Module 5 Problem Solutions

The problems use the Intercollegiate Athletics database as described in the background document. The course website also contains CREATE TABLE and INSERT statements for Oracle and PostgreSQL.

1. List the event number, date held, customer number, customer name, facility number, and facility name of 2022 events placed by Boulder customers.
2. List the customer number, customer name, event number, date held, facility number, facility name, and estimated audience cost per person (EstCost / EstAudience) for events held on 2022, in which the estimated cost per person is less than $0.2
3. List the customer number, customer name, and total estimated costs for Approved events. The total amount of events is the sum of the estimated cost for each event. Group the results by customer number and customer name.
4. For event plans with a work date in 2022, summarize the event plans managed by each employee and work date month. The result should include the employee number, employee name, month, count of event plans, and sum of the estimated cost of the associated event requests. For Oracle, you can use the EXTRACT function to extract the month of a date column. For PostgreSQL, you can use the DATE_PART function to extract the month of a date column.
5. Insert yourself as a new row in the *Customer* table.
6. Increase the rate by 10 percent of the resource with name nurse in the *ResourceTbl* table.
7. Delete the new row added to the *Customer* table.

Solutions

1.

```
SELECT EventNo, DateHeld, Customer.CustNo, CustName,
            Facility.FacNo, FacName
  FROM EventRequest, Customer, Facility
  WHERE City = 'Boulder'
       AND DateHeld BETWEEN '1-Jan-2022' AND '31-Dec-2022'
       AND EventRequest.CustNo = Customer.CustNo
       AND EventRequest.FacNo = Facility.FacNo;

SELECT EventNo, DateHeld, Customer.CustNo, CustName,
            Facility.FacNo, FacName
  FROM EventRequest INNER JOIN Customer
      ON EventRequest.CustNo = Customer.CustNo
           INNER JOIN Facility ON EventRequest.FacNo = Facility.FacNo
  WHERE City = 'Boulder'
       AND DateHeld BETWEEN '1-Jan-2022' AND '31-Dec-2022';

PostgreSQL solutions with an alternative date format
SELECT EventNo, DateHeld, Customer.CustNo, CustName,
            Facility.FacNo, FacName
  FROM EventRequest, Customer, Facility
  WHERE City = 'Boulder'
       AND DateHeld BETWEEN '2022-01-01' AND '2022-12-31'
       AND EventRequest.CustNo = Customer.CustNo
       AND EventRequest.FacNo = Facility.FacNo;

SELECT EventNo, DateHeld, Customer.CustNo, CustName,
            Facility.FacNo, FacName
  FROM EventRequest INNER JOIN Customer
       ON EventRequest.CustNo = Customer.CustNo
            INNER JOIN Facility ON EventRequest.FacNo = Facility.FacNo
  WHERE City = 'Boulder'
       AND DateHeld BETWEEN '2022-01-01' AND '2022-12-31';
```

2.

```
SELECT Customer.CustNo, CustName, EventNo,
            DateHeld, Facility.FacNo, FacName, EstCost/EstAudience AS AudCost
  FROM EventRequest, Customer, Facility
  WHERE DateHeld BETWEEN '1-Jan-2022' AND '31-Dec-2022'
       AND EstCost/EstAudience < 0.2
       AND EventRequest.CustNo = Customer.CustNo
       AND EventRequest.FacNo = Facility.FacNo;

SELECT Customer.CustNo, CustName, EventNo,
```

```
        DateHeld, Facility.FacNo, FacName, EstCost/EstAudience AS AudCost
  FROM EventRequest INNER JOIN Customer
      ON EventRequest.CustNo = Customer.CustNo
         INNER JOIN Facility ON EventRequest.FacNo = Facility.FacNo
  WHERE DateHeld BETWEEN '1-Jan-2022' AND '31-Dec-2022'
     AND EstCost/EstAudience < 0.2;

PostgreSQL solutions with an alternative date format
SELECT Customer.CustNo, CustName, EventNo,
        DateHeld, Facility.FacNo, FacName, EstCost/EstAudience AS AudCost
  FROM EventRequest, Customer, Facility
  WHERE DateHeld BETWEEN '2022-01-01' AND '2022-12-31'
      AND EstCost/EstAudience < 0.2
      AND EventRequest.CustNo = Customer.CustNo
      AND EventRequest.FacNo = Facility.FacNo;

SELECT Customer.CustNo, CustName, EventNo,
        DateHeld, Facility.FacNo, FacName, EstCost/EstAudience AS AudCost
  FROM EventRequest INNER JOIN Customer
     ON EventRequest.CustNo = Customer.CustNo
      INNER JOIN Facility ON EventRequest.FacNo = Facility.FacNo
  WHERE DateHeld BETWEEN '2022-01-01' AND '2022-12-31'
      AND EstCost/EstAudience < 0.2;


3.
SELECT Customer.CustNo, CustName, SUM(EstCost) AS TotEstCost
  FROM EventRequest, Customer
  WHERE Status = 'Approved'
      AND EventRequest.CustNo = Customer.CustNo
  GROUP BY Customer.CustNo, CustName;

SELECT Customer.CustNo, CustName, SUM(EstCost) AS TotEstCost
  FROM EventRequest INNER JOIN Customer
     ON EventRequest.CustNo = Customer.CustNo
  WHERE Status = 'Approved'
  GROUP BY Customer.CustNo, CustName;

4.
-- Oracle solution using the EXTRACT function
-- Cross product style
SELECT EventPlan.EmpNo, EmpName,
         EXTRACT(MONTH FROM WorkDate) AS WorkDateMonth,
         COUNT(*) AS CntEventPlans, SUM(EstCost) AS SumEstCost
FROM EventPlan, Employee, EventRequest
WHERE WorkDate BETWEEN '01-Dec-2022' and '31-Dec-2022'
```

```
  AND EventPlan.EmpNo = Employee.EmpNo
  AND EventPlan.EventNo = EventRequest.EventNo
GROUP BY EventPlan.EmpNo, EmpName, EXTRACT(MONTH FROM WorkDate);

-- Join operator style
SELECT EventPlan.EmpNo, EmpName,
            EXTRACT(MONTH FROM WorkDate) AS WorkDateMonth,
            COUNT(*) AS CntEventPlans, SUM(EstCost) AS SumEstCost
FROM EventPlan INNER JOIN Employee ON EventPlan.EmpNo = Employee.EmpNo
  INNER JOIN EventRequest ON EventPlan.EventNo = EventRequest.EventNo
WHERE WorkDate BETWEEN '01-Dec-2022' and '31-Dec-2022'
GROUP BY EventPlan.EmpNo, EmpName, EXTRACT(MONTH FROM WorkDate);

-- PostgreSQL solution using the Date_Part function
-- Cross product style
SELECT EventPlan.EmpNo, EmpName,
           Date_Part('month', WorkDate) AS WorkDateMonth,
           COUNT(*) AS CntEventPlans, SUM(EstCost) AS SumEstCost
FROM EventPlan, Employee, EventRequest
WHERE WorkDate BETWEEN '2022-01-01' and '2022-12-31'
  AND EventPlan.EmpNo = Employee.EmpNo
  AND EventPlan.EventNo = EventRequest.EventNo
GROUP BY EventPlan.EmpNo, EmpName, Date_Part('month', WorkDate);

-- Join operator style
SELECT EventPlan.EmpNo, EmpName,
           Date_Part('month', WorkDate) AS WorkDateMonth,
           COUNT(*) AS CntEventPlans, SUM(EstCost) AS SumEstCost
FROM EventPlan INNER JOIN Employee ON EventPlan.EmpNo = Employee.EmpNo
  INNER JOIN EventRequest ON EventPlan.EventNo = EventRequest.EventNo
WHERE WorkDate BETWEEN '2022-01-01' and '2022-12-31'
GROUP BY EventPlan.EmpNo, EmpName, Date_Part('month', WorkDate);

-- Date_Part function in the WHERE clause

SELECT EventPlan.EmpNo, EmpName,
            Date_Part('month', WorkDate) AS WorkDateMonth,
            COUNT(*) AS CntEventPlans, SUM(EstCost) AS SumEstCost
FROM EventPlan, Employee, EventRequest
WHERE Date_Part('year', WorkDate) = 2022
  AND EventPlan.EmpNo = Employee.EmpNo
  AND EventPlan.EventNo = EventRequest.EventNo
GROUP BY EventPlan.EmpNo, EmpName, Date_Part('month', WorkDate);
```

5.

```
INSERT INTO Customer
```

```
  (CustNo, CustName, Address, Internal, Contact, Phone, City, State, Zip)
VALUES ('C9999999', 'Michael Mannino', '123 Any Street', 'Y', 'Self', '720000',
          'Denver', 'CO', '80204');
```

6.

```
UPDATE Resourcetbl
  SET Rate = Rate * 1.1
  WHERE ResName = 'nurse';
```

7.

```
DELETE FROM Customer
  WHERE CustNo = 'C9999999';
```