Quiz SQL 4 Key and rubric

Write SQL queries(without aggregate operators and without JOIN keywords) using the following schema: Vehicle (VRN, Ma, Mo, Year), Own (VRN, SSN). Person (SSN, Name, Addr)

1. (5 pts) Write a SQL query that returns the name and address of the owner of each vehicle with the oldest manufacture Year in the database. At most 2 points each, if use an aggregate

SELECT P.name, P.address operator like MIN or COUNT, or JOIN keyword FROM Vehicle V, Own O, Person P WHERE V.VRN = O.VRN AND O.SSN = P.SSN AND V.Year NOT IN /* only oldest year will NOT be in thie set ... */ (SELECT V1.Year /* ... of all years that are more recent than another year in the DB */ FROM Vehicle V1, Vehicle V2 WHERE V1.Year > V2.Year) Other correct answers possible

or

SELECT P.name, P.address /* not ideal, but still correct, full credit */ FROM Vehicle V, Own O, Person P WHERE V.VRN = O.VRN AND O.SSN = P.SSN AND V.Year = (SELECT V.Year /* all years. */ FROM Vehicle V EXCEPT /* ... minus all years that are more recent than another year in the DB */ SELECT V1.Year FROM Vehicle V1, Vehicle V2 WHERE V1.Year > V2.Year) For both problems 1 and 2, stylistic differences are ok (answers

need not introduce row variables where the table name itself works (e.g., Own.VRN instead of O.VRN)

2. (5 pts) Write a SQL query that returns the VRN, Ma, Mo, and Year of each vehicle that is owned by a person who owns more than one Vehicle, as well as giving the SSN of the owner.

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SELECT O.SSN, V.VRN, V.Ma, V.Mo, V.Year /* Using DISTINCT preferred, but ok if not */

FROM Own O, Vehicle V

WHERE O.VRN = V.VRN AND /* pair up each owner with each of their vehicles */

O.SSN IN /* make sure owner SSN is in the set of owners of ... */

(SELECT O1.SSN /* SSNs of owners with 2 (or more) vehicles */

FROM Own O1, Own O2

WHERE O1.SSN = O2.SSN AND O1.VRN <> O2.VRN) /* same owner, different vehicles */

Can be <> or < or > all work
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OR

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-2 for any missing join condition
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SELECT O1.SSN, V.VRN, V.Ma, V.Mo, V.Year /* could also be O2.SSN */ /* Using DISTINCT preferred, but ok if not */ FROM Own O1, Own O2, Vehicle V WHERE O1.SSN = O2.SSN AND O1.VRN <> O2.VRN AND O1.VRN = V.VRN Must be <> ; < and > do NOTwork

Because we want to list the VRN of each vehicle along with SSN, using < (or >) would only return the lesser of two vehicles (or if there were more than two, it would fail to return the vehicle with maximum VRN (or minimum VRN if using >). For example, say that Joe owns vehicles with VRNs 123, 234, 345. Suppose we use <. Then there would be composite rows for Joe (with SSN of abc) after the WHERE clause were evaluated of

SSN O1 O2 abc 123 234 abc 234 345 abn 123 345 Don't need to involve the Person table, but no points off if answer does involve Person in a way thats still results in a correct query

but no entry for 345 in the O1 slot, so this vehicle would never be listed. If <> is used the, 345 will Other correct answers possible appear in the O1 slot.