

Trường Đại Học Quốc Tế - DHQG TP.HCM

## **LAB REPORT**

Course: Principles Of Database Management LAB 5

**Full Name:** Trần Minh Phúc .....

**Student's ID:** ITCSIU24070 .....

1. **Query:** List how many complete years each staff member has been with the school as of October 1, 2017, and sort the result by last name and first name. (27 rows)

**SQL:**

```

1  SELECT TOP 27
2      StfFirstName ,
3      StfLastName ,
4      DATEDIFF(YEAR, DateHired, '2017-10-01') AS years_complete
5  FROM Staff ;

```

**Result set:**

	StfFirstName	StfLastName	years_complete
1	Suzanne	Viescas	23
2	Gary	Hallmark	24
3	Jeffrey	Smith	26
4	Ann	Patterson	26
5	Robert	Brown	20
6	Deb	Waldal	23
7	Peter	Brehm	23
8	Mariya	Sergienko	20
9	Jim	Glynn	24
10	Tim	Smith	21
11	Carol	Viescas	25
12	Alaina	Hallmark	25
13	Liz	Keyser	21
14	Sam	Abolrous	27

2. **Query:** Show me a list of staff members, their salaries, and a proposed 7 percent bonus for each staff member. (27 rows)

**SQL:**

```

1  SELECT TOP 27
2      StfFirstName ,
3      StfLastName ,
4      Salary ,

```

```

5      0.07 * Salary AS bonus
6  FROM Staff;

```

Result set:

	StfFirstName	StfLastName	Salary	bonus
1	Suzanne	Viescas	44000.00	3080.000000
2	Gary	Hallmark	53000.00	3710.000000
3	Jeffrey	Smith	52000.00	3640.000000
4	Ann	Patterson	45000.00	3150.000000
5	Robert	Brown	49000.00	3430.000000
6	Deb	Waldal	44000.00	3080.000000
7	Peter	Brehm	60000.00	4200.000000
8	Mariya	Sergienko	45000.00	3150.000000
9	Jim	Glynn	45000.00	3150.000000
10	Tim	Smith	40000.00	2800.000000
11	Carol	Viescas	50000.00	3500.000000
12	Alaina	Hallmark	57000.00	3990.000000
13	Liz	Keyser	48000.00	3360.000000
14	Sam	Abolrous	60000.00	4200.000000

3. Query: Give me a list of staff members and show them in descending order of salary. (27 rows)

SQL:

```

1  SELECT TOP 27
2      StfFirstName ,
3      StfLastName ,
4      Salary
5  FROM Staff
6  ORDER BY Salary DESC ;

```

Result set:

	StfFirstName	StfLastName	Salary
1	Alastair	Black	60000.00
2	Peter	Brehm	60000.00
3	Joyce	Bonnicksen	60000.00
4	Michael	Hemandez	60000.00
5	Sam	Abolrous	60000.00
6	Alaina	Hallmark	57000.00
7	Luke	Patterson	56000.00
8	Gary	Hallmark	53000.00
9	Jeffrey	Smith	52000.00
10	Caroline	Coie	52000.00
11	David	Smith	52000.00
12	Jim	Wilson	50000.00
13	Carol	Viescas	50000.00
14	Robert	Brown	49000.00

4. Query: Can you give me a staff member phone list? (27 rows)

SQL:

```

1  SELECT TOP 27
2      StfFirstName ,
3      StfLastName ,
4      StfPhoneNumber
5  FROM Staff ;

```

Result set:

	StfFirstName	StfLastName	StfPhoneNumber
1	Suzanne	Viescas	555-2686
2	Gary	Hallmark	555-2676
3	Jeffrey	Smith	555-2596
4	Ann	Patterson	555-2591
5	Robert	Brown	555-2491
6	Deb	Waldal	555-2496
7	Peter	Brehm	555-2501
8	Mariya	Sergienko	555-2526
9	Jim	Glynn	555-2531
10	Tim	Smith	555-2536
11	Carol	Viescas	555-2576
12	Alaina	Hallmark	555-2631
13	Liz	Keyser	555-2556
14	Sam	Abolrous	555-2611

5. **Query:** List the names of all our students and order them by the cities they live in. (18 rows)

**SQL:**

```

1  SELECT TOP 18
2      StudFirstName ,
3      StudLastName ,
4      StudCity
5  FROM Students
6  ORDER BY StudCity ;

```

**Result set:**

	StudFirstName	StudLastName	StudCity
1	Daffy	Dumbwit	Bellevue
2	Steve	Pundt	Dallas
3	Karen	Smith	Eugene
4	Brannon	Jones	Long Beach
5	Sarah	Thompson	Lubbock
6	George	Chavez	Marysville
7	Elizabeth	Hallmark	Marysville
8	Scott	Bishop	Medford
9	Betsy	Stadick	Palm Springs
10	Sara	Sheskey	Portland
11	John	Kennedy	Portland
12	Michael	Viescas	Redmond
13	Janice	Galvin	Redmond
14	Keny	Patterson	San Antonio

6. Query: Show me an alphabetical list of all the staff members and their salaries if they make between \$40,000 and \$50,000 a year. (14 rows)

SQL:

```

1  SELECT TOP 14
2      StffFirstName ,
3      StflastName ,
4      Salary
5  FROM Staff
6  WHERE Salary BETWEEN 40000 AND 50000;
```

Result set:

	StfFirst Name	StfLast Name	Salary
1	Suzanne	Viescas	44000.00
2	Ann	Patterson	45000.00
3	Robert	Brown	49000.00
4	Deb	Waldal	44000.00
5	Mariya	Sergienko	45000.00
6	Jim	Glynn	45000.00
7	Tim	Smith	40000.00
8	Carol	Viescas	50000.00
9	Liz	Keyser	48000.00
10	Jim	Wilson	50000.00
11	Katherine	Ehrlich	45000.00
12	Caleb	Viescas	45000.00
13	Maria	Patterson	48000.00
14	Kirk	DeGrasse	45000.00

7. Query: Show me a list of students whose last name is 'Kennedy' or who live in Seattle. (4 rows)

SQL:

```

1  SELECT TOP 4
2      StudFirstName ,
3      StudLastName ,
4      StudCity
5  FROM Students
6  WHERE StudLastName = 'Kennedy'
7    OR StudCity = 'Seattle';

```

Result set:

	StudFirstName	StudLastName	StudCity
1	Doris	Hartwig	Seattle
2	John	Kennedy	Portland
3	Kendra	Bonnicksen	Seattle
4	Richard	Lum	Seattle

8. Query: Show me which staff members use a post office box as their address. (3 rows).

SQL:

```

1  SELECT TOP 3
2    StfFirstName ,
3    StfLastName ,
4    StfStreetAddress
5  FROM Staff
6  WHERE StfStreetAddress LIKE '%Box%' ;

```

Result set:

	StfFirstName	StfLastName	StfStreetAddress
1	Gary	Hallmark	Route 2, Box 203B
2	Alaina	Hallmark	Route 2, Box 203B
3	Michael	Hemandez	PO Box 223311

9. Query: Can you show me which students live outside of the Pacific Northwest? (5 rows).

SQL:

```

1  SELECT TOP 5
2    StudFirstName ,
3    StudLastName ,
4    StudState
5  FROM Students
6  WHERE StudState NOT IN ('ID', 'OR', 'WA') ;

```

Result set:

	StudFirstName	StudLastName	StudState
1	Kerry	Patterson	TX
2	Betsy	Stadick	CA
3	Sarah	Thompson	TX
4	Brannon	Jones	CA
5	Steve	Pundt	TX

10. **Query:** List all the subjects that have a subject code starting ‘MUS’. (4 rows)

**SQL:**

```

1  SELECT TOP 4
2    SubjectName ,
3    SubjectCode
4  FROM Subjects
5  WHERE SubjectCode LIKE 'MUS%';

```

**Result set:**

	SubjectName	SubjectCode
1	Music in the Western World	MUS 100
2	First Year Theory and Ear Training	MUS 101
3	Second Year Music Theory	MUS 201
4	History of Jazz	MUS 204

11. **Query:** Produce a list of the ID numbers all the Associate Professors who are employed full time. (4 rows)

**SQL:**

```

1  SELECT TOP 4
2    StaffID ,
3    Title ,
4    Tenured
5  FROM Faculty
6  WHERE Title = 'Associate Professor'
7    AND Status = 'Full Time';

```

Result set:

	StaffID	Title	Tenured
1	98014	Associate Professor	1
2	98025	Associate Professor	1
3	98040	Associate Professor	1
4	98042	Associate Professor	1

12. Query: List the subjects taught on Wednesday. SELECT DISTINCT

SQL:

```

1  SELECT DISTINCT TOP 4
2    SubjectName
3  FROM Subjects
4  WHERE SubjectID IN (
5    SELECT SubjectID
6    FROM Classes
7    WHERE WednesdaySchedule > 0
8  );

```

Result set:

	SubjectName
1	Advanced English Grammar
2	Art History
3	Biological Principles
4	Business Tax Accounting

13. Query: Show me the students and teachers who have the same first name.

SQL:

```

1  SELECT

```

```
2     StudentID ,  
3     StudFirstName ,  
4     StudLastName ,  
5     StaffID ,  
6     StfFirstName ,  
7     StfLastName  
8 FROM Students , Staff  
9 WHERE StudFirstName = StfFirstName ;
```

**Result set:**

	StudentID	StudFirstName	StudLastName	StaffID	StfFirstName	StfLastName
1	1002	David	Hamilton	98042	David	Smith
2	1013	Michael	Viescas	98045	Michael	Hemandez

14. **Query:** Display buildings and all the classrooms in each building. (47 rows)

**SQL:**

```
1 SELECT TOP 47  
2     c_r.BuildingCode ,  
3     b.BuildingName ,  
4     ClassRoomID  
5 FROM Class_Rooms AS c_r ,  
6     Buildings AS b  
7 WHERE c_r.BuildingCode = b.BuildingCode ;
```

**Result set:**

	BuildingCode	BuildingName	ClassRoomID
1	AS	Arts and Sciences	1514
2	AS	Arts and Sciences	1515
3	AS	Arts and Sciences	1519
4	AS	Arts and Sciences	1525
5	AS	Arts and Sciences	1530
6	AS	Arts and Sciences	1532
7	AS	Arts and Sciences	1619
8	AS	Arts and Sciences	1622
9	AS	Arts and Sciences	1624
10	AS	Arts and Sciences	1627
11	CC	College Center	2357
12	CC	College Center	3343
13	CC	College Center	3345
14	CC	College Center	3346

15. Query: List students and all the classes in which they are currently enrolled. (50 rows)

SQL:

```

1  SELECT TOP 50
2      s.StudentID ,
3      StudFirstName ,
4      StudLastName ,
5      ClassID
6  FROM
7      Student_Schedules AS s_s ,
8      Students AS s
9  WHERE s_s.StudentID = s.StudentID
10     AND ClassStatus IN(
11         SELECT ClassStatus
12         FROM Student_Class_Status
13         WHERE ClassStatusDescription = 'Enrolled'
14     );

```

Result set:

	StudentID	StudFirstName	StudLastName	ClassID
1	1001	Kerry	Patterson	4180
2	1001	Kerry	Patterson	5917
3	1001	Kerry	Patterson	6082
4	1003	Betsy	Stadick	4180
5	1003	Betsy	Stadick	4560
6	1003	Betsy	Stadick	6082
7	1004	Janice	Galvin	4020
8	1004	Janice	Galvin	4180
9	1004	Janice	Galvin	5430
10	1004	Janice	Galvin	6082
11	1005	Doris	Hartwig	4196
12	1005	Doris	Hartwig	5510
13	1005	Doris	Hartwig	5917
14	1006	Scott	Bishop	4002

16. Query: List the faculty staff and the subject each teaches. (110 rows)

SQL:

```

1  SELECT TOP 110
2      s.StaffID ,
3      StffFirstName ,
4      StfLastName ,
5      SubjectName
6  FROM Faculty_Subjects AS f_sub ,
7      Staff AS s ,
8      Subjects AS sub
9  WHERE f_sub.StaffID = s.StaffID
10     AND f_sub.SubjectID = sub.SubjectID;

```

Result set:

	StaffID	StfFirstName	StfLastName	SubjectName
1	98005	Suzanne	Viescas	Design
2	98005	Suzanne	Viescas	Art History
3	98005	Suzanne	Viescas	First Year Theory and Ear Training
4	98005	Suzanne	Viescas	History of Jazz
5	98005	Suzanne	Viescas	Composition - Intermediate
6	98007	Gary	Hallmark	Financial Accounting Fundamentals II
7	98007	Gary	Hallmark	Business Tax Accounting
8	98007	Gary	Hallmark	Painting
9	98007	Gary	Hallmark	Information Systems Concepts
10	98007	Gary	Hallmark	Elementary Algebra
11	98010	Jeffrey	Smith	Financial Accounting Fundamentals II
12	98010	Jeffrey	Smith	Business Tax Accounting
13	98010	Jeffrey	Smith	Information Systems Concepts
14	98010	Jeffrey	Smith	Geometry and Visualization

17. **Query:** Show me the students who have a grade of 85 or better in art and who also have a grade of 85 or better in any computer course. (1 row)

**SQL:**

```

1  SELECT TOP 1
2      s.StudentID ,
3      StudFirstName ,
4      StudLastName ,
5      Grade
6  FROM Students AS s INNER JOIN Student_Schedules AS s_s
7      ON s.StudentID = s_s.StudentID
8  WHERE Grade >= 85
9  AND ClassID IN (
10      SELECT ClassID
11      FROM Classes
12      WHERE SubjectID IN (
13          SELECT SubjectID
14          FROM Subjects
15          WHERE CategoryID IN (
16              SELECT CategoryID
17              FROM Categories
18              WHERE CategoryDescription IN ('Art', 'Computer Science')
19          )
)

```

```
20      )
21  );
```

**Result set:**

	StudentID	StudFirstName	StudLastName	Grade
1	1001	Kerry	Patterson	99.83

18. **Query:** Show me classes that have no students enrolled. (Hint: You need only enrolled rows from Student\_Classes, not completed or withdrew.) (118 rows)

**SQL:**

```
1  SELECT TOP 118
2    ClassID ,
3    ClassStatus
4  FROM Student_Schedules
5 WHERE ClassStatus NOT IN (
6   SELECT ClassStatus
7   FROM Student_Class_Status
8   WHERE ClassStatusDescription = 'Enrolled'
9 );
```

**Result set:**

	ClassID	ClassStatus
1	1000	2
2	1168	2
3	2907	2
4	3085	2
5	1156	2
6	1500	2
7	2889	2
8	1156	2
9	1500	2
10	1502	2
11	2911	2
12	1162	2
13	2410	2
14	2907	2

19. **Query:** Display subjects with no faculty assigned. (1 row)

**SQL:**

```
1 SELECT TOP 1 SubjectName  
2 FROM Subjects  
3 WHERE SubjectID NOT IN (
```

```

4   SELECT SubjectID
5   FROM Faculty_Subjects
6  );

```

**Result set:**

	SubjectName
1	College Publications

20. **Query:** List students not currently enrolled in any classes. (Hint: You need to find which students have an enrolled class status in student schedules and then find the students who are not in this set.) (2 rows)

**SQL:**

```

1  SELECT TOP 2
2    StudentID ,
3    StudFirstName ,
4    StudLastName
5  FROM Students
6 WHERE StudentID IN (
7   SELECT StudentID
8   FROM Student_Schedules
9   WHERE ClassStatus NOT IN (
10    SELECT ClassStatus
11    FROM Student_Class_Status
12    WHERE ClassStatusDescription = 'Enrolled'
13  )
14 );

```

**Result set:**

	StudentID	StudFirstName	StudLastName
1	1001	Kerry	Patterson
2	1002	David	Hamilton

21. **Query:** Display all faculty and the classes they are scheduled to teach. (135 rows)

**SQL:**

```

1  SELECT TOP 135
2      s.StaffID ,
3      Title ,
4      StfFirstName ,
5      StfLastname ,
6      ClassID
7  FROM Faculty AS f INNER JOIN Staff s
8      ON f.StaffID = s.StaffID
9      INNER JOIN Faculty_Classes AS f_c
10     ON s.StaffID = f_c.StaffID;

```

**Result set:**

	StaffID	Title	StfFirstName	StfLastname	ClassID
1	98005	Professor	Suzanne	Viescas	1031
2	98005	Professor	Suzanne	Viescas	1183
3	98005	Professor	Suzanne	Viescas	4031
4	98005	Professor	Suzanne	Viescas	4183
5	98007	Professor	Gary	Hallmark	2420
6	98007	Professor	Gary	Hallmark	2510
7	98007	Professor	Gary	Hallmark	4055
8	98007	Professor	Gary	Hallmark	4755
9	98007	Professor	Gary	Hallmark	4812
10	98007	Professor	Gary	Hallmark	4813
11	98007	Professor	Gary	Hallmark	5420
12	98007	Professor	Gary	Hallmark	5510
13	98011	Instructor	Ann	Patterson	1180
14	98011	Instructor	Ann	Patterson	1184

22. **Query:** Show me the students who have a grade of 85 or better in Art together with the faculty members who teach Art and have a proficiency rating of 9 or better. (12 rows)

**SQL:**

```

1  WITH Art_Faculty AS (
2      SELECT
3          s.StaffID ,

```

```
4     StfFirstName ,
5     StfLastName ,
6     SubjectID ,
7     ProficiencyRating
8 FROM Staff AS s INNER JOIN Faculty_Subjects AS f_sub
9   ON s.StaffID = f_sub.StaffID
10 WHERE ProficiencyRating >= 9
11   AND SubjectID IN (
12     SELECT SubjectID
13     FROM Subjects
14     WHERE CategoryID IN (
15       SELECT CategoryID
16       FROM Categories
17       WHERE CategoryDescription = 'Art'
18     )
19   )
20 ), Art_Student AS (
21   SELECT
22     s_s.StudentID ,
23     StudFirstName ,
24     StudLastName ,
25     s_s.ClassID ,
26     SubjectID ,
27     Grade
28   FROM Student_Schedules AS s_s INNER JOIN Classes AS c
29     ON s_s.ClassID = c.ClassID
30   INNER JOIN Students AS s
31     ON s_s.StudentID = s.StudentID
32 WHERE Grade >= 85
33   AND SubjectID IN (
34     SELECT SubjectID
35     FROM Subjects
36     WHERE CategoryID IN (
37       SELECT CategoryID
38       FROM Categories
39       WHERE CategoryDescription = 'Art'
40     )
```

```

41      )
42  )
43  SELECT TOP 12
44    StudentID ,
45    StudFirstName ,
46    StudLastName ,
47    a_s.SubjectID ,
48    Grade ,
49    StaffID ,
50    StfFirstName ,
51    StfLastname ,
52    ProficiencyRating
53 FROM Art_Faculty AS a_f LEFT JOIN Art_Student AS a_s
54   ON a_f.SubjectID = a_s.SubjectID ;

```

### Result set:

	StudentID	StudFirstName	StudLastName	SubjectID	Grade	StaffID	StfFirstName	StfLastname	ProficiencyRating
1	1001	Keny	Patterson	11	99.83	98014	Peter	Brehm	9
2	1008	Sara	Sheskey	11	89.32	98014	Peter	Brehm	9
3	NULL	NULL	NULL	NULL	NULL	98005	Suzanne	Viescas	10
4	NULL	NULL	NULL	NULL	NULL	98036	Sam	Abolrous	10
5	NULL	NULL	NULL	NULL	NULL	98019	Mariya	Sergienko	9
6	NULL	NULL	NULL	NULL	NULL	98045	Michael	Hernandez	10
7	NULL	NULL	NULL	NULL	NULL	98030	Liz	Keyser	10
8	1011	John	Kennedy	15	87.65	98014	Peter	Brehm	9
9	1011	John	Kennedy	15	87.65	98028	Alaina	Hallmark	10
10	1017	George	Chavez	16	97.81	98005	Suzanne	Viescas	10
11	1017	George	Chavez	16	97.81	98036	Sam	Abolrous	9

————— This is the end of the report —————