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Assignment 3

Questions

1. Select the make_name and model_name of all vehicles which have a first production year of 1976

π *Model.model_name, Make.make_name* (σ *Model.first_production_year = "1976"* ((*Vehicles* $\bowtie$ *Vehicle.fk_model_id=Model.model_id* *Model*) $\bowtie$ *Vehicle.fk_make_id=Make.make_id* *Make*))

2. Select the make_name and model_name of all vehicles with the color name Blue

π *Model.model_name, Make.make_name* (σ *Color.name = "Blue"* ((((*Vehicles* $\bowtie$ *Vehicle.fk_model_id=Model.model_id* *Model*) $\bowtie$ *Vehicle.fk_make_id=Make.make_id* *Make*) $\bowtie$ *Vehicle.vehicle_id=Inventory.fk_vehicle_id* *Inventory*) $\bowtie$ *Inventory.fk_color_id = Color.color_id* *Color*))

3. Select the make_name, model_name and incentive amount for all vehicles with a dealer type incentive

π *Model.model_name, Make.make_name , Incentive.amount* (σ *Incentive.type = "dealer"* ((((*Vehicles* $\bowtie$ *Vehicle.fk_model_id=Model.model_id* *Model*) $\bowtie$ *Vehicle.fk_make_id=Make.make_id* *Make*) $\bowtie$ *Vehicle.vehicle_id = Vehicle_Incentive.fk_vehicle_id* *Vehicle_Incentive*) $\bowtie$ *Incentive.incentive_id = Vehicle_Incentive.fk_incentive_id* *Incentive*))

4. Convert the following query to relational algebra

SELECT Player.id, Team.name, City.name FROM Player
INNER JOIN Team ON Player.team_id = Team.id
INNER JOIN City ON Team.city_id = City.id
WHERE Player.score = 100;

π *Player.id, Team.name, City.name(*σ *Player.score = "100" ((Player* $\bowtie$ *Player.team_id = Team.id Team)* $\bowtie$ *Team.city_id = City.id City))*

5. For problem 3 above, convert your relational algebra query into a SQL query.

SELECT Model.model_name, Make.make_name, Incentive.amount FROM Vehicle
INNER JOIN Model ON Vehicle.fk_model_id = Model.model_id,
INNER JOIN Make ON Vehicle.fk_make_id = Make.make_id,
INNER JOIN Vehicle_Incentive ON Vehicle.vehicle_id = Vehicle_Incentive.fk_vehicle_id,
INNER JOIN Incentive ON Vehicle_Incentive.fk_incentive_id = Incentive.incentive_id,
WHERE Incentive.type = "dealer";