

Oracle Academic Initiative

Oracle9i Introduction to SQL



Oleh:

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BAB 19 : Hierarchical Retrieval

19.1. Sasaran

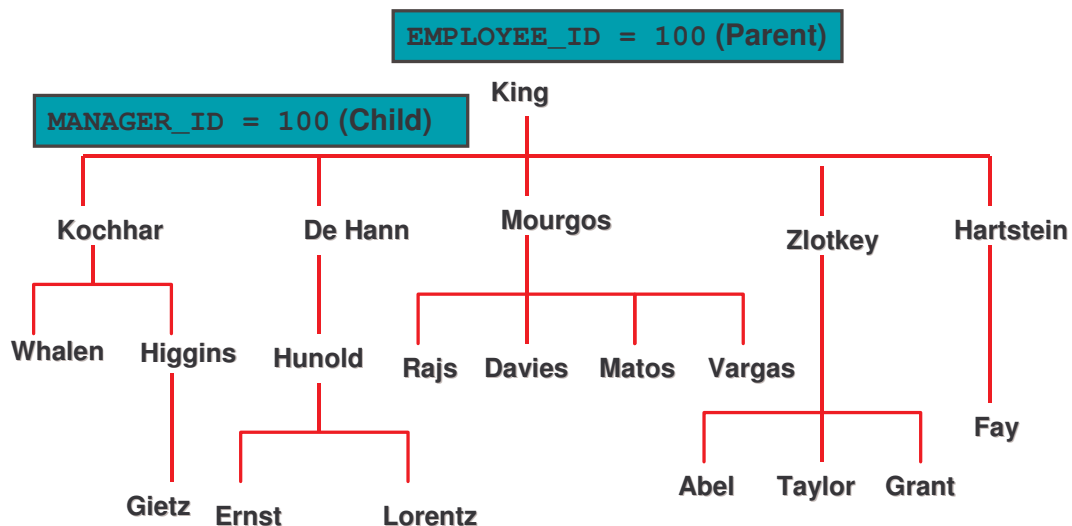
- Memahami konsep hierarchical query
- Dapat membuat laporan dengan struktur tree
- Memahami Format hierarchical data

19.2. Sampel Data dari Tabel EMPLOYEES

EMPLOYEE_ID	LAST_NAME	JOB_ID	MANAGER_ID
100	King	AD_PRES	
101	Kochhar	AD_VP	100
102	De Haan	AD_VP	100
103	Hunold	IT_PROG	102
104	Ernst	IT_PROG	103
107	Lorentz	IT_PROG	103
124	Mourgos	ST_MAN	100
141	Rajs	ST_CLERK	124
142	Davies	ST_CLERK	124
143	Matos	ST_CLERK	124
144	Vargas	ST_CLERK	124
149	Zlotkey	SA_MAN	100
174	Abel	SA_REP	149
176	Taylor	SA_REP	149
EMPLOYEE_ID	LAST_NAME	JOB_ID	MANAGER_ID
178	Grant	SA_REP	149
200	Whalen	AD_ASST	101
201	Hartstein	MK_MAN	100
202	Fay	MK_REP	201
205	Higgins	AC_MGR	101
206	Gietz	AC_ACCOUNT	205

20 rows selected.

19.3. Struktur Natural Tree



19.4. Hirarki Query

```
SELECT [LEVEL], column, expr...
FROM table
[WHERE condition(s)]
[START WITH condition(s)]
[CONNECT BY PRIOR condition(s)] ;
```

Dimana *condition* dinyatakan dengan :

```
expr comparison_operator expr
```

19.5. Penelusuran Tree

Bentuk umum :

```
START WITH column1 = value
```

Menentukan kondisi yang harus dicapai. Menerima kondisi yang valid, dan dengan menggunakan

```
...START WITH last_name = 'Kochhar'
```

tabel EMPLOYEES, memulai dari pegawai yang last-name nya Kochhar.

19.6. Penelusuran Tree : Dari Atas ke Bawah

Sintak umum :

```
CONNECT BY PRIOR column1 = column2
```

Arah penelusuran :

- Atas ke bawah
Column 1 = parent key, Column 2 = child key
- Bawah ke atas
Column 1 = child key, Column 2 = parent key

Contoh :

```
... CONNECT BY PRIOR employee_id = manager_id
```

19.7. Penelusuran Tree : Dari Bawah ke Atas

```
SELECT employee_id, last_name, job_id, manager_id
FROM employees
START WITH employee_id = 101
CONNECT BY PRIOR manager_id = employee_id ;
```

EMPLOYEE_ID	LAST_NAME	JOB_ID	MANAGER_ID
101	Kochhar	AD_VP	100
100	King	AD_PRES	

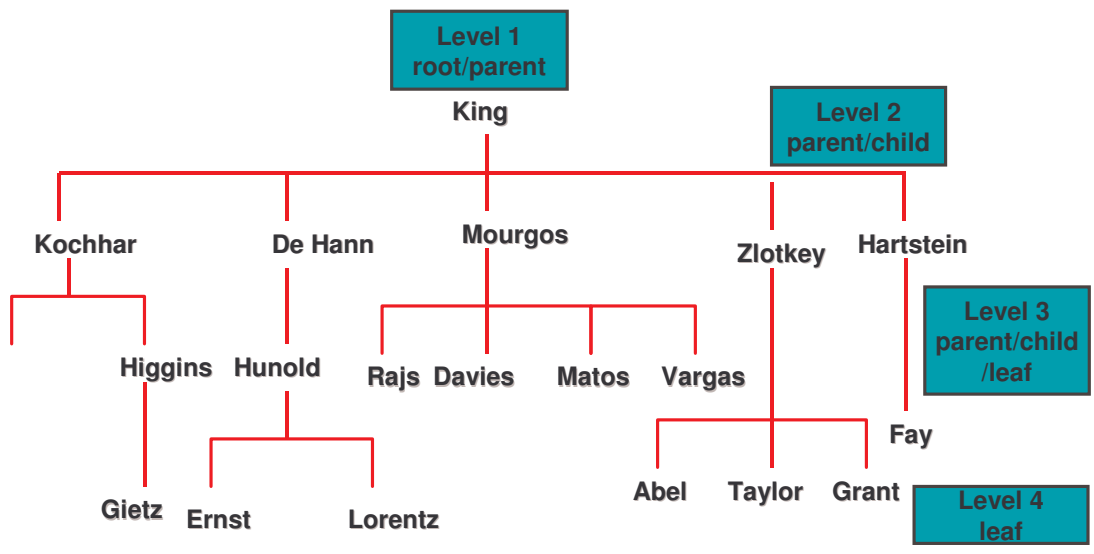
19.8. Penelusuran Tree : Dari Atas ke Bawah

```
SELECT last_name||' reports to '||
PRIOR last_name "Walk Top Down"
FROM employees
START WITH last_name = 'King'
CONNECT BY PRIOR employee_id = manager_id ;
```

Walk Top Down
King reports to
Kochhar reports to King
Whalen reports to Kochhar
Higgins reports to Kochhar
...
Zlotkey reports to King
Abel reports to Zlotkey
Taylor reports to Zlotkey
Grant reports to Zlotkey
Hartstein reports to King
Fay reports to Hartstein

20 rows selected.

19.9. Ranking Baris dengan LEVEL Pseudocolumn



19.10. Format Hirarki Report dengan menggunakan LEVEL dan LPAD

Buat report yang menampilkan level manajemen sebuah perusahaan dimulai dari level tertinggi sampai dengan level terendah.

```

COLUMN org_chart FORMAT A12
SELECT LPAD(last_name, LENGTH(last_name)+(LEVEL*2)-2, '_')
       AS org_chart
FROM   employees
START WITH last_name='King'
CONNECT BY PRIOR employee_id=manager_id

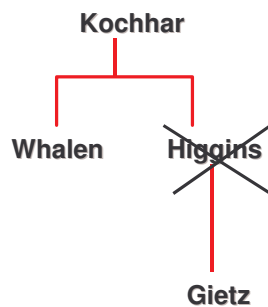
```

19.11. Pencabangan Pruning

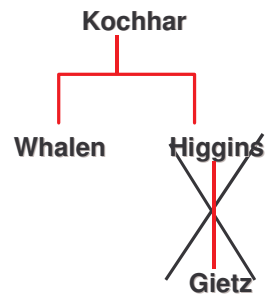
Gunakan klausa **WHERE**
untuk mengeleminasi node.

Gunakan klausa **CONNECT BY**
Untuk mengeleminasi pencabangan.

WHERE last_name != 'Higgins'



**CONNECT BY PRIOR
employee_id = manager_id
AND last_name != 'Higgins'**



19.12. Latihan