

Database System

Lecture 20

SQL Sub Languages

DRL Data Retrieval Language

DRL command

SELECT Statement

Having clause

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SQL Components Or SQL Sub Languages

DCL: Data Control Language

Example: Grant, Revoke.

DDL: Data Definition Language.

Example: Create, Alter, Drop, Rename and Truncate.

DML: Data Manipulation Language

Example: Insert, Update, Delete

DRL: Data Retrieval Language

Example: Select

TCL: Transaction Control Language

Example : Rollback, Commit, Savepoint

DRL-Data Retrieval Language

SELECT Statement :

Use a SELECT statement or subquery to retrieve data from one or more tables, object tables, views, object views.

Prerequisites

For you to select data from a table, view, object view, the object must be in your own schema or you must have the READ or SELECT privilege .

DRL-Data Retrieval Language

The Full syntax:

```
SELECT [DISTINCT]{* | {specific column}[[AS]c_alias]
        [, {specific column}[[AS] c_alias] ] ... }
FROM [schema.]{table | view }[t_alias]
     [, [schema.]{table | view }[t_alias] ] ...
[WHERE condition]
[GROUP BY expr[, expr] ...]
[HAVING condition]]
[{UNION | UNION ALL | INTERSECT | MINUS}
  SELECT command]
[ORDER BY {expr | position | c_alias } [ASC | DESC]
 [ NULLS FIRST | NULLS LAST ]
     [, {expr | position | c_alias } [ASC | DESC]
 [ NULLS FIRST | NULLS LAST ]...]
```

DRL-Data Retrieval Language

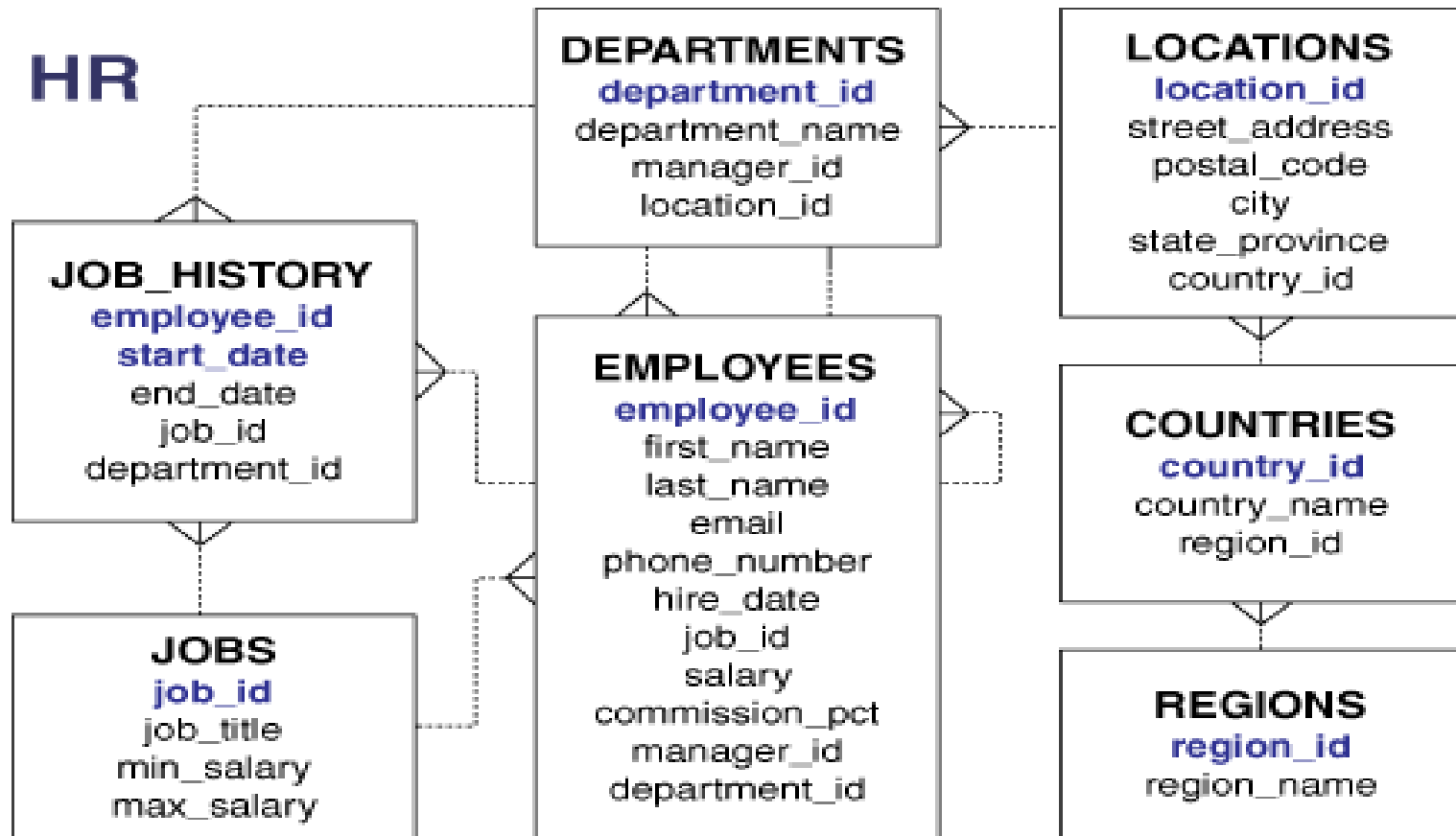
First of all will shows how to unlock the HR account and connect to Oracle Database as the user HR, who owns the HR sample schema that we use as example and tutorials in this lecture.

```
ALTER USER HR ACCOUNT UNLOCK IDENTIFIED  
BY password;
```

To display HR tables

```
SELECT * FROM tab;
```

DRL-Data Retrieval Language



HR - Entity Relation Diagram(ERD)

DRL-Data Retrieval Language

Formatting Columns in SQL-Plus

If the data in SQL-Plus displayed in multi lines and not sorted you can use Formatting Columns.

COL[UMN] {Column | Alias } [OPTIONS]

Examples:

```
COLUMN employee_id FORMAT 999
```

```
COLUMN last_name FORMAT A15
```

```
COLUMN salary FORMAT $999.99
```

```
COLUMN salary CLEAR
```

DRL-Data Retrieval Language

Syntax:

```
SELECT [DISTINCT] { * | {specific column} [[AS]
c_alias]
[, {specific column} [[AS] c_alias] ] ... }
FROM [schema.] {table|view } [t_alias]
    [, [schema.] {table|view } [t_alias] ] ...
[WHERE condition]
[GROUP BY expr[, expr] ...
```

[HAVING condition]

```
[ORDER BY {expr|position| c_alias }
[ASC|DESC] [ NULLS FIRST | NULLS LAST ]
    [, {expr|position| c_alias }
[ASC|DESC] [ NULLS FIRST | NULLS LAST ]...]
```


DRL-Data Retrieval Language

HAVING Clause

Use the HAVING clause to restrict the groups of returned rows to those groups for which the specified *condition* is TRUE. If you omit this clause, then the database returns summary rows for all groups.

Specify GROUP BY and HAVING after the *where_clause* and *hierarchical_query_clause*. If you specify both GROUP BY and HAVING, then they can appear in either order.

DRL-Data Retrieval Language

Examples of HAVING clause .

Using the HAVING Condition: To return the minimum and maximum salaries for the employees in each department whose lowest salary is less than \$5,000, issue the next statement:

```
SELECT department_id, MIN(salary), MAX (salary)
FROM employees
GROUP BY department_id
HAVING MIN(salary) < 5000
ORDER BY department_id;
```

DRL-Data Retrieval Language

Examples of HAVING clause .

The results will as below

DEPARTMENT_ID	MIN(SALARY)	MAX(SALARY)
10	4400	4400
30	2500	11000
50	2100	8200
60	4200	9000





Thank you

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