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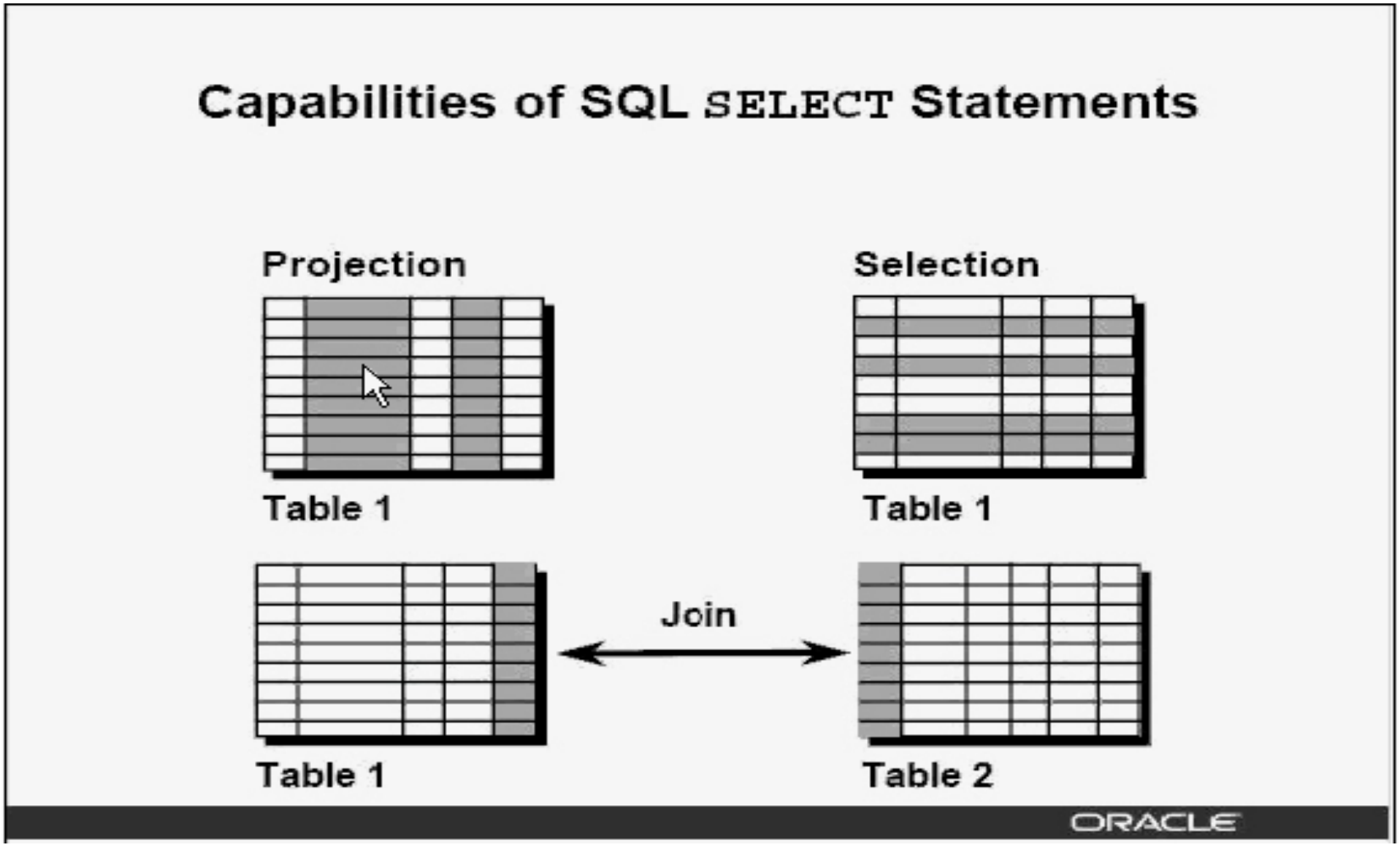
SQL SELECT Statement

Use a SELECT statement to retrieve data from one or more tables.



SQL SELECT Statement

- * : show all columns of departments table

SELECT * FROM departments;

- Instead of * we can write the name of all fields of department table

SELECT department_id,department_name,manager_id,location_id
FROM departments

DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID
10	Administration	200	1700
20	Marketing	201	1800
30	Purchasing	114	1700
40	Human Resources	203	2400
50	Shipping	121	1500
60	IT	103	1400
70	Public Relations	204	2700
80	Sales	145	2500
90	Executive	100	1700
100	Finance	108	1700

More than 10 rows available. Increase rows selector to view more rows.

SQL SELECT Statement

- SELECT determined Fields.

  SELECT location_id, department_id FROM departments

LOCATION_ID	DEPARTMENT_ID
1700	10
1800	20
1700	30
2400	40
1500	50
1400	60
2700	70
2500	80
1700	90
1700	100
More than 10 rows available. Increase rows selector to view more rows.	

Arithmetic Expression

- SELECT last_name,salary,salary+300
  From employees

LAST_NAME	SALARY	SALARY+300
King	24000	24300
Kochhar	17000	17300
De Haan	17000	17300
Hunold	9000	9300

- SELECT last_name,salary,12*salary+100
  From employees

LAST_NAME	SALARY	12*SALARY+100
King	24000	288100
Kochhar	17000	204100
De Haan	17000	204100

- SELECT last_name,salary,12*(salary+100)
  From employees

LAST_NAME	SALARY	12*(SALARY+100)
King	24000	289200
Kochhar	17000	205200
De Haan	17000	205200

NULL Value

- 0 (zero) means value.
- Space means character.
- Null means unknown value or missing value.
- Some fields may contains NULL value when there is no UNNULL constraint on it.

SELECT last_name,job_id,salary,commission_pct
From employees

LAST_NAME	JOB_ID	SALARY	COMMISSION_PCT
King	AD_PRES	24000	-
Kochhar	AD_VP	17000	-
De Haan	AD_VP	17000	-

- Any arithmetic expression on NULL values tend to Null

SELECT last_name,job_id,salary,12*salary*commission_pct
From employees

LAST_NAME	JOB_ID	SALARY	12*SALARY*COMMISSION_PCT
King	AD_PRES	24000	-
Kochhar	AD_VP	17000	-
De Haan	AD_VP	17000	-

ALIAS

SELECT last_name as name,commission_pct comm

From employees

NAME	COMM
King	-
Kochhar	-
De Haan	-

SELECT last_name "Name",salary * 12 "Annual Salary"

From employees

Name	Annual Salary
King	288000
Kochhar	204000
De Haan	204000

Write as or put “” for alias

Concatenation Operator

```
SELECT last_name || job_id as "Employees"
 From employees
```

Employees
KingAD_PRES
KochharAD_VP
De HaanAD_VP

- Using Literal Character String

```
 SELECT last_name || ' is a ' || job_id as "Employees"
 From employees
```

Employees
King is a AD_PRES
Kochhar is a AD_VP
De Haan is a AD_VP

```
SELECT last_name || ': 1 Month Salary=' || salary monthly
 From employees
```

MONTHLY
King: 1 Month Salary=24000
Kochhar: 1 Month Salary=17000
De Haan: 1 Month Salary=17000

Duplicate Rows

SELECT department_id From employees

DEPARTMENT_ID
90
90
90
60
60

SELECT DISTINCT department_id
From employees

DEPARTMENT_ID
100
30
-
90

SELECT DISTINCT department_id,job_id
From employees

DEPARTMENT_ID	JOB_ID
110	AC_ACCOUNT
90	AD_VP
50	ST_CLERK

DESCRIBE

DESC employees

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEES	EMPLOYEE_ID	Number	-	6	0	1	-	-	Primary key of employees table.
	FIRST_NAME	Varchar2	20	-	-	-	✓	-	First name of the employee. A not null column.
	LAST_NAME	Varchar2	25	-	-	-	-	-	Last name of the employee. A not null column.
	EMAIL	Varchar2	25	-	-	-	-	-	Email id of the employee
	PHONE_NUMBER	Varchar2	20	-	-	-	✓	-	Phone number of the employee; includes country co area code
	HIRE_DATE	Date	7	-	-	-	-	-	Date when the employee started on this job. A not n column.

SELECT * FROM tab

TNAME	TABTYPE	CLUSTERID
REGIONS	TABLE	-
COUNTRIES	TABLE	-
LOCATIONS	TABLE	-
DEPARTMENTS	TABLE	-
JOBS	TABLE	-
EMPLOYEES	TABLE	-
JOB_HISTORY	TABLE	-
EMP_DETAILS_VIEW	VIEW	-

SQL Command Line or SQL*PLUS

```
SQL> connect hr/hr
Connected
SQL> select * from tab;
SQL> DESC departments;
SQL> SELECT * FROM departments;
SQL> DESC employees;
SQL> SELECT employee_id,last_name,job_id,hire_date “STARTDATE”
       2 FROM Employee;
SQL> SAVE c:/lab1.sql
       created file c:/lab1.sql
SQL> GET c:/lab1.sql
       1  SELECT employee_id,last_name,job_id,hire_date “STARTDATE”
       2* FROM Employee;
SQL>/
```

SQL Command Line or SQL*PLUS

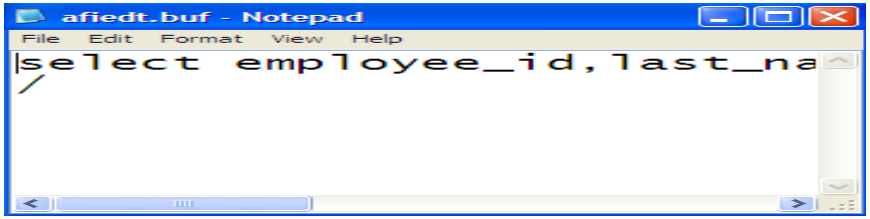
SQL> SELECT DISTINCT job_id FROM employees;

SQL> GET c:/lab1.sql

```
1  SELECT employee_id,last_name,job_id,hire_date “STARTDATE”
2* FROM Employee;
```

SQL>EDIT

- Change the query line then save the file



SQL>/

SQL> SELECT last_name || ‘ , ‘ || Job_id “Employee and Title” FROM

```
2 employees;
```

RESTRICTING AND SORTING DATA

SELECT with WHERE Statement

SELECT employee_id,last_name,job_id,department_id from employees
WHERE department_id=90

EMPLOYEE_ID	LAST_NAME	JOB_ID	DEPARTMENT_ID
100	King	AD_PRES	90
101	Kochhar	AD_VP	90
102	De Haan	AD_VP	90

SELECT last_name,job_id,department_id from employees
WHERE job_id='SA_REP‘

- job_id data is case sensitive (‘SA_REP’)

LAST_NAME	JOB_ID	DEPARTMENT_ID
Tucker	SA_REP	80
Bernstein	SA_REP	80
Hall	SA_REP	80
Olsen	SA_REP	80
Cambrault	SA_REP	80
Tuvault	SA_REP	80

SELECT last_name,job_id,department_id from employees
WHERE last_name='WHALEN'

no data found

COMPARISON PARAMETERS

SELECT last_name,salary from employees

WHERE salary<=3000

LAST_NAME	SALARY
Baida	2900
Tobias	2800
Himuro	2600

SELECT last_name,salary from employees

WHERE salary between 2500 and 3500

LAST_NAME	SALARY
Khoo	3100
Baida	2900
Tobias	2800

SELECT last_name,salary from employees

WHERE salary >=2500 and salary<= 3500

LAST_NAME	SALARY
Khoo	3100
Baida	2900
Tobias	2800

COMPARISON PARAMETERS

SELECT employee_id,last_name,salary,manager_id FROM employees
WHERE manager_id IN (100,101,102)

EMPLOYEE_ID	LAST_NAME	SALARY	MANAGER_ID
101	Kochhar	17000	100
102	De Haan	17000	100
114	Raphaely	11000	100

SELECT employee_id,last_name,salary,manager_id FROM employees
WHERE manager_id =101 or manager_id =102 or manager_id =103

SELECT employee_id,last_name,salary,manager_id FROM employees
WHERE last_name IN ('Hartstein','Vargas')

EMPLOYEE_ID	LAST_NAME	SALARY	MANAGER_ID
201	Hartstein	13000	100
144	Vargas	2500	124

To use IN u have to write attrib. name but for using exist it’s need not

COMPARISON PARAMETERS

SELECT first_name FROM employees

WHERE first_name like 'S%‘

FIRST_NAME
Sundar
Shelli
Sarah

SELECT last_name,hire_date FROM employees

WHERE hire_date like '95%‘

LAST_NAME	HIRE_DATE
Khoo	95-05-18
Kaufling	95-05-01
Ladwig	95-07-14
Rajs	95-10-17

SELECT last_name FROM employees

WHERE last_name like '_o%'

LAST_NAME
Colmenares
Doran
Fox

COMPARISON PARAMETERS

```
SELECT last_name,job_id FROM employees
WHERE job_id like '%SA\_%'ESCAPE'\''
```

LAST_NAME	JOB_ID
Russell	SA_MAN
Partners	SA_MAN
Errazuriz	SA_MAN

```
SELECT last_name,manager_id FROM employees
WHERE manager_id is null
```

LAST_NAME	MANAGER_ID
King	-

```
SELECT last_name,job_id,commission_pct FROM employees
WHERE commission_pct is null
```

LAST_NAME	JOB_ID	COMMISSION_PCT
King	AD_PRES	-
Kochhar	AD_VP	-
De Haan	AD_VP	-

LOGICAL PARAMETERS

AND	TRUE	FALSE	NULL
TRUE	TRUE	FALSE	NULL
FALSE	FALSE	FALSE	FALSE
NULL	NULL	FALSE	NULL

SELECT employee_id,last_name,job_id,salary FROM employees
WHERE salary>=10000 AND job_id like '%MAN%'

EMPLOYEE_ID	LAST_NAME	JOB_ID	SALARY
114	Raphaely	PU_MAN	11000
145	Russell	SA_MAN	14000
146	Partners	SA_MAN	13500

LOGICAL PARAMETERS

OR	TRUE	FALSE	NULL
TRUE	TRUE	TRUE	TRUE
FALSE	TRUE	FALSE	NULL
NULL	TRUE	NULL	NULL

SELECT employee_id,last_name,job_id,salary FROM employees
WHERE salary>=10000 OR job_id like '%MAN%'

EMPLOYEE_ID	LAST_NAME	JOB_ID	SALARY
100	King	AD_PRES	24000
101	Kochhar	AD_VP	17000
102	De Haan	AD_VP	17000

LOGICAL PARAMETERS

SELECT last_name,job_id FROM employees
where job_id NOT IN ('IT_PROG‘)

LAST_NAME	JOB_ID
King	AD_PRES
Kochhar	AD_VP
De Haan	AD_VP

- **NOT can be used with BETWEEN and IS NULL**

Rules of Precedence

Rules of Precedence

Order Evaluated	Operator
1	Arithmetic operators
2	Concatenation operator
3	Comparison conditions
4	IS [NOT] NULL, LIKE, [NOT] IN
5	[NOT] BETWEEN
6	NOT logical condition
7	AND logical condition
8	OR logical condition

Override rules of precedence by using parentheses.

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LOGICAL PARAMETERS

```
SELECT employee_id,last_name,job_id,salary FROM employees
WHERE job_id='SA_REP' OR job_id='SA_PRES' AND salary>1500
```

EMPLOYEE_ID	LAST_NAME	JOB_ID	SALARY
100	King	AD_PRES	24000
150	Tucker	SA_REP	10000
151	Bernstein	SA_REP	9500

```
SELECT employee_id,last_name,job_id,salary FROM employees
WHERE (job_id='SA_REP' OR job_id='AD_PRES') AND salary>15000
```

EMPLOYEE_ID	LAST_NAME	JOB_ID	SALARY
100	King	AD_PRES	24000

ORDER BY

SELECT last_name,job_id,department_id,hire_date FROM employees ORDER BY hire_date

LAST_NAME	JOB_ID	DEPARTMENT_ID	HIRE_DATE
King	AD_PRES	90	87-06-17
Whalen	AD_ASST	10	87-09-17
Kochhar	AD_VP	90	89-09-21

SELECT last_name,job_id,department_id,hire_date FROM employees ORDER BY hire_date DESC

LAST_NAME	JOB_ID	DEPARTMENT_ID	HIRE_DATE
Kumar	SA_REP	80	00-04-21
Banda	SA_REP	80	00-04-21
Ande	SA_REP	80	00-03-24

ORDER BY

SELECT last_name,salary FROM employees
ORDER BY 2 DESC

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000

SELECT employee_id,last_name,salary*12 as annual FROM employees
ORDER BY annual

EMPLOYEE_ID	LAST_NAME	ANNUAL
132	Olson	25200
128	Markle	26400
136	Philtanker	26400

ORDER BY

SELECT last_name,department_id,salary FROM employees
ORDER BY department_id,salary

LAST_NAME	DEPARTMENT_ID	SALARY
Whalen	10	4400
Fay	20	6000
Hartstein	20	13000

SELECT last_name,department_id,salary FROM employees
ORDER BY department_id,salary DESC

LAST_NAME	DEPARTMENT_ID	SALARY
Whalen	10	4400
Hartstein	20	13000
Fay	20	6000

SELECT last_name,salary FROM employees
ORDER BY department_id,salary DESC

LAST_NAME	SALARY
Whalen	4400
Hartstein	13000
Fay	6000

EXERCISE

```
SELECT last_name,salary FROM employees
WHERE salary NOT BETWEEN 5000 and 12000

SELECT last_name,job_id,hire_date FROM employees
WHERE hire_date BETWEEN '1998/02/20' AND '1998/05/01‘

SELECT last_name,department_id,salary FROM employees
WHERE department_id IN (20,50) AND salary BETWEEN 5000 AND 12000
ORDER BY last_name

SELECT last_name,hire_date FROM employees
WHERE hire_date LIKE '95%'
```

EXERCISE

SELECT last_name,job_id FROM employees
WHERE manager_id IS NULL

SELECT last_name,salary,commission_pct FROM employees
WHERE commission_pct is NOT NULL
ORDER BY commission_pct DESC,salary DESC

SELECT last_name FROM employees
WHERE last_name LIKE '__a%'

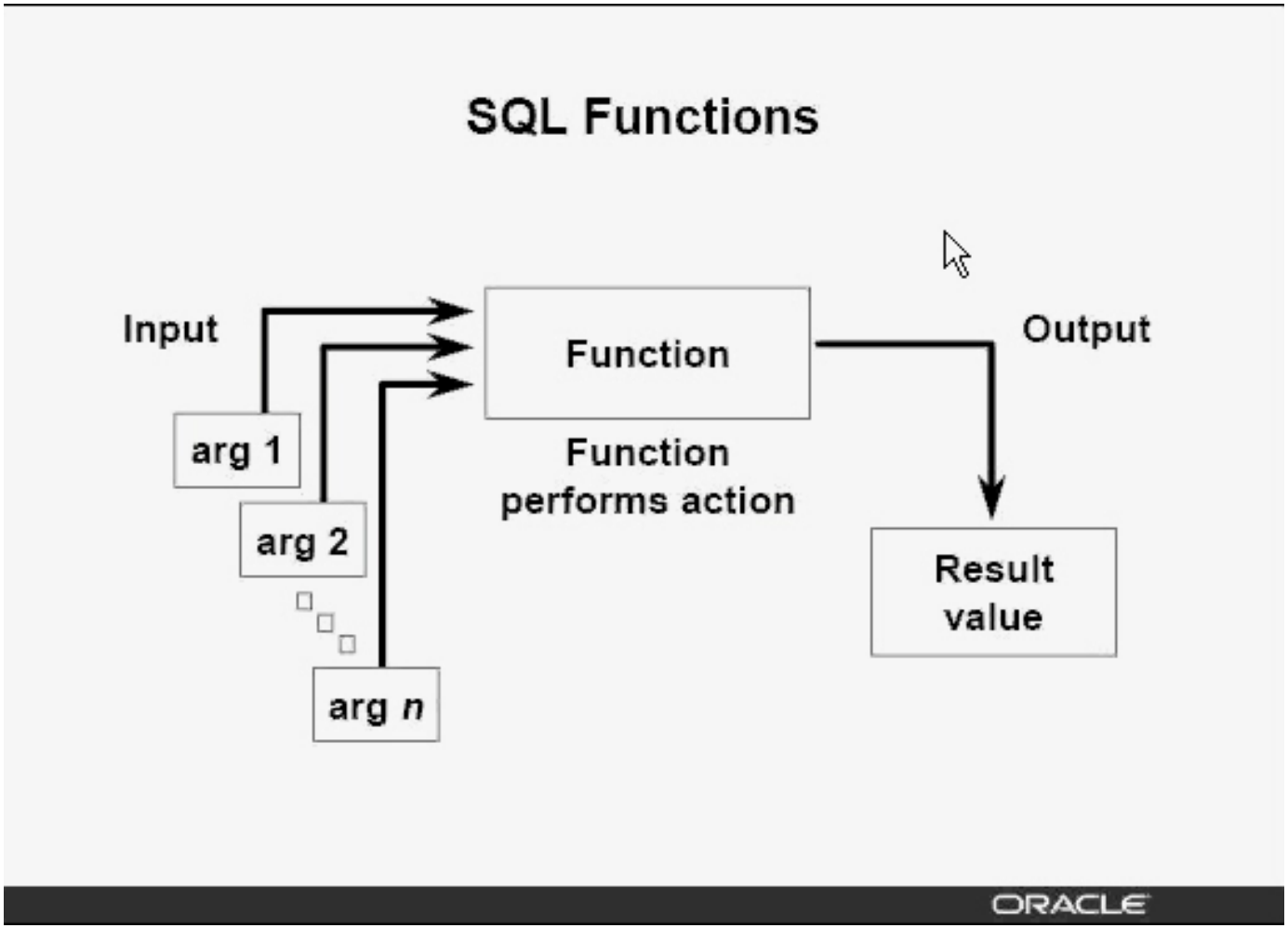
SELECT last_name FROM employees
WHERE last_name LIKE '%a%' AND last_name LIKE '%e%'

SELECT last_name,job_id,salary FROM employees
WHERE job_id IN ('SA_REP','ST_CLERK') AND salary NOT IN (2500,3500,7000)

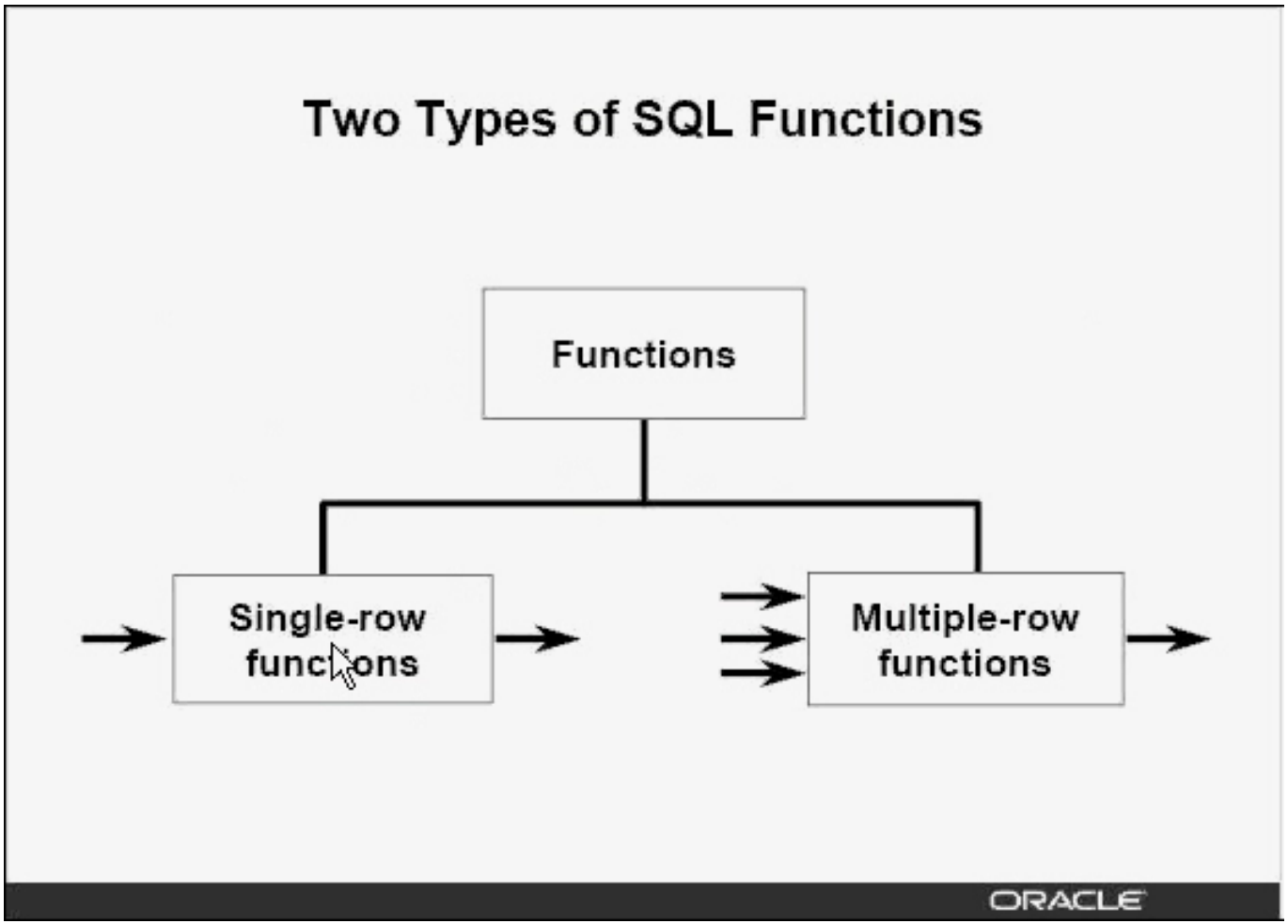
- find the employee's first_name and job_ID where name's they are begin with “B” and salary's is more than (5000), and sorting by the first_name

ناوی یەکەمی ئەم فەرمانبەرانە و ژمارەی کارەکانیان نیشان بدە کاتێك ناوەکانیان بە پیتی “B” دەست پێ بکات وە موچەیان لە (5000) زیاتر بێت وە لە هەمان کاتدا ڕێکیان بخە بە گوێرەی ناوی یەکەم

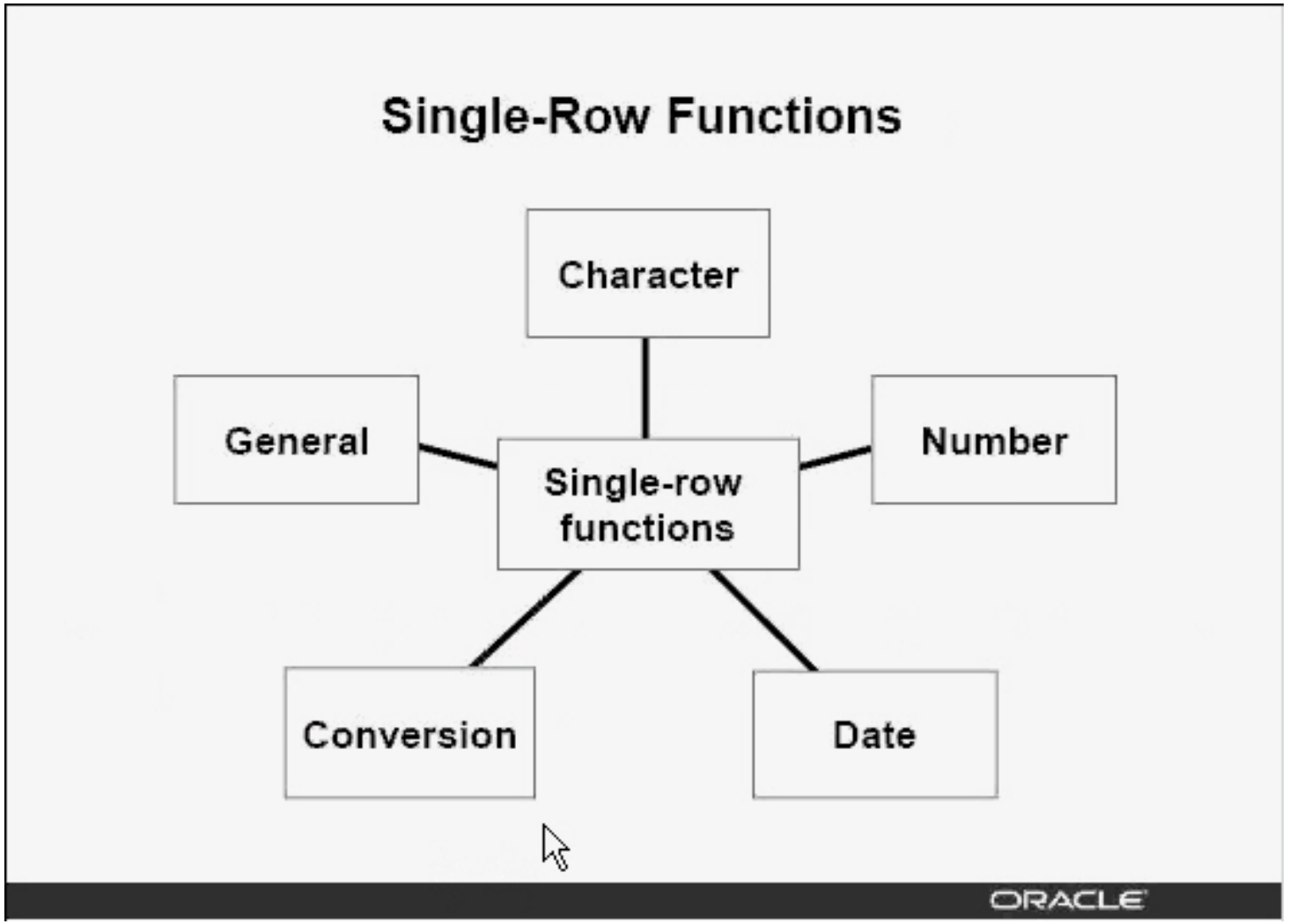
Single Row Functions



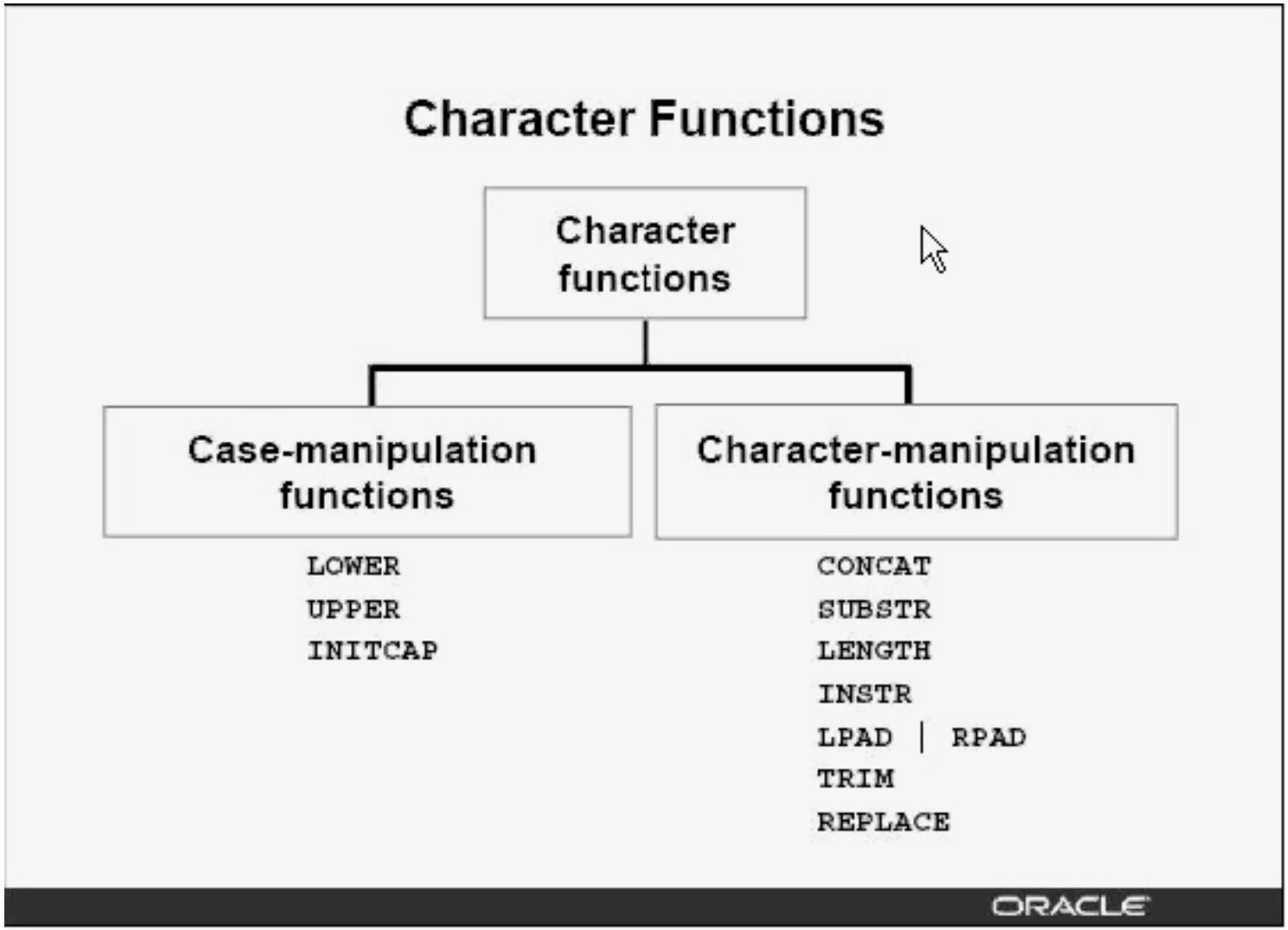
Types of SQL Functions



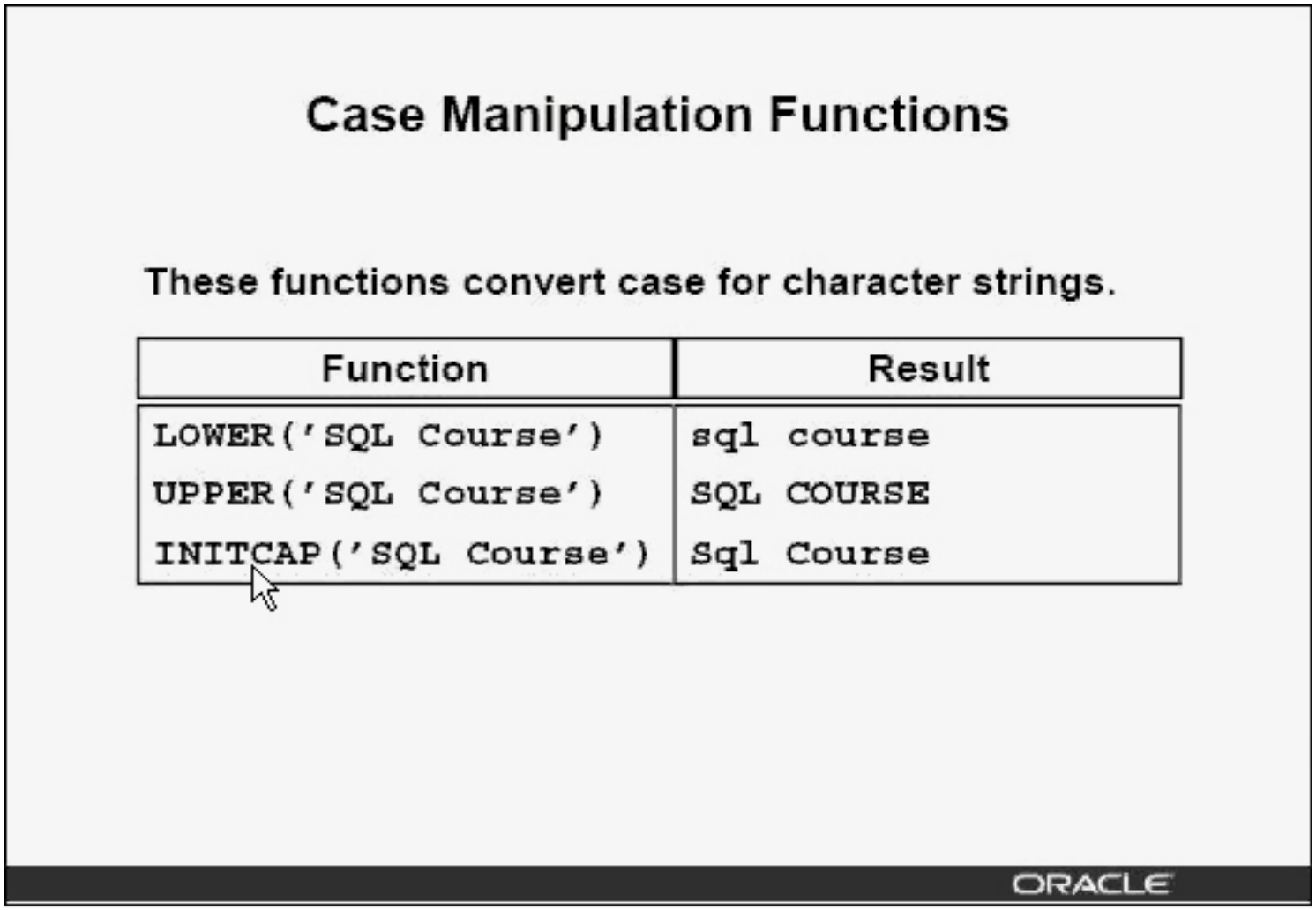
Single Row Functions



Character Functions



Case Manipulation Functions



Single Row Functions

```
SELECT employee_id,upper(last_name),department_id
FROM employees
WHERE last_name='higgins‘
```

no data found

```
SELECT employee_id,upper(last_name),department_id
FROM employees
WHERE lower(last_name)='higgins‘
```

EMPLOYEE_ID	UPPER(LAST_NAME)	DEPARTMENT_ID
205	HIGGINS	110

Character-Manipulation Functions

Character-Manipulation Functions

These functions manipulate character strings:

Function	Result
CONCAT('Hello', 'World')	HelloWorld
SUBSTR('HelloWorld',1,5)	Hello
LENGTH('HelloWorld')	10
INSTR('HelloWorld', 'W')	6
LPAD(salary,10,'*')	*****24000
RPAD(salary, 10, '*')	24000*****
TRIM('H' FROM 'HelloWorld')	elloWorld

Character-Manipulation Functions

```
SELECT employee_id,CONCAT(first_name,last_name) NAME,
job_id,LENGTH(last_name),
INSTR(last_name,'a') "contains 'a'?"
FROM employees
WHERE substr(job_id,4)='REP'
```

EMPLOYEE_ID	NAME	JOB_ID	LENGTH(LAST_NAME)	Contains 'a'?
150	PeterTucker	SA_REP	6	0
151	DavidBernstein	SA_REP	9	0
152	PeterHall	SA_REP	4	2

```
SELECT employee_id,CONCAT(first_name,last_name) NAME,
job_id,LENGTH(last_name),
INSTR(last_name,'a') "contains 'a'?"
FROM employees
WHERE substr(last_name,-1,1)='n'
```

EMPLOYEE_ID	NAME	JOB_ID	LENGTH(LAST_NAME)	Contains 'a'?
102	LexDe Haan	AD_VP	7	5
105	DavidAustin	IT_PROG	6	0
110	JohnChen	FI_ACCOUNT	4	0

Replace Function

Select replace (‘zanko123’,’123’) from dual

Result is : zanko

Select replace (‘zanko123’,’123’,’sul’) from dual

Result is : zankosul

select replace(123,2,4) from dual

Result is : 143

select replace(123,2) from dual

Result is : 13

Number Functions

Number Functions

- ROUND: Rounds value to specified decimal

  ROUND(45.926, 2) → 45.93

- TRUNC: Truncates value to specified decimal

  TRUNC(45.926, 2) → 45.92

- MOD: Returns remainder of division

  MOD(1600, 300) → 100

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Number Functions

```
SELECT ROUND(45.923,2),ROUND(45.923,0),ROUND(45.923,-1)
FROM dual
```

ROUND(45.923,2)	ROUND(45.923,0)	ROUND(45.923,-1)
45,92	46	50

```
SELECT TRUNC(45.923,2),TRUNC(45.923,0),TRUNC(45.923,-1)
FROM dual
```

TRUNC(45.923,2)	TRUNC(45.923,0)	TRUNC(45.923,-1)
45,92	45	40

```
SELECT MOD(9,2)
FROM dual
```

MOD(9,2)
1

```
SELECT last_name,salary,MOD(salary,5000)
FROM employees
WHERE job_id='SA_REP'
```

LAST_NAME	SALARY	MOD(SALARY,5000)
Tucker	10000	0
Bernstein	9500	4500
Hall	9000	4000

DATE

Operation	Result	Description
date + number	Date	Adds a number of days to a date
date - number	Date	Subtracts a number of days from a date
date - date	Number of days	Subtracts one date from another
date + number/24	Date	Adds a number of hours to a date

SELECT sysdate FROM dual

SYSDATE
09-03-15

SELECT last_name,(sysdate-hire_date)/7 as week
FROM employees
WHERE department_id=90

LAST_NAME	WEEK
King	1134,62952380952380952380952380952380952
Kochhar	1016,48666666666666666666666666666666667
De Haan	843,62952380952380952380952380952380952

DATE Functions

Date Functions

Function	Description
MONTHS_BETWEEN	Number of months between two dates
ADD_MONTHS	Add calendar months to date
NEXT_DAY	Next day of the date specified
LAST_DAY	Last day of the month
ROUND	Round date
TRUNC	Truncate date

DATE Functions

Using Date Functions

- MONTHS_BETWEEN ('01-SEP-95','11-JAN-94')
  → 19.6774194
- ADD_MONTHS ('11-JAN-94',6) → '11-JUL-94'
- NEXT_DAY ('01-SEP-95','FRIDAY')
  → '08-SEP-95'
- LAST_DAY('01-FEB-95') → '28-FEB-95'

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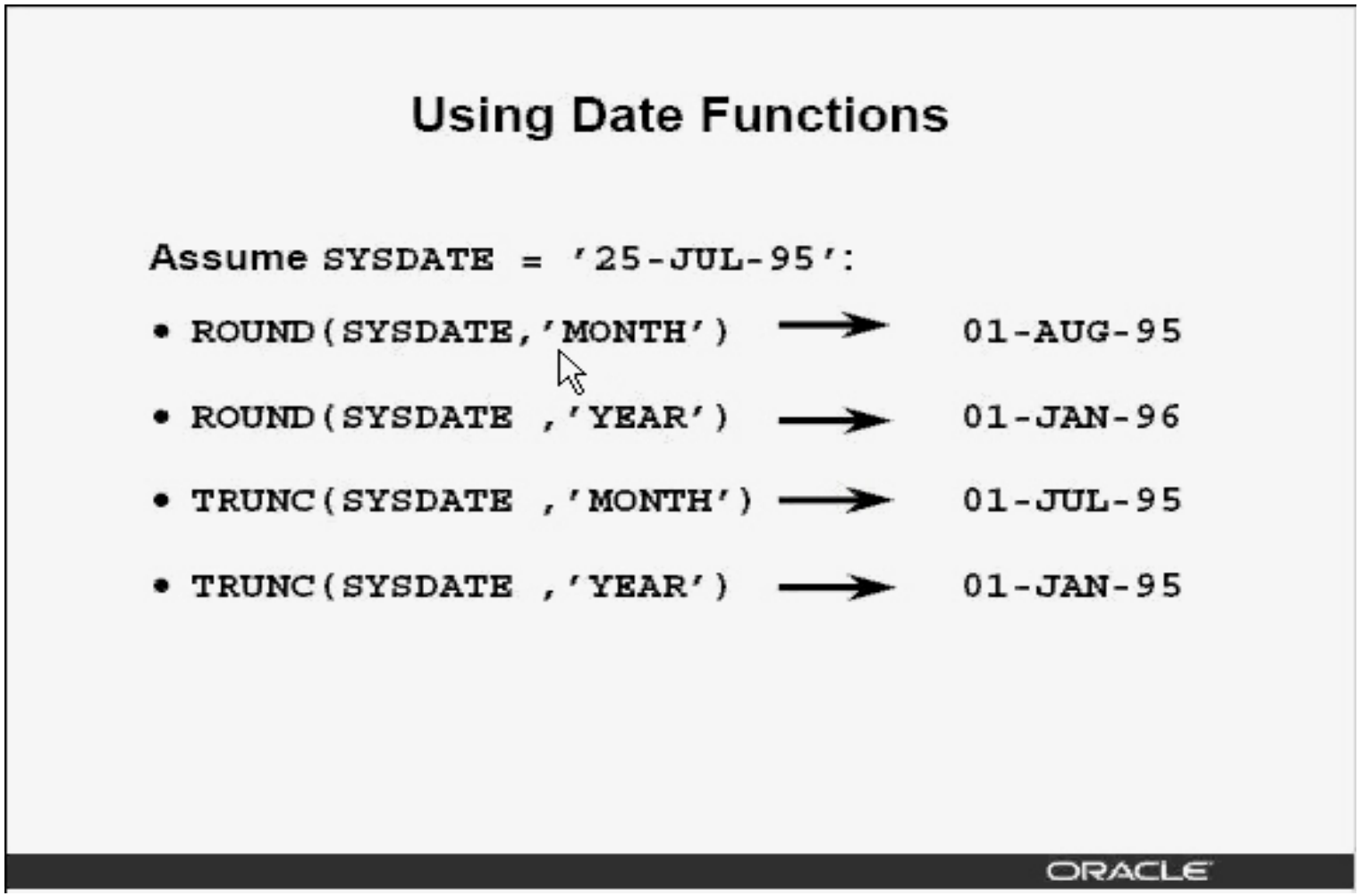
DATE Functions

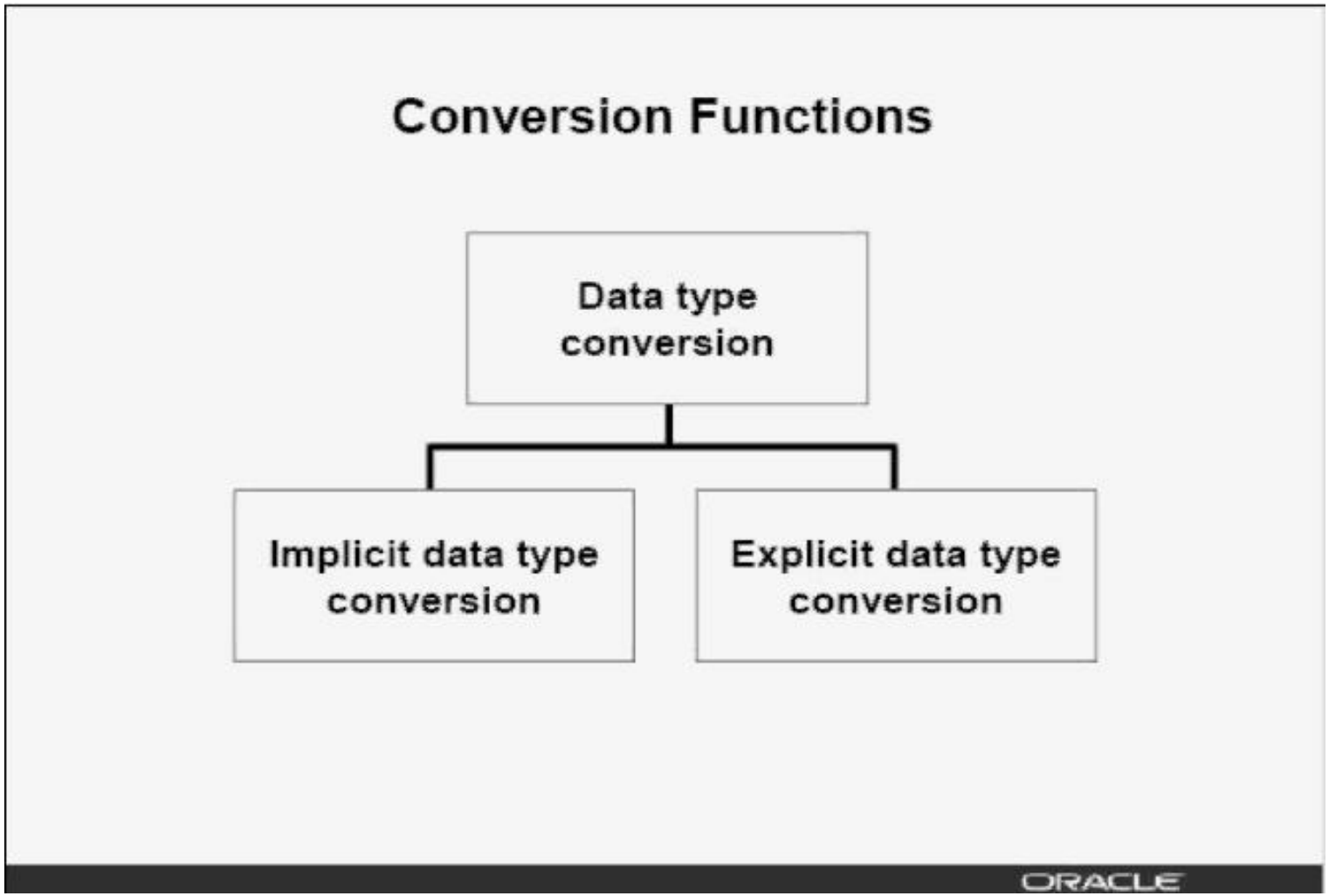


Single Row Functions

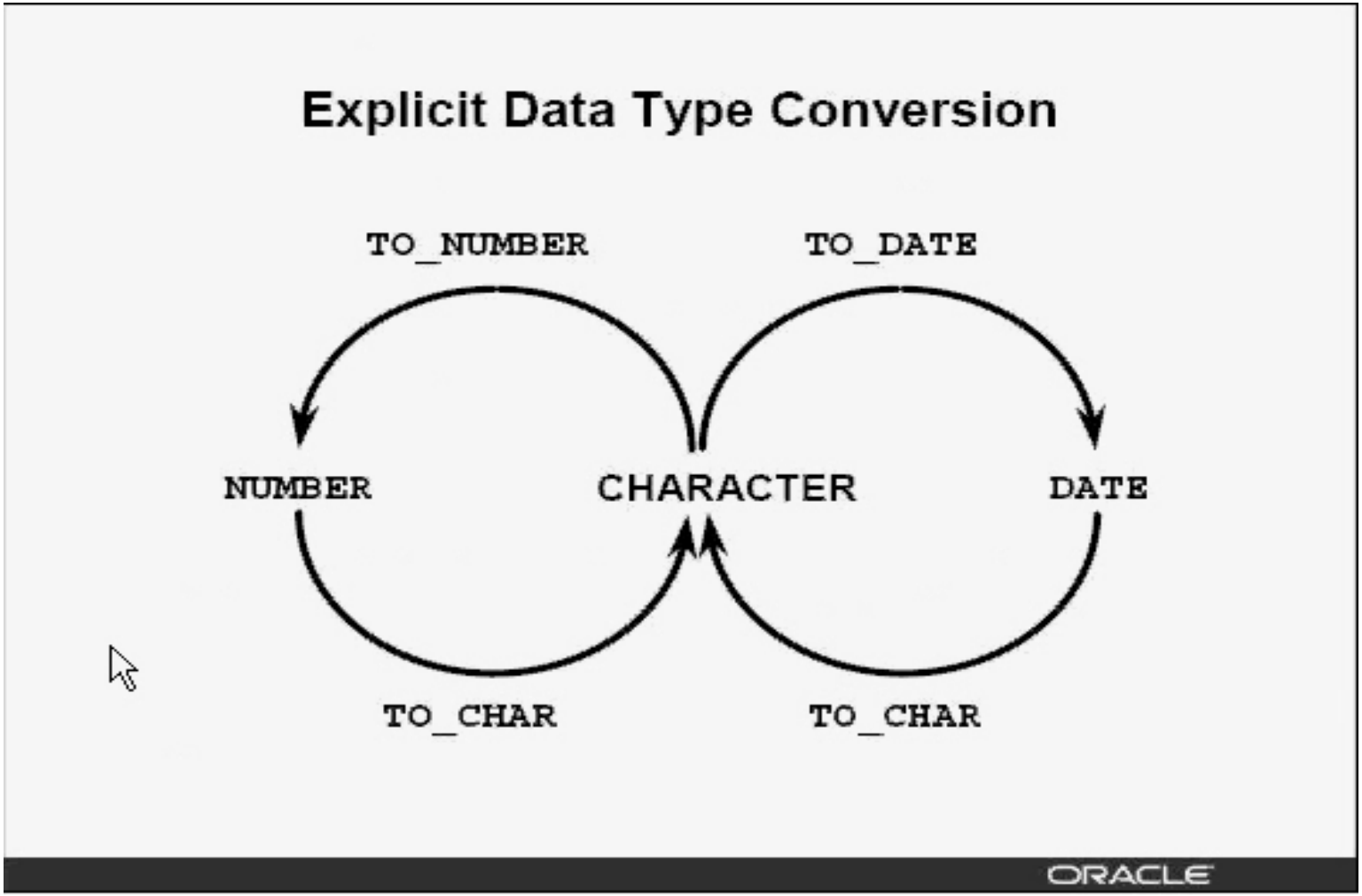
```
SELECT employee_id,hire_date,MONTHS_BETWEEN(sysdate,hire_date),
ADD_MONTHS(hire_date,6),NEXT_DAY(hire_date,7),
LAST_DAY(hire_date) FROM employees
WHERE MONTHS_BETWEEN(sysdate,hire_date)>36
```

EMPLOYEE_ID	HIRE_DATE	MONTHS_BETWEEN(SYSDATE,HIRE_DATE)	ADD_MONTHS(HIRE_DATE,6)	NEXT_DAY(HIRE_DATE,7)	LAST_DAY(HIRE_DAT
100	87-06-17	260,952710946833930704898446833930704898	87-12-17	87-06-20	87-06-30
101	89-09-21	233,823678688769414575866188769414575866	90-03-21	89-09-23	89-09-30
102	93-01-13	194,081743204898446833930704898446833931	93-07-13	93-01-16	93-01-31

Conversion Functions



Conversion Functions



Conversion Functions

```
SELECT employee_id,to_char(hire_date,'MM/YY') FROM employees
WHERE last_name='Higgins'
```

EMPLOYEE_ID	TO_CHAR(HIRE_DATE,'MM/YY')
205	06/94

DATE Format Model

Elements of the Date Format Model

YYYY	Full year in numbers
YEAR	Year spelled out
MM	Two-digit value for month
MONTH	Full name of the month
MON	Three-letter abbreviation of the month
DY	Three-letter abbreviation of the day of the week
DAY	Full name of the day of the week
DD	Numeric day of the month

Valid Date Formats

Sample Format Elements of Valid Date Formats

Element	Description
SCC or CC	Century; server prefixes B.C. date with -
Years in dates YYYY or SYYYY	Year; server prefixes B.C. date with -
YYY or YY or Y	Last three, two, or one digits of year
Y,YYY	Year with comma in this position
IYYY, IYY, IY, I	Four, three, two, or one digit year based on the ISO standard
SYEAR or YEAR	Year spelled out; server prefixes B.C. date with -
BC or AD	B.C./.D. indicator
B.C. or A.D.	B.C./A.D. indicator with periods
Q	Quarter of year
MM	Month: two-digit value
MONTH	Name of month padded with blanks to length of nine characters
MON	Name of month, three-letter abbreviation
RM	Roman numeral month
WW or W	Week of year or month
DDD or DD or D	Day of year, month, or week
DAY	Name of day padded with blanks to a length of nine characters
DY	Name of day; three-letter abbreviation
J	Julian day; the number of days since 31 December 4713 B.C.

Valid Date Formats (cont.)

Element	Description
AM or PM	Meridian indicator
A.M. or P.M.	Meridian indicator with periods
HH or HH12 or HH24	Hour of day, or hour (1–12), or hour (0–23)
MI	Minute (0–59)
SS	Second (0–59)
SSSSS	Seconds past midnight (0–86399)

Other Formats

Other Formats	
Element	**Description**
/ . ,	Punctuation is reproduced in the result
"of the"	Quoted string is reproduced in the result

Specifying Suffixes to Influence Number Display	
Element	**Description**
TH	Ordinal number (for example, DDTH for 4TH)
SP	Spelled-out number (for example, DDSP for FOUR)
SPTH or THSP	Spelled-out ordinal numbers (for example, DDSPTH for FOURTH)

Example

```
SELECT last_name,to_char(hire_date,'DD MONTH YYYY')
FROM employees
```

LAST_NAME	TO_CHAR(HIRE_DATE,'DDMONTHYYYY')
King	17 JUNE 1987
Kochhar	21 SEPTEMBER 1989
De Haan	13 JANUARY 1993

```
SELECT last_name,to_char(hire_date,'Ddspth "of" Month YYYY HH:MI:ss AM')
FROM employees
```

LAST_NAME	TO_CHAR(HIRE_DATE,'DDSPTH"OF"MONTHYYYYHH:MI:SSAM')
King	Seventeenth of June 1987 12:00:00 AM
Kochhar	Twenty-First of September 1989 12:00:00 AM
De Haan	Thirteenth of January 1993 12:00:00 AM

TO_CHAR

9	Represents a number
0	Forces a zero to be displayed
$	Places a floating dollar sign
L	Uses the floating local currency symbol
.	Prints a decimal point
,	Prints a thousand indicator

Other Formats

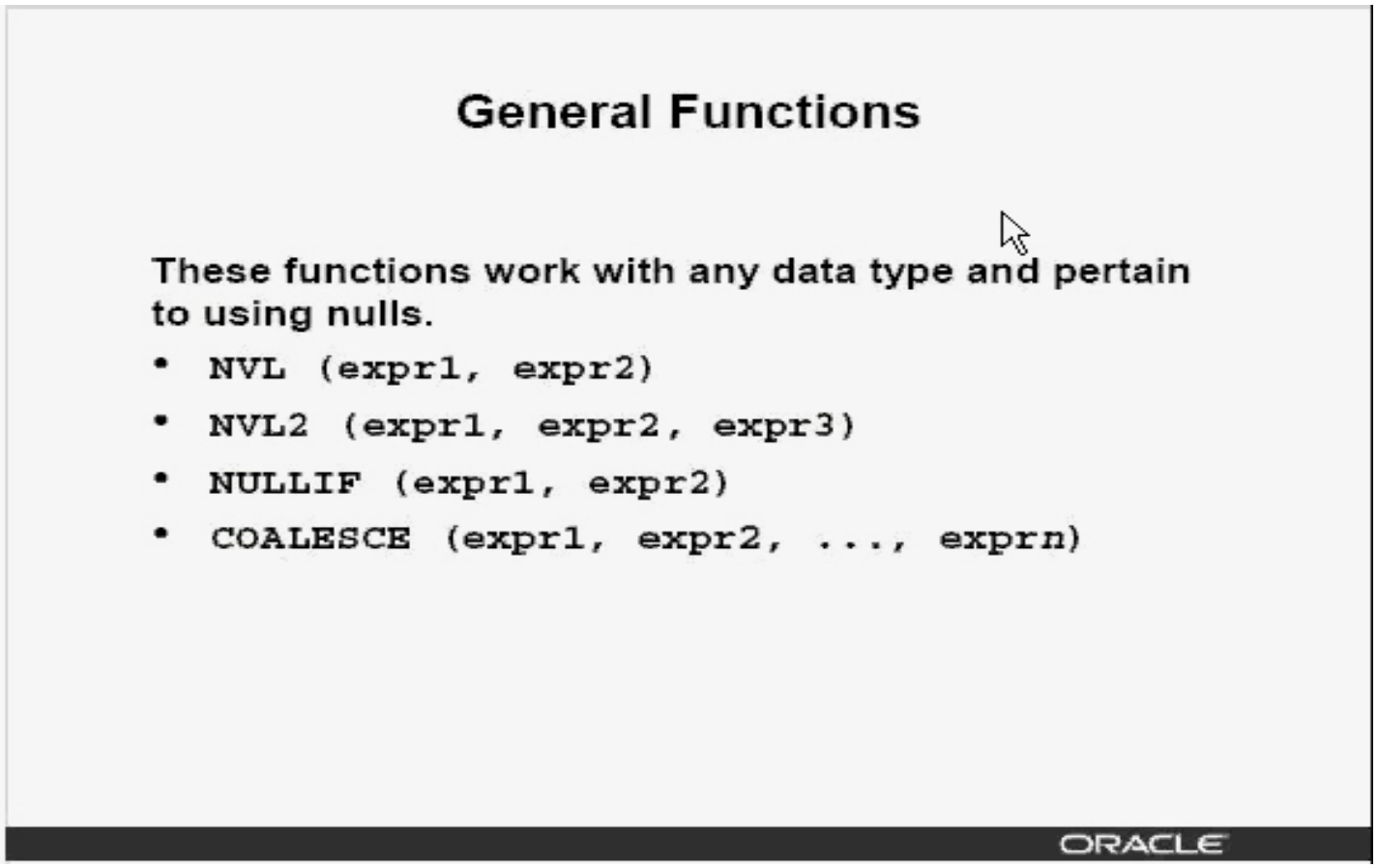
```
SELECT TO_CHAR(salary,’$99,999.00’),salary
FROM employees
WHERE last_name=‘Ernst’
```

TO_CHAR(SALARY,'$99,999.00')	SALARY
$6,000.00	6000

```
SELECT last_name,hire_date
FROM employees
WHERE hire_date=TO_DATE('05 24, 1999','fxMM DD, YYYY')
```

LAST_NAME	HIRE_DATE
Grant	99-05-24

General Functions



Other Formats

```
SELECT
last_name,salary,commission_pct,(salary*12),(salary*12*commission_pct)
FROM employees
```

LAST_NAME	SALARY	COMMISSION_PCT	(SALARY*12)	(SALARY*12*COMMISSION_PCT)
King	24000	-	288000	-
Kochhar	17000	-	204000	-
De Haan	17000	-	204000	-

```
SELECT
last_name,salary,commission_pct,(salary*12),(salary*12*NVL(commission_pct,0))
FROM employees
```

LAST_NAME	SALARY	COMMISSION_PCT	(SALARY*12)	(SALARY*12*NVL(COMMISSION_PCT,0))
King	24000	-	288000	0
Kochhar	17000	-	204000	0
De Haan	17000	-	204000	0

Other Formats

```
SELECT
last_name,salary,commission_pct,NVL2(commission_pct,'SAL+COMM','SAL'
) income
FROM employees
WHERE department_id in (50,80)
```

LAST_NAME	SALARY	COMMISSION_PCT	INCOME
Weiss	8000	-	SAL
Fripp	8200	-	SAL
Kaufling	7900	-	SAL

Other Formats

```
SELECT first_name,LENGTH(first_name) "expr1",
last_name,LENGTH(last_name) "expr2",
NULLIF(LENGTH(first_name),LENGTH(last_name)) result
FROM employees
```

FIRST_NAME	Expr1	LAST_NAME	Expr2	RESULT
Ellen	5	Abel	4	5
Sundar	6	Ande	4	6
Mozhe	5	Atkinson	8	5

```
SELECT last_name,COALESCE(commission_pct,salary,10)
FROM employees
```

LAST_NAME	COALESCE(COMMISSION_PCT,SALARY,10)
King	24000
Kochhar	17000
De Haan	17000

NullIf→If expr1=expe2 then the result will be Null

Conditional Expression

```
CASE expr WHEN comparison_expr1 THEN return_expr1
          [WHEN comparison_expr2 THEN return_expr2
           WHEN comparison_exprn THEN return_exprn
           ELSE else_expr]
END
```

```
SELECT last_name,salary,job_id,
CASE job_id WHEN 'IT_PROG' THEN 1.10*salary
            WHEN 'AD_VP' THEN 1.15*salary
            WHEN 'AD_PRES' THEN 1.20*salary
            ELSE salary
END         "Revised salary"
FROM employees
```

LAST_NAME	SALARY	JOB_ID	Revised Salary
King	24000	AD_PRES	28800
Kochhar	17000	AD_VP	19550
De Haan	17000	AD_VP	19550
Hunold	9000	IT_PROG	9900

Conditional Expression

SELECT last_name, Average, Class,

CASE Class WHEN 1 THEN 1.05*salary

WHEN 2 THEN 1.02*salary

WHEN 3 THEN 1.01*salary

ELSE salary

END “New Average"

FROM Student

What about class 4?

What if classes 1&2 increased 5 marks and 3&4 2 marks

DECODE

```
DECODE(col|expression, search1, result1
                      [, search2, result2,...,]
                      [, default])
```

```
SELECT last_name,salary,job_id,
DECODE (job_id,
          'IT_PROG',1.10*salary,
           'AD_VP'  ,1.15*salary,
           'AD_PRES',1.20*salary,
          salary)
FROM employees
```

LAST_NAME	SALARY	JOB_ID	Revised Salary
King	24000	AD_PRES	28800
Kochhar	17000	AD_VP	19550
De Haan	17000	AD_VP	19550
Hunold	9000	IT_PROG	9900

Excercise

```
SELECT employee_id,last_name,salary,ROUND(salary*1.15,0) "New Salary"
FROM employees

SELECT INITCAP(last_name) "Name", LENGTH(last_name) "Length"
FROM employees
WHERE last_name LIKE 'J%'
OR last_name LIKE 'A%'
OR last_name LIKE 'M%'
ORDER BY last_name

SELECT INITCAP(last_name) "Name", LENGTH(last_name) "Length"
FROM employees
WHERE SUBSTR(last_name,1,1) IN ('A','J','M')


SELECT INITCAP(last_name), LPAD(salary,15,'$') "Salary"
FROM employees
```

Excercise

```
SELECT last_name,hire_date,
TO_CHAR(NEXT_DAY(ADD_MONTHS(hire_date,6),3),'Day, "The " Ddspth "of"  MONTH,YYYY') "Review"
FROM employees

SELECT last_name,hire_date, TO_CHAR(hire_date,'DAY') day
FROM employees ORDER BY TO_CHAR(hire_date,'d')

SELECT last_name,hire_date, TO_CHAR(hire_date,'DAY') day
FROM employees
ORDER BY TO_CHAR(hire_date -2,'d')

SELECT last_name,NVL(TO_CHAR(commission_pct),'No Commission') Comm
FROM employees
```

Show all employees with their salary

Salary show the ‘low’ for all salaries less than 2000

And show the ‘medium’ for all salaries between 5000 and 7000

Other wise show the ‘height’

Show all employees with their department

Salary show their jobs for all salaries less than 2000

And show the their departments for all salaries between 5000 and 7000

Other wise show their salary

Show all employees with their department

Salary show sum of one year of salary for all salaries less than 2000

And show the their average salary for all salaries between 5000 and 7000

Other wise show their salary