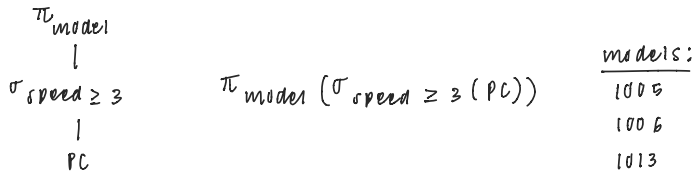
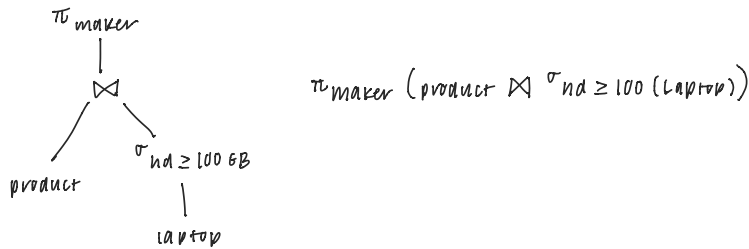


Pg. 52 2.4.1 a-d

a) What PC models have a speed of at least 3.00?



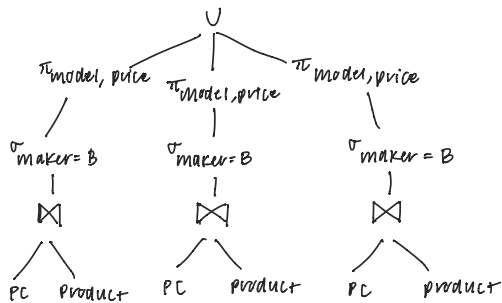
b) Which manufacturers make laptops w/ hard disk at least 100GB



query:

maker
E
A
B
F
G

c) Model # and price of all products made by manufacturer B:

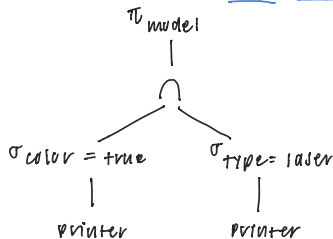


$\pi_{model, price}(\sigma_{maker=B}(PC \bowtie \text{product})) \cup$   
 $\pi_{model, price}(\sigma_{maker=B}(PC \bowtie \text{product})) \cup$   
 $\pi_{model, price}(\sigma_{maker=B}(PC \bowtie \text{product}))$

query:

model	price
1004	649
1005	630
1006	1049
2007	1429

d) Model #s of all color laser printers



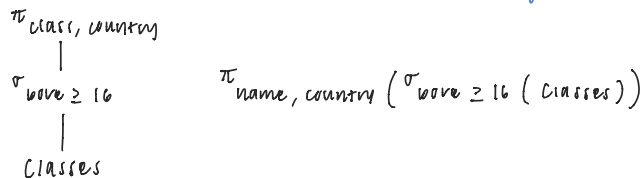
$\pi_{model}(\sigma_{color=true \text{ AND } type='laser'}(\text{printer})) \Rightarrow$

query

model
3003
3007

Pg. 55 2.4.3 a-d

a) class names and countries of classes with guns 16 in. bore



query:

class	country
Iowa	USA
North Carolina	USA
Yamato	Japan

b) Ships launched before 1921

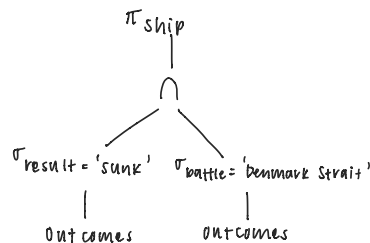
$$\sigma_{\text{launched} < 1921} \quad \sigma_{\text{launched} < 1921} (\text{ships})$$

Ships

query:

name	class	launched
Haruna	Kongo	1916
Hiei	Kongo	1914
Kirishima	Kongo	1915
Kongo	Kongo	1913
Ramillies	Revenge	1917
Renown	Renown	1916
Republie	Renown	1916
Resolution	Revenge	1916
Revenge	Revenge	1916
Royal Oak	Revenge	1916
Royal Sovereign	Revenge	1916
Tennessee	Tennessee	1916

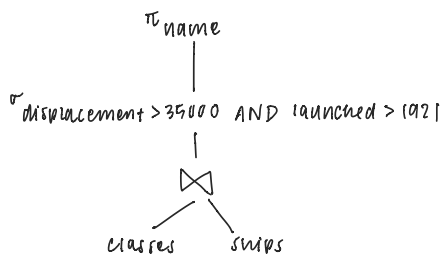
c) Ships sunk in battle of Denmark Strait



$$\pi_{\text{ship}} (\sigma_{\text{result} = \text{'sunk'}} \text{ AND } \sigma_{\text{battle} = \text{'Denmark Strait'}} (\text{Outcome}))$$

query:  
ship  
 Bismark  
 Hood

d) Treaty of Washington: weight cannot be > 35000 ton ships that violated treaty



$$\pi_{\text{name}} (\sigma_{\text{displacement} > 35000 \text{ AND } \text{launched} > 1921} (\text{classes} \bowtie \text{ships}))$$

query  
ships:  
 Missouri  
 Iowa  
 North Carolina  
 Washington  
 Musashi  
 Yamato

Pg 62 2-5.1 a-b

a) PC with processor speed less than 2.00 must not sell for more than \$500

$$\pi_{\text{model}} (\sigma_{\text{speed} < 2} (\text{PC})) \subseteq \pi_{\text{model}} (\sigma_{\text{price} \leq 500} (\text{PC}))$$

b) Laptop with screen size < 15.4 in. must have hard disk  $\geq 100\text{GB}$  or sell < \$1000

$$\pi_{\text{model}} (\sigma_{\text{screen} \geq 15.4} (\text{Laptop})) \subseteq \pi_{\text{model}} (\sigma_{\text{hd} < 100 \vee \text{price} \leq 1000} (\text{Laptop}))$$