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CS 360

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Assignment #5 Work

1) GOOD

SELECT Pets.PetID, Pets.Name, Pets.TypeofPet

FROM Pets

INNER JOIN Owns ON Pets.PetID = Owns.PetID

INNER JOIN Owners ON Owns.OID = Owners.OID

WHERE Owners.AnnualIncome = 0

AND Owners.Age < 18

AND Pets.City = 'Moscow'

AND Pets.State = 'Idaho'

ORDER BY Pets.Name ASC, Pets.TypeofPet DESC;

τ(Name,TypeofPet)(∏(PetID,Name,TypeofPet)(σ(City="Moscow"∧State="Idaho")((Pets)⋈(Owns)⋈(∏(OID)(σ(Age<18∧AnnualIncome=0)(Owners))))))

2) GOOD

SELECT Owners.OID, Owners.LastName, Pets.PetID, Pets.Name

FROM Pets

INNER JOIN Owns ON Owns.PetID = Pets.PetID

INNER JOIN Owners ON Owners.OID = Owns.OID

INNER JOIN Purchases ON Purchases.OID = Owners.OID

WHERE Purchases.FoodID IN (

SELECT f1.FoodID

FROM Foods f1

LEFT JOIN Foods f2

ON f1.TypeofFood = f2.TypeofFood

AND f1.Price < f2.Price

WHERE f2.FoodID IS NULL

);

∏(OID,LastName,PetID,Name)((Pets)⋈(Owns)⋈(∏(OID,LastName)((Owners)⋈(Purchases)⋈(∏(FoodID,Price,TypeofFood)(Foods))-(∏(FoodID,Price,TypeofFood)(σ(TypeofFood=f4∧Price<f5)((Foods)⋈(ρ(Foods)(f1,f2,f3,f4,f5,f6,f7)(Foods))))))))))

Or Nathan’s:

∏(OID,LastName,PetID,Name)((Pets)⋈(Owns)⋈(∏(OID,LastName)((Owners)⋈(Purchases)⋈((∏(FoodID,Price,TypeofFood)(Foods))-(∏(FoodID,Price,TypeofFood)(σ(TypeofFood=gd∧Price<gf)((Foods)Χ(ρ(Goods)(ga,gb,gc,gd,ge,gf,gg)(Foods)))))))))

3) CHECK

SELECT p1.PetID, p1.Name

FROM Pets p1, Pets p2

WHERE p1.Name = p2.Name

GROUP BY p1.PetID, p1.Name

HAVING COUNT(DISTINCT p2.State) = 50;

∏(PetID,Name)((Pets)⋈(∏(Name)(σ(`count(Name)`=50)((∏(count(Name),Name)(σ(Name=a2∧State≠a7)((Pets)Χ(∏(a2,a7)(ρ(Animals)(a1,a2,a3,a4,a5,a6,a7,a8)(Pets))))))))))

4) I THINK GOOD

SELECT f1.Brand

FROM Foods f1

LEFT JOIN Foods f2 ON f1.TypeofFood = f2.TypeofFood

AND f1.Price < f2.Price

WHERE f2.FoodID IS NULL;

∏(Brand)((Foods)-(Foods)⋈(∏(FoodID)(σ(ClassofFood=f7∧Price<f5)((Foods)⋈(ρ(Foods)(f1,f2,f3,f4,f5,f6,f7)(Foods))))))

5) GOOD

SELECT f1.FoodID, f1.Brand, f1.Price

FROM Foods f1

LEFT JOIN Foods f2 ON f1.Brand = f2.Brand

AND f1.Price < f2.Price

WHERE f2.FoodID IS NULL;

∏(FoodID,Brand,Price)((Foods)-(Foods)⋈(∏(FoodID)(σ(Brand=f3∧Price<f5)((Foods)⋈(ρ(Foods)(f1,f2,f3,f4,f5,f6,f7)(Foods))))))