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Class: CS 340

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Relational Algebra Homework

1. Select the make\_name and model\_name of all vehicles which have a first production year of 1976

π Make.make\_name, Model.model\_name (σ Model.first\_production\_year >1976 (

(Vehicle ⋈Vehicle.fk\_make\_id =Make.make\_id Make) ⋈ Vehicle.fk\_model\_id =Model.model\_id Model))

1. Select the make\_name and model\_name of all vehicles with color name Blue

π Make.make\_name, Model.model\_name (σ Color.name = Blue (((Vehicle ⋈Vehicle.fk\_make\_id =Make.make\_id Make) ⋈ Vehicle.fk\_model\_id =Model.model\_id Model) ⋈ Inventory.fk\_vehicle\_id = Vehicle.vehicle\_id Inventory) ⋈ Inventory.fk\_color\_id = Color.color\_id  Color))

1. Select the make\_name, model\_name and incentive amount for all vehicles with a dealer type incentive

π Make.make\_name, Model.model\_name, Incentive.amount (σ Incentive.type = dealer (((Vehicle ⋈Vehicle.fk\_make\_id =Make.make\_id Make) ⋈ Vehicle.fk\_model\_id =Model.model\_id Model) ⋈ Vehicle\_Incentive.fk\_vehicle\_id = Vehicle.vehicle\_id Vehicle\_Incentive) ⋈ Incentive.incentive\_id = Vehicle\_Incentive.fk\_incentive\_id  Incentive))

1. 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 ((Team ⋈ Team.id = Player.team\_id Player) ⋈ Team.city\_id = City\_id City))

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

SELECT Make.make\_name, Model.model\_name, Incentive.amount FROM Make

INNER JOIN Vehicle ON Vehicle.fk\_make\_id = Make.make\_id

INNER JOIN Model ON Mode.model\_id = Vehicle.fk\_model\_id

INNER JOIN Vehicle\_Incentive vc ON vc.fk\_vehicle\_id = Vehicle.vehicle\_id

INNER JOIN Incentive inc ON inc.incentive\_id = vc.fk\_incentive\_id

WHERE inc.type = “dealer”;