

## Chapter 4

# Query Formulation (2) : Nested Query

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## Outline

- Type I nested queries
- Type II nested queries
- Nested queries in the FROM clause

## Type I Nested Queries

- Query inside a query
- Use in WHERE and HAVING conditions
- Similar to a nested procedure
- Executes one time
- No reference to outer query
- Also known as non-correlated or independent nested query

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## Type I Nested Query Examples I

Example 6 (Access): List finance faculty who teach IS courses.

```
SELECT FacSSN, FacLastName, FacDept
FROM Faculty
WHERE FacDept = 'FIN' AND FacSSN IN
  ( SELECT FacSSN FROM Offering
    WHERE CourseNo LIKE 'IS*' )
```

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## Type I Nested Query Examples II

Example 7 (Oracle): List finance faculty who teach 4 unit IS courses.

```
SELECT FacSSN, FacLastName, FacDept
FROM Faculty
WHERE FacDept = 'FIN' AND FacSSN IN
  ( SELECT FacSSN FROM Offering
    WHERE CourseNo LIKE 'IS%' AND CourseNo IN
      ( SELECT CourseNo FROM Course
        WHERE CrsUnits = 4 ) )
```

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## DELETE Example

- Use Type I nested queries to test conditions on other tables
- Use for UPDATE statements also

Example 8: Delete offerings taught by Leonard Vince.

```
DELETE FROM Offering
WHERE Offering.FacSSN IN
  ( SELECT FacSSN FROM Faculty
    WHERE FacFirstName = 'Leonard'
      AND FacLastName = 'Vince' )
```

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## Type II Nested Queries

- Similar to nested loops
- Executes one time for each row of outer query
- Reference to outer query
- Also known as correlated or variably nested query

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## Type II Nested Query Example

Example 9: Retrieve MS faculty who are not teaching in winter 2006.

```
SELECT FacSSN, FacLastName, FacDept
FROM Faculty
WHERE FacDept = 'MS' AND NOT EXISTS
  ( SELECT * FROM Offering
    WHERE OffTerm = 'WINTER'
      AND OffYear = 2006
      AND Faculty.FacSSN = Offering.FacSSN )
```

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## Nested FROM Query Example

Example 13: Retrieve the course number, course description, the number of offerings, and the average enrollment across offering.

```
SELECT T.CourseNo, T.CrsDesc,
       COUNT(*) AS NumOfferings,
       Avg(T.EnrollCount) AS AvgEnroll
FROM
  (SELECT Course.CourseNo, CrsDesc,
         Offering.OfferNo,
         COUNT(*) AS EnrollCount
   FROM Offering, Enrollment, Course
  WHERE Offering.OfferNo = Enrollment.OfferNo
        AND Course.CourseNo = Offering.CourseNo
   GROUP BY Course.CourseNo, CrsDesc,
            Offering.OfferNo) T
GROUP BY T.CourseNo, T.CrsDesc
```

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## Create New User

### ▪ Buat user baru di Oracle 10g XE :

1. Pilih **START | Oracle Database 10g Express Edition | Go To Database Homepage**
2. Login dengan username : **system**
3. Pilih tombol **Administration | Database Users | Create**
4. Isi data berikut ini, lalu akhiri dengan memilih tombol **Create**
5. Pilih menu **Logout**

Create Database User

Cancel Create

Username: tradesore

Password: ●●●

Confirm Password: ●●●

Expire Password: ☐

Account Status: Unlocked

Default Tablespace: USERS

Temporary Tablespace: TEMP

User Privileges

Roles:

☒ CONNECT ☒ RESOURCE ☒ DBA

Direct Grant System Privileges:

☐ CREATE DATABASE LINK ☐ CREATE MATERIALIZED VIEW ☐ CREATE PROCEDURE

☐ CREATE PUBLIC SYNONYM ☐ CREATE ROLE ☐ CREATE SEQUENCE

☐ CREATE SYNONYM ☒ CREATE TABLE ☐ CREATE TRIGGER

☐ CREATE TYPE ☐ CREATE VIEW

Check All Uncheck All

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# Run Dump File

## ▪ Jalankan file dump **TRADESTORE.SQL** :

1. Pilih **START** | Oracle Database 10g Express Edition | Run SQL Command Line
2. Ketik **CONNECT** [ENTER] pada **SQL PROMPT** (SQL >)
3. Login dengan username : **tradestore**
4. Ketik **START TRADESTORE.SQL** [ENTER] pada **SQL PROMPT**
5. Setelah file dump selesai di-eksekusi, ketik **EXIT** [ENTER] pada **SQL PROMPT**

```
SQL>Plus: Release 10.2.0.1.0 - Production on Fri Jan 18 10:17:57 2013
Copyright (c) 1982, 2005, Oracle. All rights reserved.

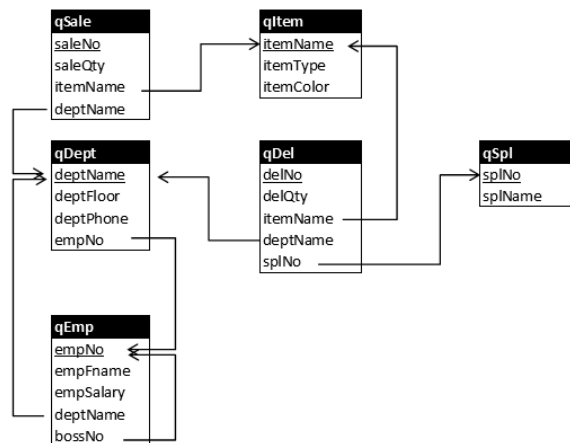
SQL> CONNECT
Enter user-name: TRADESTORE
Enter password:
Connected.
SQL> START TRADESTORE.SQL
```

## ▪ Mulai bekerja dengan user **TRADESTORE** :

1. Pilih **START** | Oracle Database 10g Express Edition | Go To Database Homepage
2. Login dengan username : **tradestore**
3. Pilih tombol **SQL** | SQL Commands

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# Tradestore Database



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## Latihan 2

1. List the green items of type C.
2. List the departments on the second floor.
3. Find the employees who are in a different department from their boss.
4. Find the number of items of type C sold by the departments on the third floor.
5. List the names of items delivered by each supplier. Arrange the report by supplier name, and within supplier name, list the items in alphabetical order.
6. List the names of each manager and their employees arranged by manager's name and employee's name within manager.
7. Find, for each department, its floor and the average salary in the department.
8. List the number of employees in each department.

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## Latihan 2

9. Find the items sold by at least two departments.
10. Find the items not delivered to the Books department.
11. Find the departments that have sold compasses and at least two other items.
12. Find the names of employees who make 10 percent less than the average salary.
13. Find the names of suppliers that do not supply compasses or geopositioning systems.
14. Find the suppliers that have never delivered a compass.
15. Whom does Todd manage?
16. List the names of employees who earn less than the minimum salary of the Marketing.

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