Graded Problems for Module 12

The graded problems in module 12 involve SELECT statements for advanced query formulation using the Intercollegiate Athletic Database. The assignment in module 12 contains problems involving one-sided outer joins, nested queries as an alternative join style, nested aggregate functions, membership exceptions, and containment exceptions. The assignment may also contain problems not involving any elements of advanced query formulation. You should execute the statements using either Oracle or PostgreSQL.

Please number the SQL statements and format them neatly. For each statement, you should also take a screen snapshot demonstrating statement execution and some result rows. Indicate in the beginning of your document if you used Oracle or PostgreSQL.

Query Formulation Problems

1. List the event number, customer name, contact name, and authorization date where an event request has been approved but there is not an event plan. Identify the problem type and words in the problem statement that match the text pattern before writing the SELECT statement.
2. List the event number, date requested, date authorized, plan number, work date, and name of the supervising employee of events meeting the following conditions: (1) the date requested and date authorized are in July 2022, (2) the event request has “Approved” status, and (3) there is at least one event plan. Include a row in the result even if there is no supervising employee for the event plan. Identify the problem type and keywords in the problem statement that match the text pattern before writing the SELECT statement.
3. List event plan details (event plan number, work date, activity, employee number, employee name, and employee department) along with the count of event plan lines, and count of unique resources used in associated event plan lines. Use meaningful names for computed columns. Include an event plan in the result even if the event plan does not have a supervising employee. Only include event plans with a work date in December 2022 using more than one unique resource. Order the result by event plan number. Identify the problem

type and words in the problem statement that match the text pattern before writing the SELECT statement.

4. List the customer number, customer name, and contact of customers who have not submitted event requests. Identify the problem type and words in the problem statement that match the text pattern before writing the SELECT statement.

5. List the employee number, employee name, and email of employees who do not manage an event plan with a work date in October 2022. Identify the problem type and words in the problem statement that match the text pattern before writing the SELECT statement.

6. List the employee name, email, and average resource cost per event plan. The resource cost for an event plan is the sum of the resource count times the resource rate for lines in the event plan. The average resource cost is the average of the sum of resource cost across event plans. Identify the problem type and explain why the problem statement matches the problem type.

7. List the plan number, activity, and work date of plans meeting following conditions: (1) the work date occurs in the December 2022 and (2) the plan uses all resources with a rate greater than 15. For example, if there are five resources with a rate > 15, a plan must use all five resources. Identify the problem type and words in the problem statement that match the text pattern before writing the SELECT statement.

8. Rewrite the following SELECT statement. In the rewrite, change the cross product style on the *Facility* table to a Type I nested query. Explain why a Type I nested query can be used as an alternative join style for the *Facility* table.

```
SELECT eventplan.planno, eventrequest.eventno, workdate,activity
FROM eventrequest, eventplan, Facility
WHERE eventrequest.eventno = eventplan.eventno
  AND EventRequest.FacNo = Facility.FacNo
  AND eventplan.workdate BETWEEN '01-Dec-2022' AND '31-Dec-2022'
  AND facname = 'Basketball arena';
```

9. Rewrite the following SELECT statement. In the rewrite, change the cross product style on the *Facility* and *Employee* tables to Type I nested queries. Explain why a Type I nested query can be used as an alternative join style for the *Facility* and *Employee* tables.

```
SELECT DISTINCT eventrequest.eventno, dateheld, status, estcost
FROM eventrequest, employee, facility, eventplan
```

```
WHERE eventrequest.eventno = eventplan.eventno
  AND eventplan.empno = employee.empno
  AND eventrequest.facno = facility.facno
  AND facname = 'Basketball arena'
  AND empname = 'Mary Manager'
  AND workdate BETWEEN '01-Dec-2022' AND '31-Dec-2022';
```

10. Use the following INSERT statements in problems 10.1 and 10.2.

```
INSERT INTO Facility ( FacNo, FacName )
VALUES ('F107', 'Swimming Pool');

INSERT INTO Location ( LocNo, FacNo, LocName )
VALUES ('L107', 'F107', 'Gate');

INSERT INTO Location ( LocNo, FacNo, LocName )
VALUES ('L108', 'F107', 'Locker Room');
```

10.1 Change the location name for all locations of the swimming pool facility. The new location name should be “Door”. Your UPDATE statement should have a condition on facility name.

10.2 Delete the swimming pool facility and all related locations. You need two DELETE statements for this problem. The first DELETE statement for the *Location* table should have a condition on facility name. The second DELETE statement for the *Facility* table should have a condition on facility name.

11. List the unique number and name of employees who manage at least one event plans with all activities (setup, operation, and cleanup). For example, the result contains employee E1 if E1 manages five event plans with two plans of setup, one plan of operation, and two plans of cleanup. The result does not contain employee E2 if E2 manages six event plans with four plans of setup and two plans of operation. Do not use constant values for the activity column in your SELECT statement. Identify the problem type and words in the problem statement that match the text pattern before writing the SELECT statement. Hint: an advanced practice problem shares similarity with this problem.

12. List the plan number, line number, resource name, count of resources (*EventPlanLine.ResourceCnt*), location name, time start, and time end where the event is held at the “Basketball arena”, the event plan has activity of activity of “Operation”, and the

event plan has a work date in the period October 1 to December 31, 2022. Remember that Oracle and PostgreSQL use case sensitivity for text comparisons by default. Identify the problem type and words in the problem statement that match the text pattern before writing the SELECT statement.