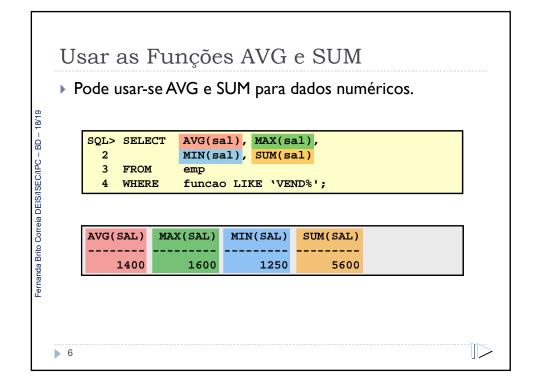
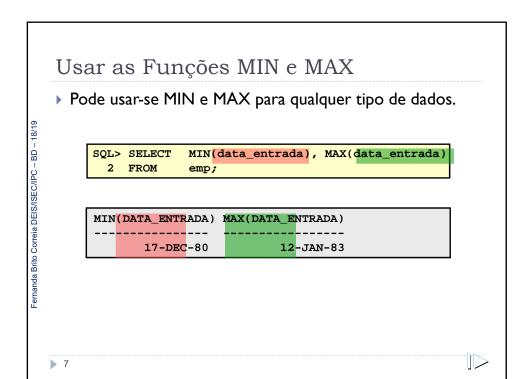
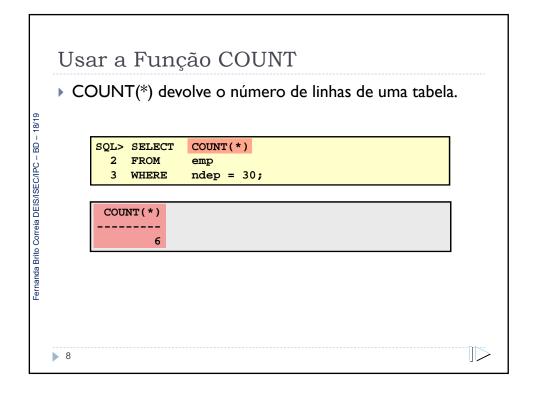


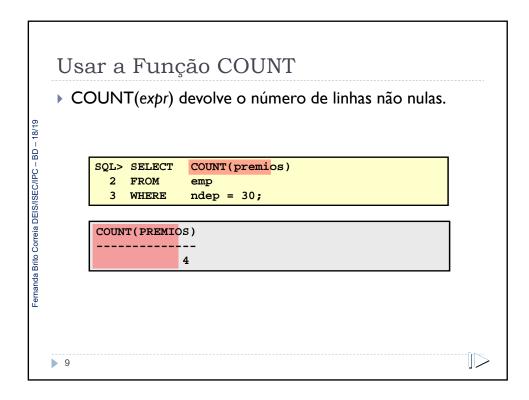
```
Sintaxe das Funções de Grupo

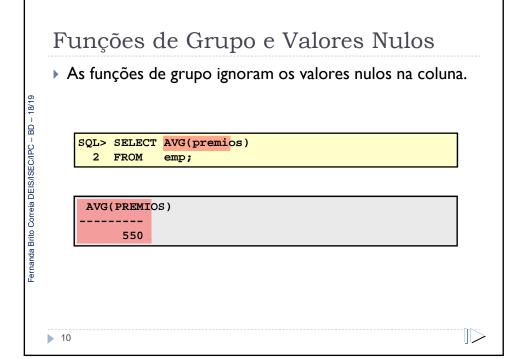
SELECT [column,] group_function(column)
FROM table
[WHERE condition]
[GROUP BY column]
[ORDER BY column];
```

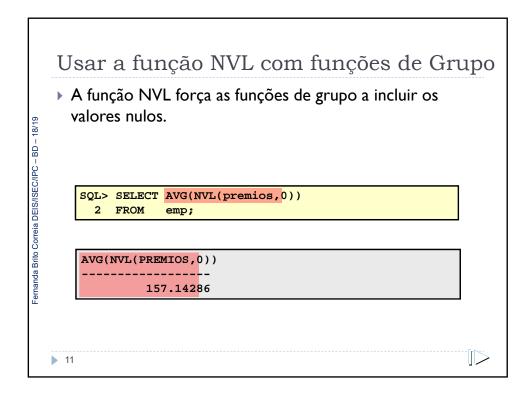


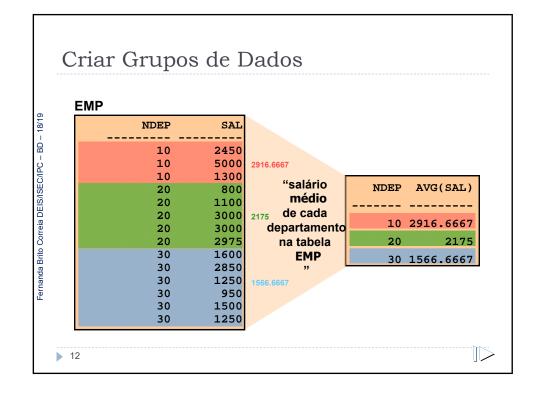












## Criar Grupos de Dados: Clausula GROUP BY

▶ Divide as linhas de uma tabela em pequenos grupos usando a clausula GROUP BY

```
SELECT column, group_function(column)

FROM table
[WHERE condition]
[GROUP BY group_by_expression]
[ORDER BY column];
```

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### Usar a Clausula GROUP BY

▶ Todas as colunas na lista do SELECT que não estão nas funções de grupo têm de estar na clausula GROUP BY.

```
SQL> SELECT ndep, AVG(sal)
2 FROM emp
3 GROUP BY ndep;
```

```
NDEP AVG(SAL)

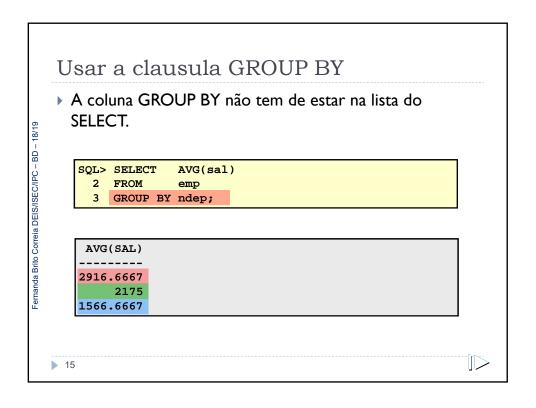
10 2916.6667

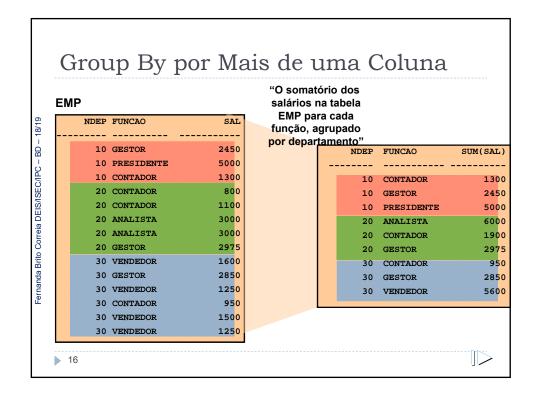
20 2175

30 1566.6667
```

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SQL> SELECT ndep, funcao, sum(sal) FROM GROUP BY ndep, funcao;

NDEP	FUNCAO	SUM(SAL)	
10	CONTADOR	1300	
10	GESTOR	2450	
10	PRESIDENTE	5000	
20	ANALISTA	6000	
20	CONTADOR	1900	
• • •			
9 rows se	lected.		

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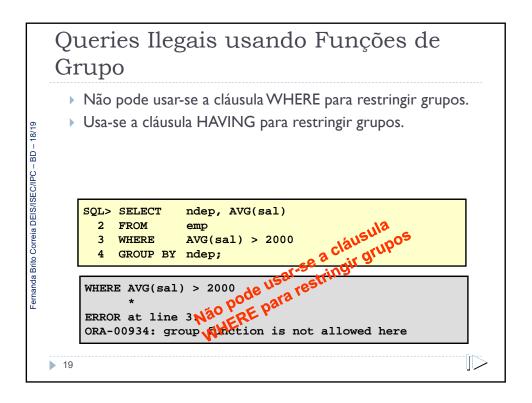
# Queries Ilegais usando Funções de Grupo

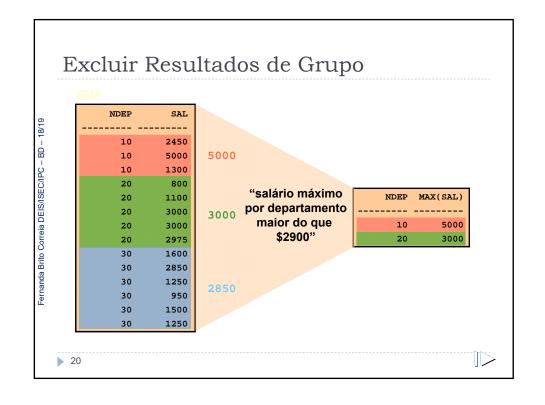
> Qualquer coluna ou expressão na lista do SELECT que não seja uma função de agregado tem de estar na clausula GROUP BY.

SQL> SELECT ndep, COUNT(nome) láusula GROUP BY 2 FROM

SELECT ndep, COUNT(nome) ERROR at line 1: ORA-00937: not a single-group group function

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## Excluir Resultados de Grupo: Cláusula HAVING

- Usar a clausula HAVING para restringir grupos
  - As linhas são agrupadas.
  - A função de grupo é aplicada.
  - Os grupos que satisfazem a clausula HAVING são mostrados.

SELECT column, group\_function

FROM table
[WHERE condition]
[GROUP BY group\_by\_expression]
[HAVING group\_condition]
[ORDER BY column];

**2**1

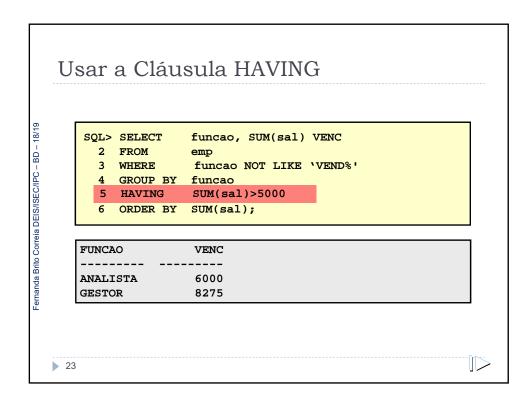
#### Usar a cláusula HAVING

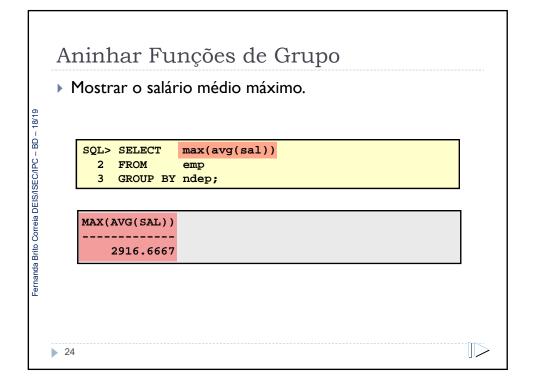
SQL> SELECT ndep, max(sal)
2 FROM emp
3 GROUP BY ndep
4 HAVING max(sal)>2900;

NDEP	MAX(SAL)
10	5000
20	3000

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#### Resumo

SELECT column, group\_function(column)

FROM table
[WHERE condition]
[GROUP BY group\_by\_expression]
[HAVING group\_condition]
[ORDER BY column];

Drdem de cálculo das cláusulas:

- ▶ Clausula WHERE
- ▶ Clausula GROUP BY
- ▶ Clausula HAVING

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