Introduction

Oracle Database 11*g*: Focus Areas

ORACLE 11*g*
DATABASE

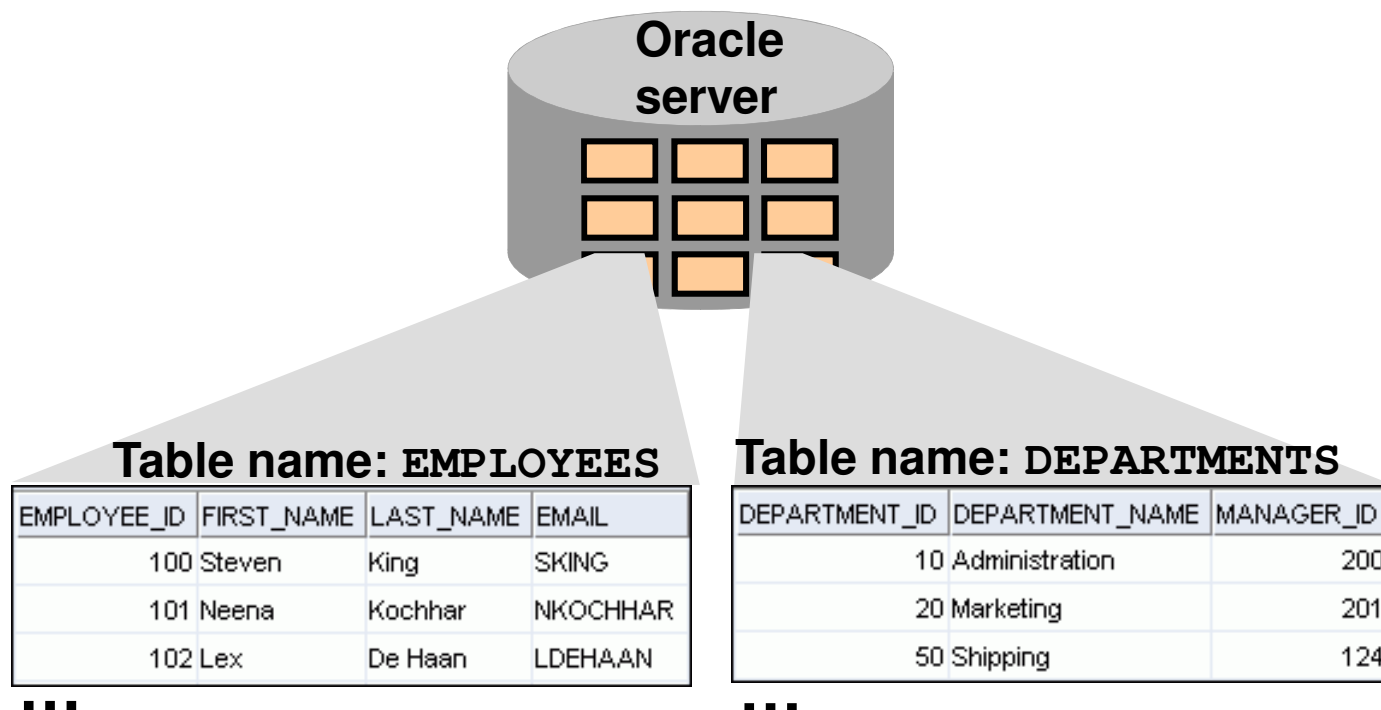| Infrastructure Grids	Information Management	Application Development

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Relational Database Concept

- Dr. E. F. Codd proposed the relational model for database systems in 1970.

- It is the basis for the relational database management system (RDBMS).

- The relational model consists of the following:
  - Collection of objects or relations
  - Set of operators to act on the relations
  - Data integrity for accuracy and consistency

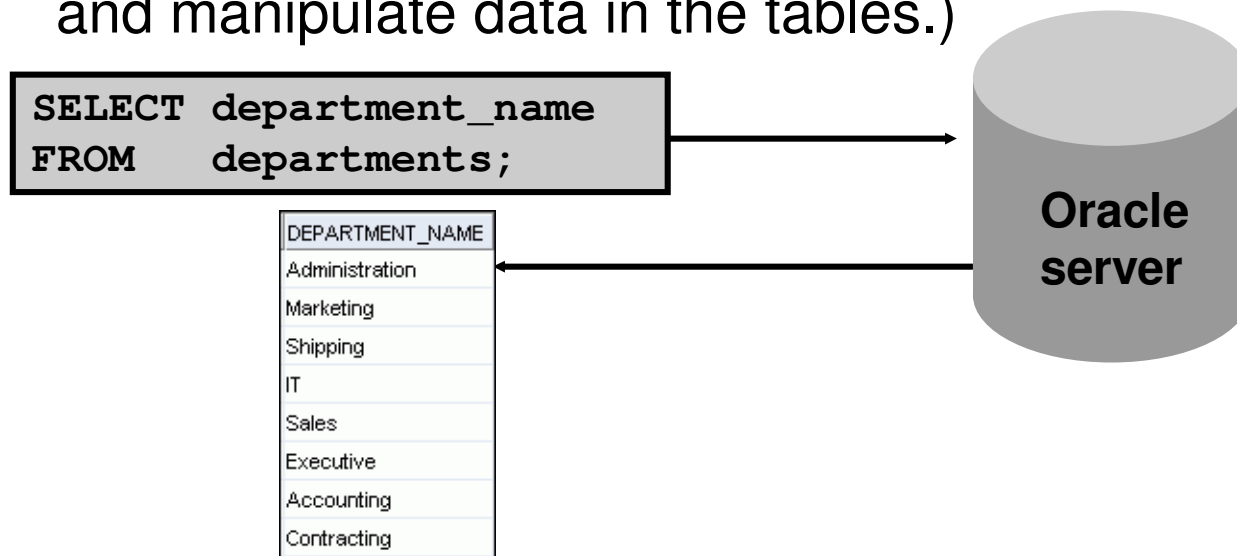**ORACLE**

Definition of a Relational Database

A relational database is a collection of relations or two-dimensional tables.

Table name: EMPLOYEES

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL
100	Steven	King	SKING
101	Neena	Kochhar	NKOCHHAR
102	Lex	De Haan	LDEHAAN

...

Table name: DEPARTMENTS

DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID
10	Administration	200
20	Marketing	201
50	Shipping	124

...

Using SQL to Query Your Database

Structured query language (SQL) is:

- The ANSI standard language for operating relational databases

- Efficient, easy to learn, and use

- Functionally complete (With SQL, you can define, retrieve, and manipulate data in the tables.)

```
SELECT  department_name
FROM    departments;
```

DEPARTMENT_NAME
Administration
Marketing
Shipping
IT
Sales
Executive
Accounting
Contracting

Oracle server

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SQL Statements

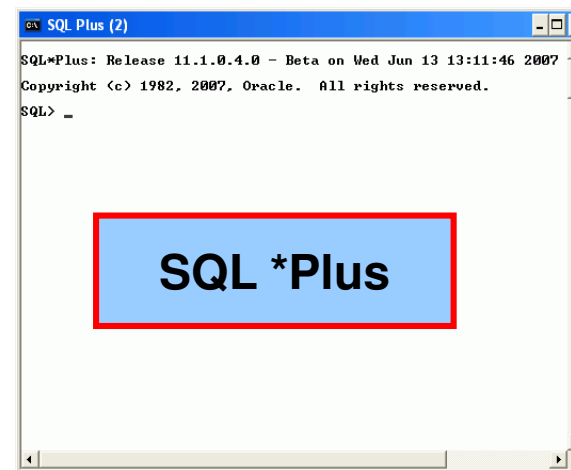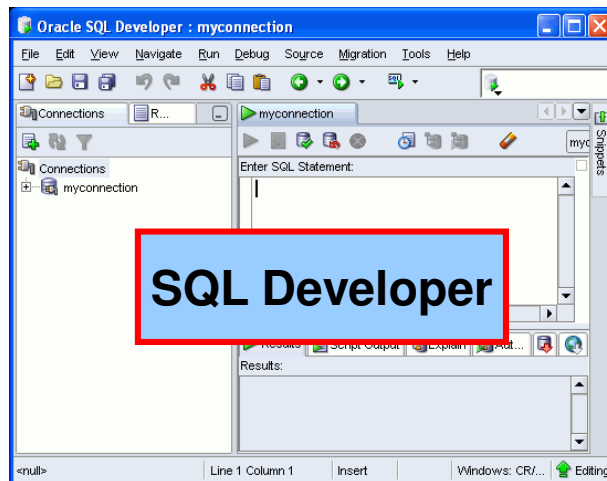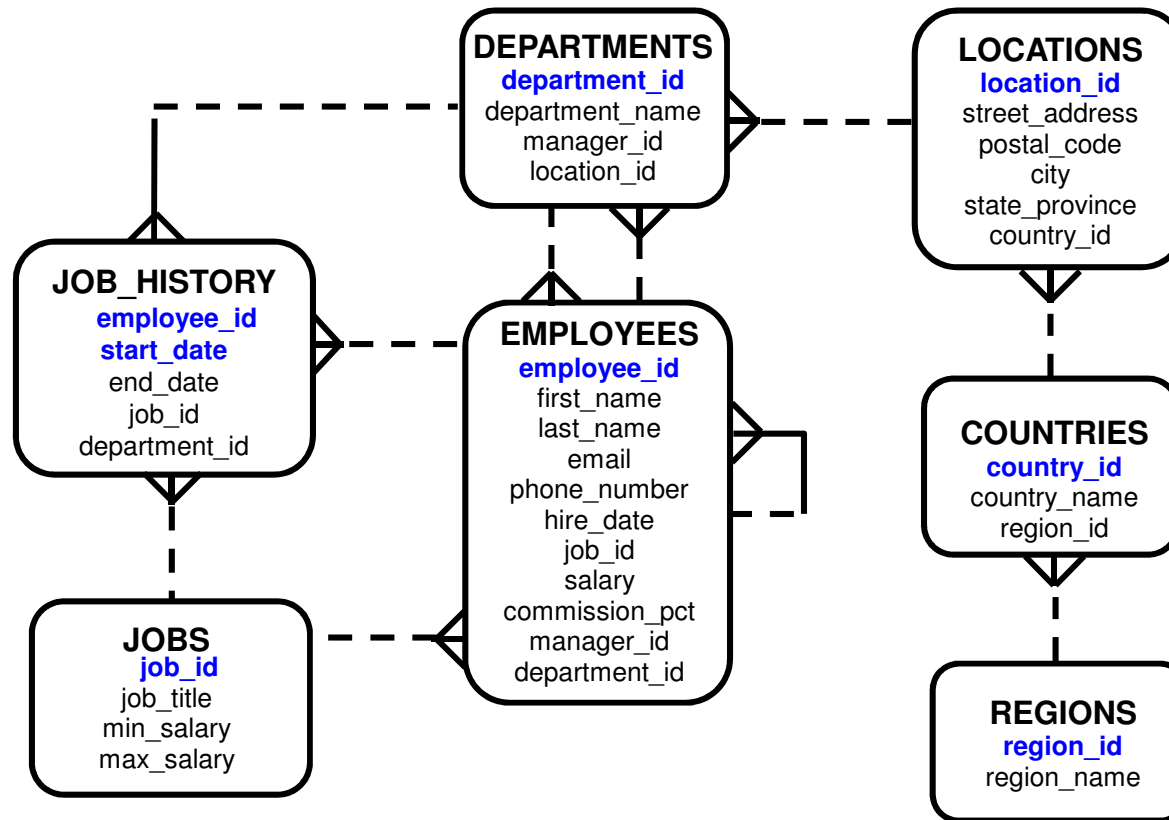|	
SELECT INSERT UPDATE DELETE MERGE	Data manipulation language (DML)
CREATE ALTER DROP RENAME TRUNCATE COMMENT	Data definition language (DDL)
GRANT REVOKE	Data control language (DCL)
COMMIT ROLLBACK SAVEPOINT	Transaction control

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Development Environments for SQL

There are two development environments for this course:

- Primary tool is Oracle SQL Developer
- SQL*Plus command line interface may also be used

SQL Developer

SQL *Plus

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The Human Resources (HR) Schema

DEPARTMENTS
department_id
department_name
manager_id
location_id

LOCATIONS
location_id
street_address
postal_code
city
state_province
country_id

JOB_HISTORY
employee_id
start_date
end_date
job_id
department_id

EMPLOYEES
employee_id
first_name
last_name
email
phone_number
hire_date
job_id
salary
commission_pct
manager_id
department_id

COUNTRIES
country_id
country_name
region_id

JOBS
job_id
job_title
min_salary
max_salary

REGIONS
region_id
region_name

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Tables Used in the Course

EMPLOYEES

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY	COMMISSION_PCT	DEPARTMENT_ID	EMAIL	PHONE_NUMBER	HIRE_DATE
100	Steven	King	24000	(null)	90	SKING	515.123.4567	17-JUN-87
101	Neena	Kochhar	17000	(null)	90	NKOCHHAR	515.123.4568	21-SEP-89
102	Lex	De Haan	17000	(null)	90	LDEHAAN	515.123.4569	13-JAN-93
103	Alexander	Hunold	9000	(null)	60	AHUNOLD	590.423.4567	03-JAN-90
104	Bruce	Ernst	6000	(null)	60	BERNST	590.423.4568	21-MAY-91
107	Diana	Lorentz	4200	(null)	60	DLORENTZ	590.423.5567	07-FEB-99
124	Kevin	Mourgos	5800	(null)	50	KMOURGOS	650.123.5234	16-NOV-99
141	Trenna	Rajs	3500	(null)	50	TRAJS	650.121.8009	17-OCT-95
142	Curtis	Davies	3100	(null)	50	CDAVIES	650.121.2994	29-JAN-97
					50	RMATOS	650.121.2874	15-MAR-98

DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID
10	Administration	200	1700
20	Marketing	201	1800
50	Shipping	124	1500
60	IT	103	1400
80	Sales	149	2500
90	Executive	100	1700
110	Accounting	205	1700
190	Contracting	(null)	1700

DEPARTMENTS

GRADE_LEVEL	LOWEST_SAL	HIGHEST_SAL
A	1000	2999
B	3000	5999
C	6000	9999
D	10000	14999
E	15000	24999
F	25000	40000

JOB_GRADES

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