Questions

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

πmk.make\_name, mdl.model\_name (

σmdl.first\_production\_year=1976(

#on the joined table relating make and model, which holds 1st year

Vehicle **⋈** vehicle.fk\_model\_id = mdl\_model\_id mdl <- Model

)

**⋈vehicle.fk\_make\_id = mk.make\_id** mk <- Make

)

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

πmk.make\_name, mdl.model\_name (

σc.name = “Blue” (

# on table of vehicle, inventory, color

(((mdl <- Model **⋈**mdl\_model\_id = vehicle.fk\_model\_id  Vehicle)

⋈vehicle.vehicle\_id = i.fk\_vehicle\_id I <- Inventory)

⋈i.fk\_color\_id = c.color\_id c <- Color)

)

**⋈vehicle.fk\_make\_id = mk.make\_id** mk <- Make

)

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

πmake\_name, model\_name, amount (

σincentive.type = “dealer” (

((model **⋈**model.model\_id = vehicle.vehicle\_idVehicle)

**⋈**vehicle.vehicle\_id = vehicle\_incentive.fk\_vehicle.id Vehicle\_Incentive)

**⋈**vehicle\_incentive.fk\_incentive\_id = incentive.incentive\_id Incentive

)

**⋈**vehicle.fk\_make\_id = make.make\_id Make

)

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;

πplayer.id, team.name, City.name (

σPlayer.score = 100 (

(Player **⋈**Player.team\_id = Team.id Team)

**⋈**Team.city\_id = City.id City

)

)

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

SELECT mk.make\_name, m.model\_name, mwi.amount FROM Model m

INNER JOIN

(SELECT mdl.model\_id, mdl.model\_name, v.fk\_make\_id, i.amount FROM Model mdl

INNER JOIN Vehicle v ON mdl.model\_id = v.fk\_model\_id

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

INNER JOIN Incentive i ON vi.fk\_incentive\_id = i.incentive\_id

WHERE i.type = “dealer”) AS mwi

ON m.model\_id = mwi.model\_id

INNER JOIN Make mk ON mk.make\_id = mwi.fk\_make\_id;