# EXPERIMENT - 7

**PRE-LAB:**

1. What are the pseudo columns in SQL? Give some examples
2. What is the difference between NVL and NVL2 functions?
3. What is the difference between Nested Subquery and Correlated Subquery?
4. A relational schema for a train reservation database is given below. Passenger (pid, pname, age)

Reservation (pid, class, tid)

Table: Passenger Table : Reservation

|  |  |  |
| --- | --- | --- |
| pid | pname | age |
| 1 | Sachin | 65 |
| 2 | Rahul | 66 |
| 3 | Sourav | 67 |
| 4 | Anil | 69 |

|  |  |  |
| --- | --- | --- |
| pid | class | tid |
| 1 | AC | 8200 |
| 2 | AC | 8201 |
| 3 | SC | 8201 |
| 4 | AC | 8203 |
| 2 | SC | 8204 |
| 4 | AC | 8202 |

What pids are returned by the following SQL query for the above instance of the tables? and give the explanation

SELECT pid FROM Reservation WHERE class ‘AC’ AND EXISTS (SELECT \* FROM Passenger WHERE age > 65 AND Passenger. pid = Reservation.pid)

1. In domain relational calculus “there exist” can be expressed as?

6. The relation book (title, price) contains the titles and prices of different books. Assuming that no two books have the same price, what does the following SQL query list?

Select title From book as B Where (Select count(\*) from book as T Where T.price > B.price) < 5

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# IN-LAB:

Implement SQL Queries on Case Study 9 (**MILITARY DATABASE) NAVY: ARMY:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NID** | **Name** | **Rank** | **City** | **M**\_ID |
| 100 | Raju | C | Hyderabad | 600 |
| 101 | Rahul | A | Lahore | 601 |
| 102 | Bharath | B | Delhi | 600 |
| 103 | David | A | Mumbai | 600 |
| 104 | Kishore | C | Hyderabad | 602 |
| 105 | Kumar | C | Mumbai | 602 |
| 106 | Eswar | A | Delhi | 603 |
| 107 | Praveen | C | Hyderabad | 604 |
| 108 | Lohith | B | Delhi | 601 |
| 109 | Mohan | C | Delhi | 601 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AID** | **Name** | **Rank** | **City** | **M**\_ID |
| 200 | Arun | A | Delhi | 601 |
| 201 | Hari | B | Hyderabad | 601 |
| 202 | Gopi | C | Lahore | 602 |
| 203 | Jayanth | A | Delhi | 601 |
| 204 | Deepak | B | Mumbai | 600 |
| 205 | Nandu | C | Hyderabad | 600 |
| 206 | Mohan | A | Lahore | 603 |
| 207 | Kamal | B | Hyderabad | 605 |
| 208 | Gopal | A | Delhi | 602 |
| 209 | Raju | C | Delhi | 601 |

**AIRFORCE: MISSION:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AFID** | **Name** | **Rank** | **City** | **M**\_ID |
| 300 | Kalyan | B | Lahore | 601 |
| 301 | David | A | Delhi | 603 |
| 302 | Gagan | C | Hyderabad | 602 |
| 303 | Kiran | B | Delhi | 602 |
| 304 | Ramu | A | Lahore | 603 |
| 305 | Pramod | C | Mumbai | 601 |
| 306 | Amar | C | Delhi | 603 |
| 307 | Verma | C | Delhi | 604 |
| 308 | Naveen | B | Hyderabad | 602 |
| 309 | Charan | A | Hyderabad | 601 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MID** | **Name** | **M\_spot** | **T\_ID** | **Sol\_ID** | **Com\_Officer** |
| 600 | AAP | Delhi | 701 | 1 | 301 |
| 601 | GID | Lahore | 702 | 2 | 302 |
| 602 | CID | Mumbai | 703 | 3 | 201 |
| 603 | VIP | Bangalore | 704 | 4 | 206 |
| 604 | HIG | Kolkata | 705 | 5 | 207 |
| 605 | BBC | Shimla | 706 | 6 | 106 |
| 606 | ORA | Kashmir | 707 | 7 | 104 |
| 607 | XYZ | Lucknow | 708 | 8 | 103 |
| 608 | ABC | Chennai | 709 | 9 | 102 |

**PANTRY:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Year** | **Loc** | **Dept** | **Service\_Capa** |
| 900 | 2016 | Mumbai | Medical | 10 |
| 901 | 2015 | Delhi | Logistics | 20 |
| 902 | 2014 | Hyderabad | Stores | 30 |
| 903 | 2018 | Darjeeling | Sports | 40 |
| 904 | 2019 | Cuttack | Kitchen | 50 |
| 905 | 2011 | Kolkata | House keeping | 15 |

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**STORES:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SID** | **SNAME** | **AREA** | **CATEGORY** | **ITEMCAPACITY** | **HOLDCAPACITY** |
| 1111 | NAVY | NAVY CAMP | WEAPON | 25 | 50 |
| 1112 | ARMY | ARMY CAMP | GENERAL | 100 | 150 |
| 1113 | AIRFORCE | AIRFORCE  CAMP | WEAPON | 200 | 250 |

* 1. Create the required table with the constraints
  2. Write a SQL statement to display the details of officers whose rank is ‘C’.
  3. Write a SQL statement to fetch the count of navy officers who are not working in ‘Chennai ‘unit
  4. Write a SQL query to display joint operation done by navy and army
  5. Create a mission table with following information
  6. Create table named store and display all details stores with maximum capacity of 100 and above.
  7. Write a SQL query to display mission done by navy and weapons used by them
  8. Select the record from department table those who are working in medical section and pantry
  9. Delete the record who is age above 59 from department table.
  10. Display the weapons details group by design of year.
  11. Display the count of weapons in store
  12. Select the record whose mission is conducted in south zone
  13. Select the officer details of navy
  14. List the solider count details group by salary.
  15. replace the location of store of item capacity to 100 of store id is 2.

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POST-LAB:

1. The following unnormalized table named PRODUCT is transformed to first normal form (1NF) by splitting it into two tables which have X and Y rows (such that X <Y) respectively. Both the tables have Z columns.

\*Product-ID\* \*Colors\* \*Price\*

1 Red,Green 15.0

2 Blue 18.0

3 Yellow,Pink 2.5

What are the values of X, Y, Z? Enter these integers, each on a new line, in the text-box below. Do not leave any leading or trailing spaces.

1. The wizard in the SQL city got a list of house numbers in a database. Now he sorts all the house numbers and gives them a particular rank that starts from 1 based on their values in ascending order. Suppose that the house numbers are 145 , 60 and 82 then house no 60 gets rank 1 , house 82 gets rank 2 and house 145 gets rank 3. Now the wizard has to solve a complex problem. He has to count total pairs of house numbers (a,b) in the database such that they follow the following rules -
   * *a* is smaller than *b*
   * *a* is odd but *b* is even
   * rank of *a* is even and rank of *b* is odd

Input Format:

Table : houses

|  |  |
| --- | --- |
| Field | Type |
| house\_number | int |

Sample:

|  |
| --- |
| answer |
| 0 |

|  |
| --- |
| house\_number |
| 320 |
| 121 |
| 674 |
| 415 |

Output:

Explanation: There is no pair of houses that satisfies the given conditions

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1. You are given two sets. Set A = {1,2,3,4,5,6}

Set B = {2,3,4,5,6,7,8}

How many elements are present in ?

Only enter the correct integer in the answering box. Do not include any extra spaces, tabs or newlines.

1. You are given two sets. Set A = {1,2,3,4,5,6}

Set B = {2,3,4,5,6,7,8}

How many elements are present in A - B?

Only enter the correct integer in the answering box. Do not include any extra spaces, tabs or newlines.

1. Consider the following data table named Student. Student Name Number Sex

Ben 3412 M

Dan 1234 M

Nel 2341 F

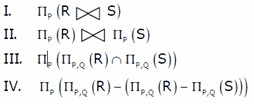
What is the count of rows returned in the following relational selection? σ(Number<3000)(Student)

Only enter a single integer. Do not include any extra spaces or newlines.

1. Let R and S be two relations with the following schema R (P,Q,R1,R2,R3)

S (P,Q,S1,S2)

Where {P, Q} is the key for both schemas. Which of the following queries are equivalent? (GATE 2008 CS exam).



1. Only I and II
2. Only I and III
3. Only I, II and III
4. Only I, III and IV