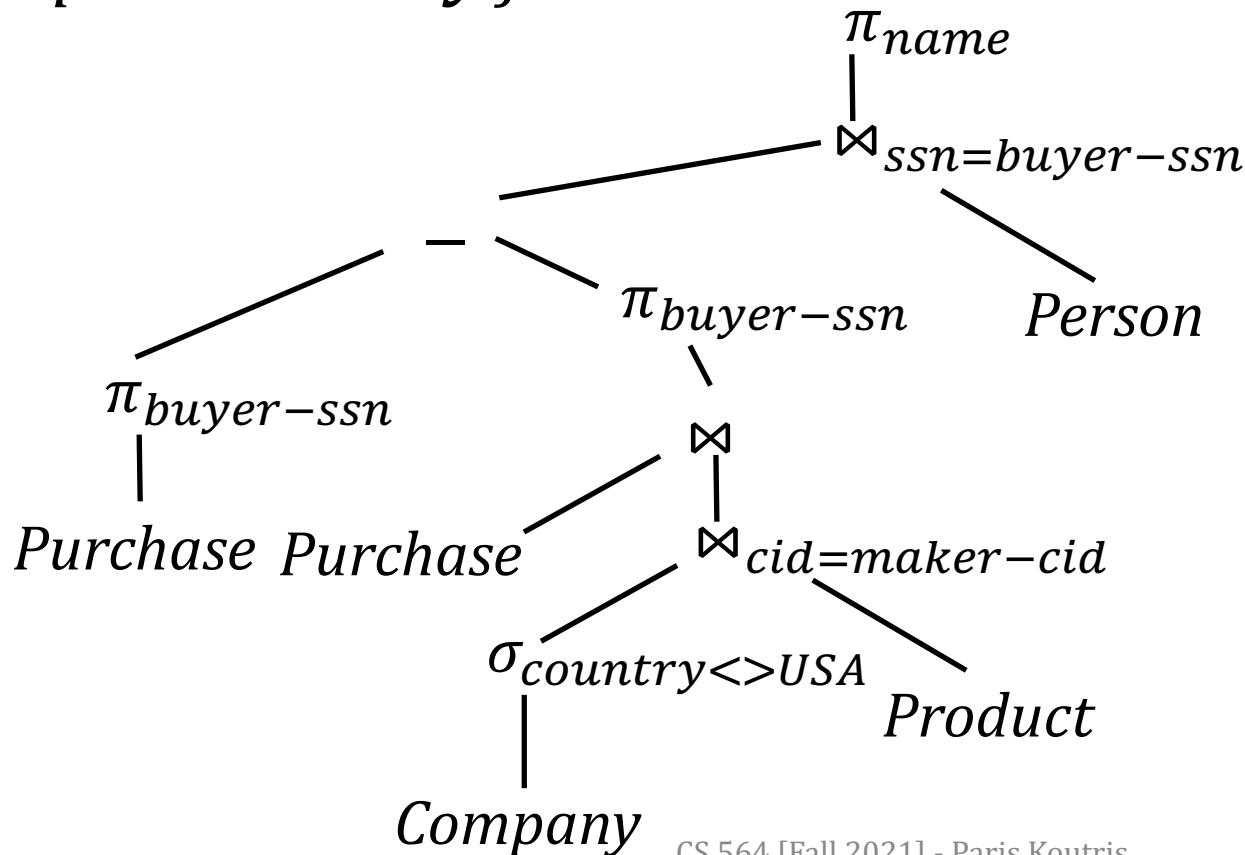
# EXAMPLE DB: PRODUCTS

*Q7: Find the names and phone numbers of the people who have bought products from the USA.*



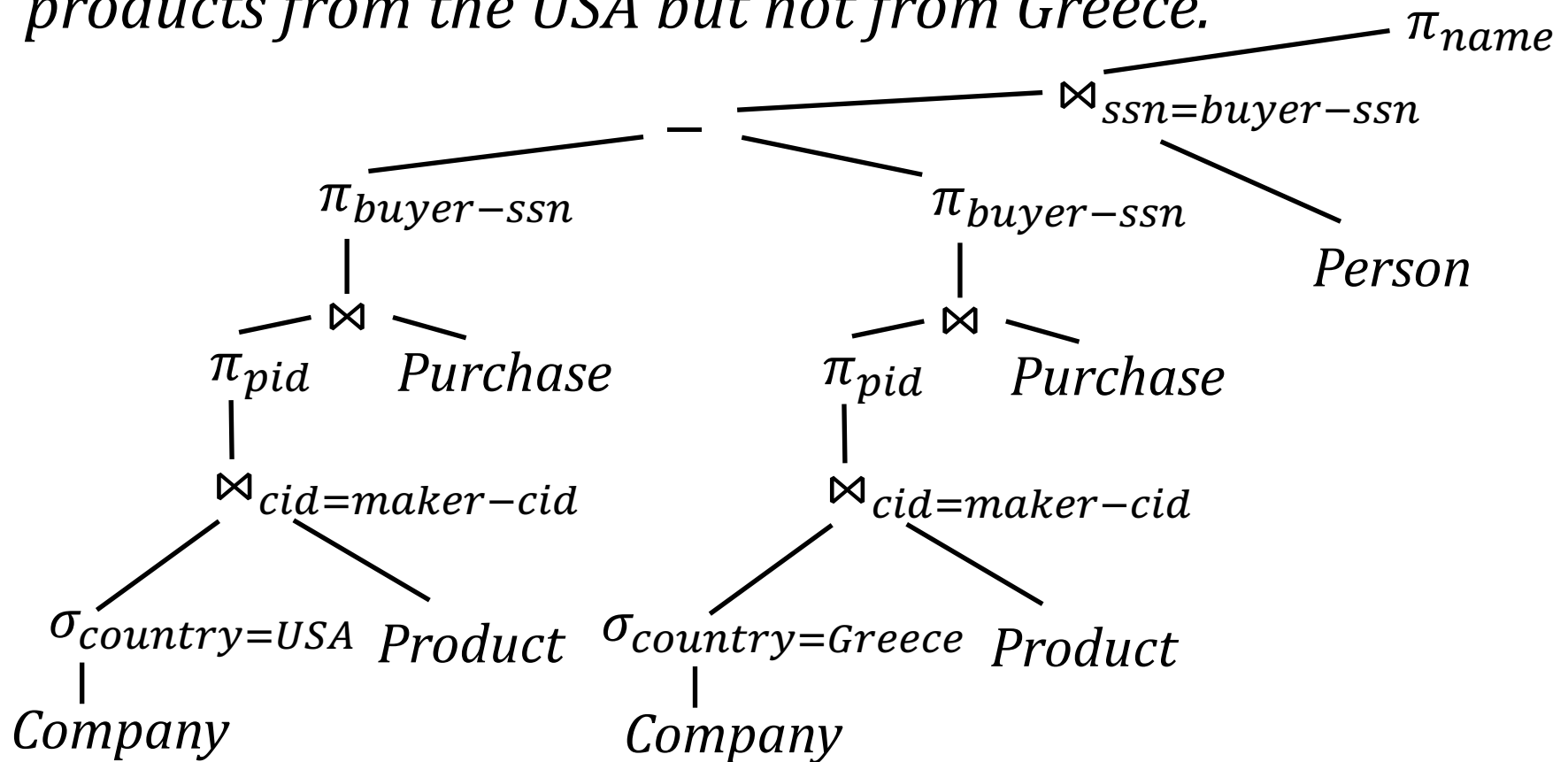
# EXAMPLE DB: PRODUCTS

*Q8: Find the names of the people who have bought products **only** from the USA.*



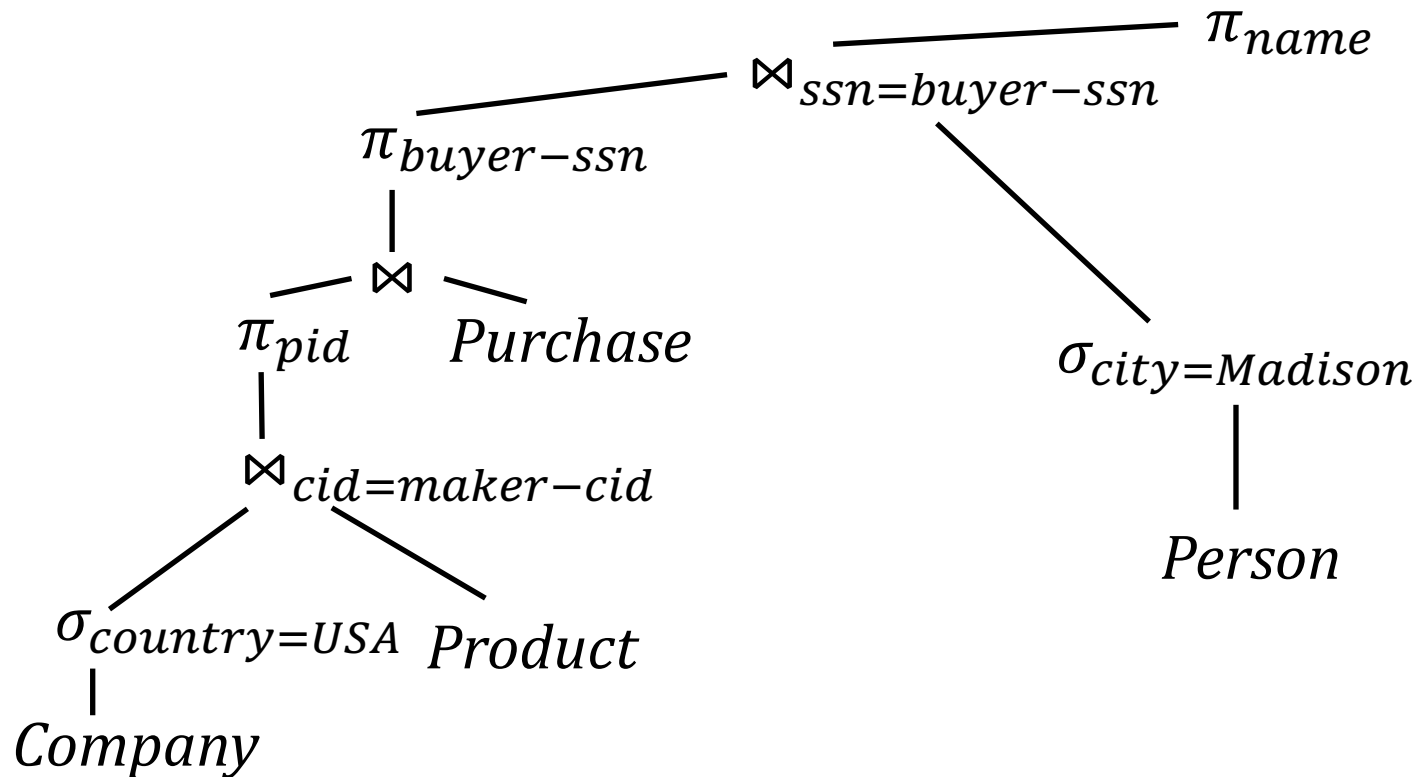
# EXAMPLE DB: PRODUCTS

*Q9: Find the names of the people who have bought products from the USA but not from Greece.*



# EXAMPLE DB: PRODUCTS

***Q10:** Find the names of the people who have bought products from the USA and live in Madison.*



# EXAMPLE DB: FLIGHTS

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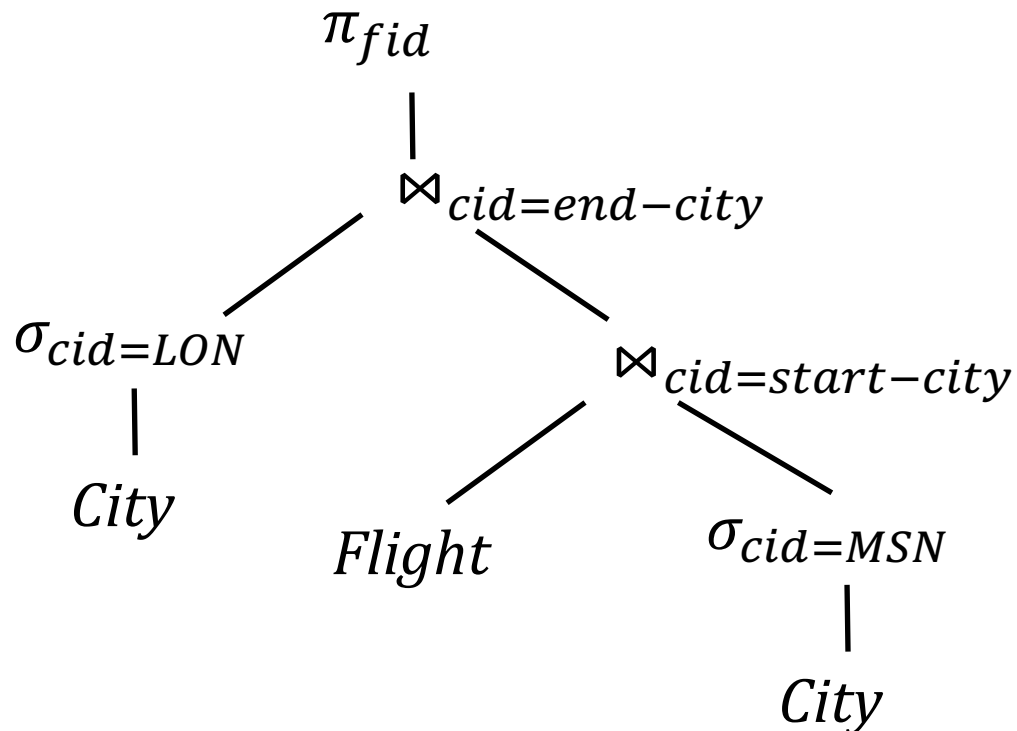
**City** (cid, name, population)

**Flight** (fid, length, start-city, end-city, aid)

**Airline** (aid, name, profit)

# EXAMPLE DB: FLIGHTS

**Q11:** Find the flight ids for flights that start in a city with id “MSN” and end in a city with id “LON”.



# EXAMPLE DB: FLIGHTS

**Q12:** Find the names of the cities that have a flight for every airline with profit more than 0.

