2-2. SELECT문 알아보기

홍형경
chariehong@gmail.com
2021.06

1. SELECT 문

(1) 개요

- 가장 대표적인 DML 문장으로 테이블에 저장된 데이터를 원하는 조건과 형태로 조회

- SQL중 가장 기본이며 가장 많이 사용하는 문장

- WHERE 절을 사용해 특정 조건에 맞는 데이터만 선별해 조회 가능

- ORDER BY 절을 사용해 데이터를 정렬해 조회

1. SELECT 문

(1) 개요

· 원하는 데이터를 조회하기 위해 필요한 정보

➔ 사원의 **사번**과 **이름**, **급여**를 급여가 **5000 이상**인 급여가 **높은 순서**로 보고 싶다

· 필요 정보 추출

- 조회하고자 하는 정보는 어디에 있는가?

➔ 사원 테이블(EMPLOYEES) : 데이터가 저장된 테이블(명)

- 사원, 사번, 이름, 급여? ➔ 데이터의 속성 정보인 컬럼(명)

- 급여가 5000 이상 ? ➔ 5000이상을 걸러내는 조건이 필요

- 급여가 높은 순서? ➔ 급여 순으로 내림차순

3

1. SELECT 문

(2) 기본구문

SELECT 컬럼1, 컬럼2, ...
  FROM 테이블명
WHERE 조건
ORDER BY 정렬순서;

· **SELECT 절 : 컬럼1, 컬럼2, ... 혹은 전체 컬럼 조회 시 * 명시**

· **FROM 절 : 테이블명, 2개 이상 명시할 때는 콤마로 구분**

1. SELECT 문

※ HR(Human Resource) 소유의 테이블

테이블명	설명	연결정보
EMPLOYEES	사원정보 테이블	부서테이블과 연결
DEPARTMENTS	부서정보 테이블	사원,지역정보와 연결
LOCATIONS	지역정보 테이블	부서,국가정보와 연결
COUNTRIES	국가정보 테이블	지역,대륙정보와 연결
REGIONS	대륙정보 테이블	국가정보와 연결
JOBS	사원 직급정보 테이블	사원테이블과 연결
JOB_HISTORY	직급변경 테이블	사원테이블과 연결

1. SELECT 문

- **EMPLOYEES 테이블 데이터 전체 조회**

  SELECT *

  FROM EMPLOYEES;

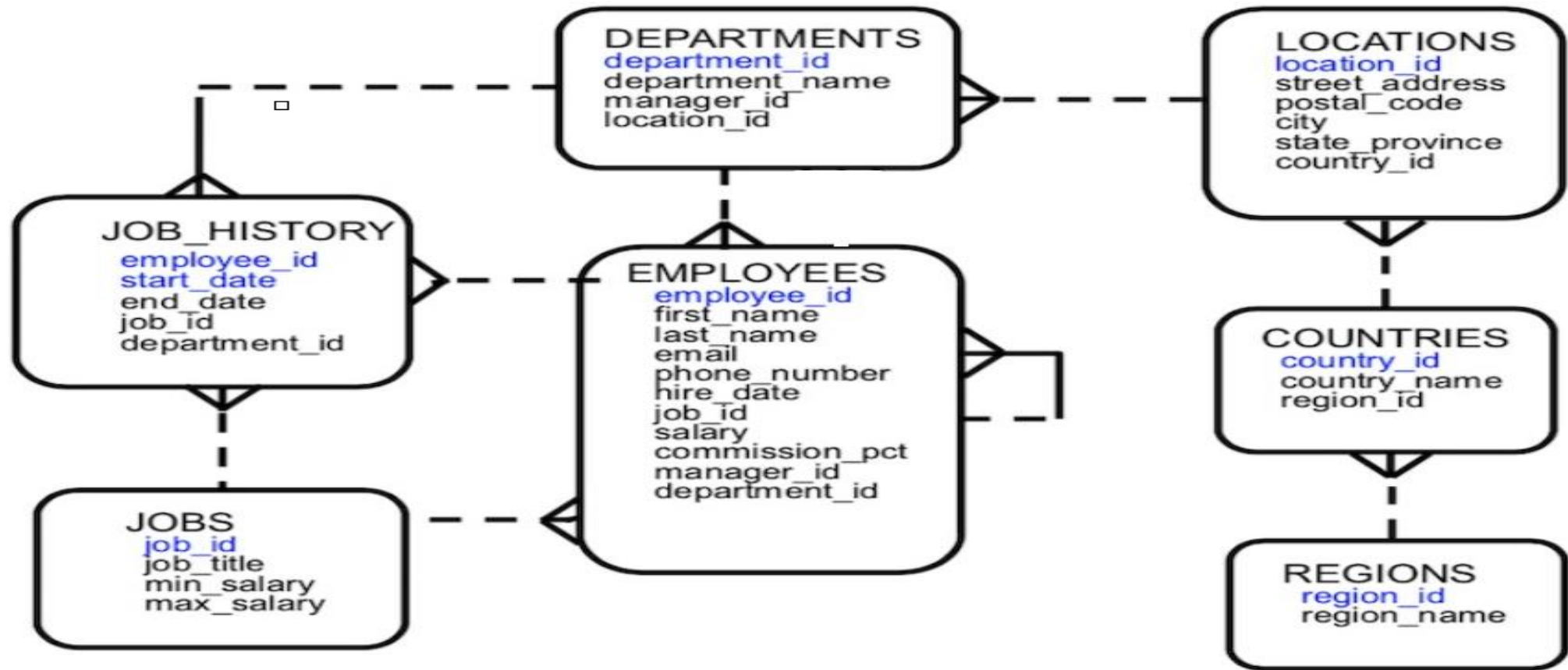| EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
198	Donald	OConnell	DOCONNEL	650.507.9833	2007-06-21 00:00:00	SH_CLERK	2600	(null)	124	50
199	Douglas	Grant	DGRANT	650.507.9844	2008-01-13 00:00:00	SH_CLERK	2600	(null)	124	50
200	Jennifer	Whalen	JWHALEN	515.123.4444	2003-09-17 00:00:00	AD_ASST	4400	(null)	101	10
201	Michael	Hartstein	MHARTSTE	515.123.5555	2004-02-17 00:00:00	MK_MAN	13000	(null)	100	20
202	Pat	Fay	PFAY	603.123.6666	2005-08-17 00:00:00	MK_REP	6000	(null)	201	20
203	Susan	Mavris	SMAVRIS	515.123.7777	2002-06-07 00:00:00	HR_REP	6500	(null)	101	40
204	Hermann	Baer	HBAER	515.123.8888	2002-06-07 00:00:00	PR_REP	10000	(null)	101	70
205	Shelley	Higgins	SHIGGINS	515.123.8080	2002-06-07 00:00:00	AC_MGR	12008	(null)	101	110
206	William	Gietz	WGIETZ	515.123.8181	2002-06-07 00:00:00	AC_ACCOUNT	8300	(null)	205	110
100	Steven	King	SKING	515.123.4567	2003-06-17 00:00:00	AD_PRES	24000	(null)	(null)	90
101	Neena	Kochhar	NKOCHHAR	515.123.4568	2005-09-21 00:00:00	AD_VP	17000	(null)	100	90

1. SELECT 문

· HR 스키마 ERD(Entity Relationship Diagram)

 - ERD란 테이블 간 설계도

 - 테이블 설계를 모델링이라고 함

1. SELECT 문

- HR 스키마 ERD(Entity Relationship Diagram)

1. SELECT 문

· **DESC EMPLOYEES;**
　(Table Layout)

```
이름                          널 ?           유형
----------------      --------      ------------
EMPLOYEE_ID           NOT  NULL  NUMBER(6)
FIRST_NAME                        VARCHAR2(20)
LAST_NAME            NOT  NULL  VARCHAR2(25)
EMAIL                NOT  NULL  VARCHAR2(25)
PHONE_NUMBER                     VARCHAR2(20)
HIRE_DATE            NOT  NULL  DATE
JOB_ID               NOT  NULL  VARCHAR2(10)
SALARY                           NUMBER(8,2)
COMMISSION_PCT                   NUMBER(2,2)
MANAGER_ID                       NUMBER(6)
DEPARTMENT_ID                    NUMBER(4)
```

1. SELECT 문

· **사원**의 **사번**과 **이름, 급여**를 급여가 5000 이상인 급여가 높은 순서로 보고 싶다

SELECT employee_id, first_name, last_name, salary

FROM **EMPLOYEES**;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY
100	Steven	King	24000
101	Neena	Kochhar	17000
102	Lex	De Haan	17000
103	Alexander	Hunold	9000
104	Bruce	Ernst	6000
105	David	Austin	4800
106	Valli	Pataballa	4800
107	Diana	Lorentz	4200
108	Nancy	Greenberg	12008
109	Daniel	Faviet	9000
110	John	Chen	8200
111	Ismael	Sciarra	7700
112	Jose Manuel	Urman	7800
113	Luis	Popp	6900
114	Den	Raphaely	11000
115	Alexander	Khoo	3100
116	Shelli	Baida	2900
117	Sigal	Tobias	2800

1. SELECT 문

- **DEPARTMENTS 테이블 조회**

```
SELECT *
 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
110	Accounting	205	1700
120	Treasury	(null)	1700
130	Corporate Tax	(null)	1700
140	Control And Credit	(null)	1700
150	Shareholder Services	(null)	1700
160	Benefits	(null)	1700
170	Manufacturing	(null)	1700
180	Construction	(null)	1700
190	Contracting	(null)	1700
200	Operations	(null)	1700
210	IT Support	(null)	1700
220	NOC	(null)	1700
230	IT Helpdesk	(null)	1700
240	Government Sales	(null)	1700
250	Retail Sales	(null)	1700
260	Recruiting	(null)	1700
270	Payroll	(null)	1700

2. WHERE 절

- 테이블에 있는 특정 데이터(로우)를 걸러내기 위한 조건을 기술 (필터 역할)

- 1개 이상 조건 명시 가능

- 조건의 연산 결과가 참(TRUE)인 건을 조회

- 1개 이상 조건은 **AND**나 **OR** 로 조건 들을 연결

2. WHERE 절

ㆍ 사번이 100번인 사원 조회

SELECT *

  FROM EMPLOYEES

WHERE EMPLOYEE_ID **= 100**;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
100	Steven	King	SKING	515.123.4567	2003-06-17 00:00:00	AD_PRES	24000	(null)	(null)	90

2. WHERE 절

- 사번이 100번이 아닌 사원 조회

SELECT *

FROM EMPLOYEES

WHERE EMPLOYEE_ID **<> 100**;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
198	Donald	OConnell	DOCONNEL	650.507.9833	2007-06-21 00:00:00	SH_CLERK	2600	(null)	124	50
199	Douglas	Grant	DGRANT	650.507.9844	2008-01-13 00:00:00	SH_CLERK	2600	(null)	124	50
200	Jennifer	Whalen	JWHALEN	515.123.4444	2003-09-17 00:00:00	AD_ASST	4400	(null)	101	10
201	Michael	Hartstein	MHARTSTE	515.123.5555	2004-02-17 00:00:00	MK_MAN	13000	(null)	100	20
202	Pat	Fay	PFAY	603.123.6666	2005-08-17 00:00:00	MK_REP	6000	(null)	201	20
203	Susan	Mavris	SMAVRIS	515.123.7777	2002-06-07 00:00:00	HR_REP	6500	(null)	101	40
204	Hermann	Baer	HBAER	515.123.8888	2002-06-07 00:00:00	PR_REP	10000	(null)	101	70
205	Shelley	Higgins	SHIGGINS	515.123.8080	2002-06-07 00:00:00	AC_MGR	12008	(null)	101	110
206	William	Gietz	WGIETZ	515.123.8181	2002-06-07 00:00:00	AC_ACCOUNT	8300	(null)	205	110

2. WHERE 절

- 사번이 100번이 아닌 사원 조회

SELECT *
  FROM EMPLOYEES
  WHERE EMPLOYEE_ID != 100;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
198	Donald	OConnell	DOCONNEL	650.507.9833	2007-06-21 00:00:00	SH_CLERK	2600	(null)	124	50
199	Douglas	Grant	DGRANT	650.507.9844	2008-01-13 00:00:00	SH_CLERK	2600	(null)	124	50
200	Jennifer	Whalen	JWHALEN	515.123.4444	2003-09-17 00:00:00	AD_ASST	4400	(null)	101	10
201	Michael	Hartstein	MHARTSTE	515.123.5555	2004-02-17 00:00:00	MK_MAN	13000	(null)	100	20
202	Pat	Fay	PFAY	603.123.6666	2005-08-17 00:00:00	MK_REP	6000	(null)	201	20
203	Susan	Mavris	SMAVRIS	515.123.7777	2002-06-07 00:00:00	HR_REP	6500	(null)	101	40
204	Hermann	Baer	HBAER	515.123.8888	2002-06-07 00:00:00	PR_REP	10000	(null)	101	70
205	Shelley	Higgins	SHIGGINS	515.123.8080	2002-06-07 00:00:00	AC_MGR	12008	(null)	101	110
206	William	Gietz	WGIETZ	515.123.8181	2002-06-07 00:00:00	AC_ACCOUNT	8300	(null)	205	110

2. WHERE 절

- 사번이 100보다 크고 JOB_ID가 ST_CLERK인 사원 조회

```
SELECT  *
  FROM EMPLOYEES
 WHERE EMPLOYEE_ID > 100
      AND JOB_ID = 'ST_CLERK';
```

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
125	Julia	Nayer	JNAYER	650.124.1214	2005-07-16 00:00:00	ST_CLERK	3200	(null)	120	50
126	Irene	Mikkilineni	IMIKKILI	650.124.1224	2006-09-28 00:00:00	ST_CLERK	2700	(null)	120	50
127	James	Landry	JLANDRY	650.124.1334	2007-01-14 00:00:00	ST_CLERK	2400	(null)	120	50
128	Steven	Markle	SMARKLE	650.124.1434	2008-03-08 00:00:00	ST_CLERK	2200	(null)	120	50
129	Laura	Bissot	LBISSOT	650.124.5234	2005-08-20 00:00:00	ST_CLERK	3300	(null)	121	50
130	Mozhe	Atkinson	MATKINSO	650.124.6234	2005-10-30 00:00:00	ST_CLERK	2800	(null)	121	50
131	James	Marlow	JAMRLOW	650.124.7234	2005-02-16 00:00:00	ST_CLERK	2500	(null)	121	50
132	TJ	Olson	TJOLSON	650.124.8234	2007-04-10 00:00:00	ST_CLERK	2100	(null)	121	50
133	Jason	Mallin	JMALLIN	650.127.1934	2004-06-14 00:00:00	ST_CLERK	3300	(null)	122	50
134	Michael	Rogers	MROGERS	650.127.1834	2006-08-26 00:00:00	ST_CLERK	2900	(null)	122	50
135	Ki	Gee	KGEE	650.127.1734	2007-12-12 00:00:00	ST_CLERK	2400	(null)	122	50
136	Hazel	Philtanker	HPHILTAN	650.127.1634	2008-02-06 00:00:00	ST_CLERK	2200	(null)	122	50
137	Renske	Ladwig	RLADWIG	650.121.1234	2003-07-14 00:00:00	ST_CLERK	3600	(null)	123	50
138	Stephen	Stiles	SSTILES	650.121.2034	2005-10-26 00:00:00	ST_CLERK	3200	(null)	123	50
139	John	Seo	JSEO	650.121.2019	2006-02-12 00:00:00	ST_CLERK	2700	(null)	123	50

2. WHERE 절

· **급여가 5000 이상인 사원 조회**

SELECT *

FROM EMPLOYEES

WHERE SALARY **>= 5000;**

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
201	Michael	Hartstein	MHARTSTE	515.123.5555	2004-02-17 00:00:00	MK_MAN	13000	(null)	100	20
202	Pat	Fay	PFAY	603.123.6666	2005-08-17 00:00:00	MK_REP	6000	(null)	201	20
203	Susan	Mavris	SMAVRIS	515.123.7777	2002-06-07 00:00:00	HR_REP	6500	(null)	101	40
204	Hermann	Baer	HBAER	515.123.8888	2002-06-07 00:00:00	PR_REP	10000	(null)	101	70
205	Shelley	Higgins	SHIGGINS	515.123.8080	2002-06-07 00:00:00	AC_MGR	12008	(null)	101	110
206	William	Gietz	WGIETZ	515.123.8181	2002-06-07 00:00:00	AC_ACCOUNT	8300	(null)	205	110
100	Steven	King	SKING	515.123.4567	2003-06-17 00:00:00	AD_PRES	24000	(null)	(null)	90
101	Neena	Kochhar	NKOCHHAR	515.123.4568	2005-09-21 00:00:00	AD_VP	17000	(null)	100	90
102	Lex	De Haan	LDEHAAN	515.123.4569	2001-01-13 00:00:00	AD_VP	17000	(null)	100	90
103	Alexander	Hunold	AHUNOLD	590.423.4567	2006-01-03 00:00:00	IT_PROG	9000	(null)	102	60
104	Bruce	Ernst	BERNST	590.423.4568	2007-05-21 00:00:00	IT_PROG	6000	(null)	103	60
108	Nancy	Greenberg	NGREENBE	515.124.4569	2002-08-17 00:00:00	FI_MGR	12008	(null)	101	100

2. WHERE 절

· 사원의 **사번**과 **이름**, **급여**를 급여가 **5000 이상**인 급여가 높은 순서로 보고 싶다

SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME, SALARY

FROM EMPLOYEES

WHERE **SALARY >= 5000;**

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY
100	Steven	King	24000
101	Neena	Kochhar	17000
102	Lex	De Haan	17000
103	Alexander	Hunold	9000
104	Bruce	Ernst	6000
108	Nancy	Greenberg	12008
109	Daniel	Faviet	9000
110	John	Chen	8200
111	Ismael	Sciarra	7700
112	Jose Manuel	Urman	7800
113	Luis	Popp	6900
114	Den	Raphaely	11000
120	Matthew	Weiss	8000
121	Adam	Fripp	8200
122	Payam	Kaufling	7900
123	Shanta	Vollman	6500
124	Kevin	Mourgos	5800
145	John	Russell	14000
146	Karen	Partners	13500
147	Alberto	Errazuriz	12000
148	Gerald	Cambrault	11000
149	Eleni	Zlotkey	10500

2. WHERE 절

- 급여가 2400 이하이거나 20000 이상인 사원 조회

  SELECT *

  FROM employees

  WHERE salary **<= 2400**

       OR salary **>= 20000**;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
100	Steven	King	SKING	515.123.4567	2003-06-17 00:00:00	AD_PRES	24000	(null)	(null)	90
127	James	Landry	JLANDRY	650.124.1334	2007-01-14 00:00:00	ST_CLERK	2400	(null)	120	50
128	Steven	Markle	SMARKLE	650.124.1434	2008-03-08 00:00:00	ST_CLERK	2200	(null)	120	50
132	TJ	Olson	TJOLSON	650.124.8234	2007-04-10 00:00:00	ST_CLERK	2100	(null)	121	50
135	Ki	Gee	KGEE	650.127.1734	2007-12-12 00:00:00	ST_CLERK	2400	(null)	122	50
136	Hazel	Philtanker	HPHILTAN	650.127.1634	2008-02-06 00:00:00	ST_CLERK	2200	(null)	122	50

2. WHERE 절

· **WHERE 조건 절 작성 시 주의 사항**

   - 문자 혹은 문자열 데이터 비교 시, 오라클은 <u>대소문자를 구분</u>함

   - 대소문자를 구분하지 않는 DBMS도 상당 수
    예) MSSQL, MYSQL

 - 문자 값 비교 시 작은 따옴표(')로 둘러싸야 한다

2. WHERE 절

· **last_name이 Grant인 사원 조회**

 SELECT *

 FROM employees

 WHERE last_name = **'grant'** **;**

◊ EMPLO...	◊ FIRST_N...	◊ LAST_N...	◊ EMAIL	◊ PHONE_...	◊ HIRE_DA...	◊ JOB_ID	◊ SALARY	◊ COMMI...	◊ MANAG...	◊ DEPART...

21

2. WHERE 절

· **last_name이 Grant인 사원 조회**

SELECT *

FROM employees

WHERE last_name = 'Grant' ;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
199	Douglas	Grant	DGRANT	650.507.9844	2008-01-13 00:00:00	SH_CLERK	2600	(null)	124	50
178	Kimberely	Grant	KGRANT	011.44.1644.429263	2007-05-24 00:00:00	SA_REP	7000	0.15	149	(null)

3. ORDER BY 절

- SELECT 문과 함께 사용해 데이터를 정렬해 조회

- ORDER BY 컬럼1 [ASC | DESC], 컬럼2 [ASC |DESC], ... 형태

- 오름차순 정렬 : ASC, 생략 가능

- 내림차순 정렬 : DESC

- 컬럼 명이 아닌 SELECT 절에 기술한 컬럼 순서로 명시 가능
  (예, ORDER BY 1, 2, 3 ....)

3. ORDER BY 절

· 사번 순으로 정렬

SELECT *

FROM employees

ORDER BY employee_id;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_
100	Steven	King	SKING	515.123.4567	2003-06-17 00:00:00	AD_P
101	Neena	Kochhar	NKOCHHAR	515.123.4568	2005-09-21 00:00:00	AD_V
102	Lex	De Haan	LDEHAAN	515.123.4569	2001-01-13 00:00:00	AD_V
103	Alexander	Hunold	AHUNOLD	590.423.4567	2006-01-03 00:00:00	IT_P
104	Bruce	Ernst	BERNST	590.423.4568	2007-05-21 00:00:00	IT_P
105	David	Austin	DAUSTIN	590.423.4569	2005-06-25 00:00:00	IT_P
106	Valli	Pataballa	VPATABAL	590.423.4560	2006-02-05 00:00:00	IT_P
107	Diana	Lorentz	DLORENTZ	590.423.5567	2007-02-07 00:00:00	IT_P
108	Nancy	Greenberg	NGREENBE	515.124.4569	2002-08-17 00:00:00	FI_M
109	Daniel	Faviet	DFAVIET	515.124.4169	2002-08-16 00:00:00	FI_A
110	John	Chen	JCHEN	515.124.4269	2005-09-28 00:00:00	FI_A
111	Ismael	Sciarra	ISCIARRA	515.124.4369	2005-09-30 00:00:00	FI_A
112	Jose Manuel	Urman	JMURMAN	515.124.4469	2006-03-07 00:00:00	FI_A
113	Luis	Popp	LPOPP	515.124.4567	2007-12-07 00:00:00	FI_A
114	Den	Raphaely	DRAPHEAL	515.127.4561	2002-12-07 00:00:00	PU_M
115	Alexander	Khoo	AKHOO	515.127.4562	2003-05-18 00:00:00	PU_C
116	Shelli	Baida	SBAIDA	515.127.4563	2005-12-24 00:00:00	PU_C
117	Sigal	Tobias	STOBIAS	515.127.4564	2005-07-24 00:00:00	PU_C

3. ORDER BY 절

- 사번 순으로 내림차순 정렬

 SELECT *

 FROM employees

 ORDER BY employee_id desc;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID
206	William	Gietz	WGIETZ	515.123.8181	2002-06-07 00:00:00	AC_ACC
205	Shelley	Higgins	SHIGGINS	515.123.8080	2002-06-07 00:00:00	AC_MGR
204	Hermann	Baer	HBAER	515.123.8888	2002-06-07 00:00:00	PR_REP
203	Susan	Mavris	SMAVRIS	515.123.7777	2002-06-07 00:00:00	HR_REP
202	Pat	Fay	PFAY	603.123.6666	2005-08-17 00:00:00	MK_REP
201	Michael	Hartstein	MHARTSTE	515.123.5555	2004-02-17 00:00:00	MK_MAN
200	Jennifer	Whalen	JWHALEN	515.123.4444	2003-09-17 00:00:00	AD_ASS
199	Douglas	Grant	DGRANT	650.507.9844	2008-01-13 00:00:00	SH_CLE
198	Donald	OConnell	DOCONNEL	650.507.9833	2007-06-21 00:00:00	SH_CLE
197	Kevin	Feeney	KFEENEY	650.507.9822	2006-05-23 00:00:00	SH_CLE
196	Alana	Walsh	AWALSH	650.507.9811	2006-04-24 00:00:00	SH_CLE
195	Vance	Jones	VJONES	650.501.4876	2007-03-17 00:00:00	SH_CLE
194	Samuel	McCain	SMCCAIN	650.501.3876	2006-07-01 00:00:00	SH_CLE
193	Britney	Everett	BEVERETT	650.501.2876	2005-03-03 00:00:00	SH_CLE
192	Sarah	Bell	SBELL	650.501.1876	2004-02-04 00:00:00	SH_CLE
191	Randall	Perkins	RPERKINS	650.505.4876	2007-12-19 00:00:00	SH_CLE
190	Timothy	Gates	TGATES	650.505.3876	2006-07-11 00:00:00	SH_CLE

3. ORDER BY 절

· 이름, 성 순으로 오름차순 정렬

SELECT *

FROM employees

ORDER BY first_name, last_name;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
121	Adam	Fripp	AFRIPP	650.123.2234	2005-04-10 00:00:00	ST_MAN	8200	(null)	100	50
196	Alana	Walsh	AWALSH	650.507.9811	2006-04-24 00:00:00	SH_CLERK	3100	(null)	124	50
147	Alberto	Errazuriz	AERRAZUR	011.44.1344.429278	2005-03-10 00:00:00	SA_MAN	12000	0.3	100	80
103	Alexander	Hunold	AHUNOLD	590.423.4567	2006-01-03 00:00:00	IT_PROG	9000	(null)	102	60
115	Alexander	Khoo	AKHOO	515.127.4562	2003-05-18 00:00:00	PU_CLERK	3100	(null)	114	30
185	Alexis	Bull	ABULL	650.509.2876	2005-02-20 00:00:00	SH_CLERK	4100	(null)	121	50
158	Allan	McEwen	AMCEWEN	011.44.1345.829268	2004-08-01 00:00:00	SA_REP	9000	0.35	146	80
175	Alyssa	Hutton	AHUTTON	011.44.1644.429266	2005-03-19 00:00:00	SA_REP	8800	0.25	149	80
167	Amit	Banda	ABANDA	011.44.1346.729268	2008-04-21 00:00:00	SA_REP	6200	0.1	147	80
187	Anthony	Cabrio	ACABRIO	650.509.4876	2007-02-07 00:00:00	SH_CLERK	3000	(null)	121	50
193	Britney	Everett	BEVERETT	650.501.2876	2005-03-03 00:00:00	SH_CLERK	3900	(null)	123	50
104	Bruce	Ernst	BERNST	590.423.4568	2007-05-21 00:00:00	IT_PROG	6000	(null)	103	60
179	Charles	Johnson	CJOHNSON	011.44.1644.429262	2008-01-04 00:00:00	SA_REP	6200	0.1	149	80
153	Christopher	Olsen	COLSEN	011.44.1344.498718	2006-03-30 00:00:00	SA_REP	8000	0.2	145	80
162	Clara	Vishney	CVISHNEY	011.44.1346.129268	2005-11-11 00:00:00	SA_REP	10500	0.25	147	80
142	Curtis	Davies	CDAVIES	650.121.2994	2005-01-29 00:00:00	ST_CLERK	3100	(null)	124	50
109	Daniel	Faviet	DFAVIET	515.124.4169	2002-08-16 00:00:00	FI_ACCOUNT	9000	(null)	108	100
163	Danielle	Greene	DGREENE	011.44.1346.229268	2007-03-19 00:00:00	SA_REP	9500	0.15	147	80
105	David	Austin	DAUSTIN	590.423.4569	2005-06-25 00:00:00	IT_PROG	4800	(null)	103	60
151	David	Bernstein	DBERNSTE	011.44.1344.345268	2005-03-24 00:00:00	SA_REP	9500	0.25	145	80
165	David	Lee	DLEE	011.44.1346.529268	2008-02-23 00:00:00	SA_REP	6800	0.1	147	80
114	Den	Raphaely	DRAPHEAL	515.127.4561	2002-12-07 00:00:00	PU_MAN	11000	(null)	100	30

3. ORDER BY 절

- 이름은 오름차순, 성은 내림차순으로 정렬

SELECT employee_id, first_name, last_name

FROM employees

ORDER BY first_name, last_name desc;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
121	Adam	Fripp
196	Alana	Walsh
147	Alberto	Errazuriz
115	Alexander	Khoo
103	Alexander	Hunold
185	Alexis	Bull
158	Allan	McEwen
175	Alyssa	Hutton
167	Amit	Banda
187	Anthony	Cabrio
193	Britney	Everett
104	Bruce	Ernst
179	Charles	Johnson
153	Christopher	Olsen
162	Clara	Vishney
142	Curtis	Davies
109	Daniel	Faviet
163	Danielle	Greene
165	David	Lee

3. ORDER BY 절

· 사원의 **사번**과 **이름, 급여**를 급여가 **5000 이상**인 급여가 <u>**높은 순서**</u>로 보고 싶다

SELECT employee_id, first_name, last_name, salary

FROM employees

WHERE salary >= 5000

ORDER BY salary desc;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY
100	Steven	King	24000
101	Neena	Kochhar	17000
102	Lex	De Haan	17000
145	John	Russell	14000
146	Karen	Partners	13500
201	Michael	Hartstein	13000
108	Nancy	Greenberg	12008
205	Shelley	Higgins	12008
147	Alberto	Errazuriz	12000
168	Lisa	Ozer	11500
148	Gerald	Cambrault	11000
174	Ellen	Abel	11000
114	Den	Raphaely	11000
162	Clara	Vishney	10500
149	Eleni	Zlotkey	10500
156	Janette	King	10000
169	Harrison	Bloom	10000
150	Peter	Tucker	10000
204	Hermann	Baer	10000
170	Tayler	Fox	9600
163	Danielle	Greene	9500
157	Patrick	Sully	9500
151	David	Bernstein	9500
109	Daniel	Faviet	9000

3. ORDER BY 절

· 숫자를 명시해 정렬 1

SELECT *

FROM employees

ORDER BY 2, 3 desc;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
121	Adam	Fripp
196	Alana	Walsh
147	Alberto	Errazuriz
115	Alexander	Khoo
103	Alexander	Hunold
185	Alexis	Bull

3. ORDER BY 절

· 숫자를 명시해 정렬 2

SELECT employee_id, first_name, last_name, email

FROM employees

ORDER BY 2, 3, 5;

숫자는 반드시 **select** 절에 명시한 컬럼 순번이어야 함

질의 결과

SQL | 실행 중:SELECT employee_id, first_name, last_name, emailFROM

ORA-01785: ORDER BY 항목은 SELECT 목록 식의 수라야 합니다
01785. 00000 - "ORDER BY item must be the number of a SELECT-list expression"
*Cause:
*Action:
3행, 16열에서 오류 발생
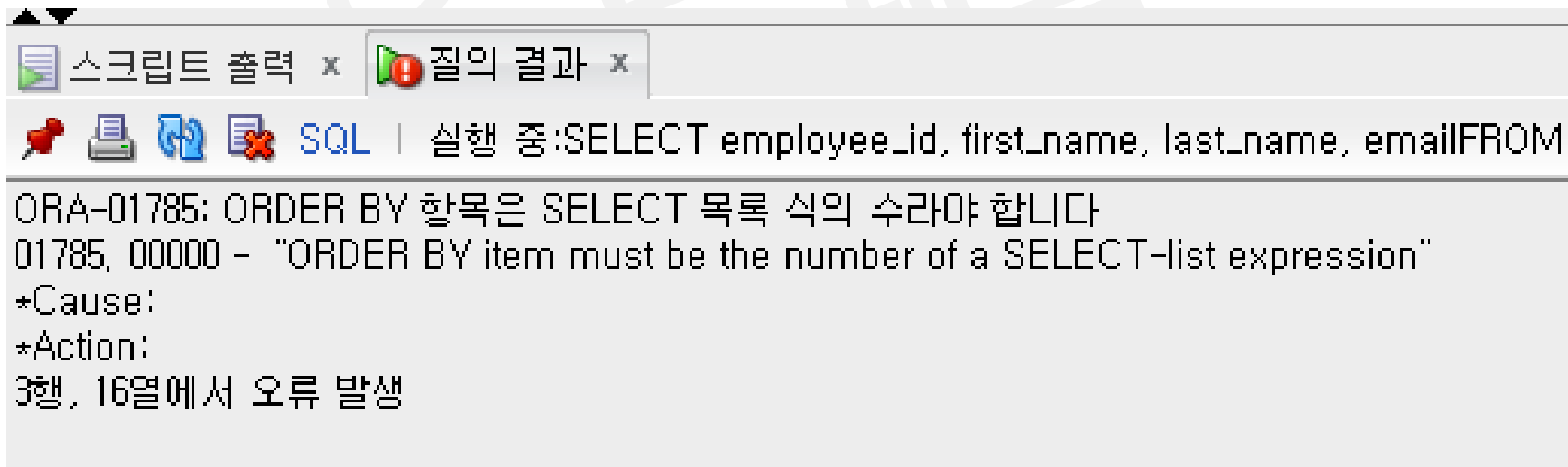
3. ORDER BY 절

· 숫자를 명시해 정렬 3

select 절에 없더라도
컬럼 이름으로 정렬 가능

SELECT employee_id, first_name, last_name, email

FROM employees

ORDER BY 2, 3, phone_number;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL
121	Adam	Fripp	AFRIPP
196	Alana	Walsh	AWALSH
147	Alberto	Errazuriz	AERRAZUR
103	Alexander	Hunold	AHUNOLD
115	Alexander	Khoo	AKHOO
185	Alexis	Bull	ABULL
158	Allan	McEwen	AMCEWEN
175	Alyssa	Hutton	AHUTTON
167	Amit	Banda	ABANDA
187	Anthony	Cabrio	ACABRIO
193	Britney	Everett	BEVERETT
104	Bruce	Ernst	BERNST
179	Charles	Johnson	CJOHNSON

3. ORDER BY 절

· **commission_pct 컬럼으로 오름차순 정렬**

SELECT employee_id, first_name, last_name, commission_pct

FROM employees

ORDER BY commission_pct;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	COMMISSION_PCT
165	David	Lee	0.1
179	Charles	Johnson	0.1
164	Mattea	Marvins	0.1
167	Amit	Banda	0.1
173	Sundita	Kumar	0.1
166	Sundar	Ande	0.1
163	Danielle	Greene	0.15
178	Kimberely	Grant	0.15
155	Oliver	Tuvault	0.15
172	Elizabeth	Bates	0.15
171	William	Smith	0.15
176	Jonathon	Taylor	0.2
169	Harrison	Bloom	0.2
170	Tayler	Fox	0.2
154	Nanette	Cambrault	0.2
177	Jack	Livingston	0.2
149	Eleni	Zlotkey	0.2
153	Christopher	Olsen	0.2
161	Sarath	Sewall	0.25
152	Peter	Hall	0.25
151	David	Bernstein	0.25

3. ORDER BY 절

- **commission_pct 컬럼으로 내링차순 정렬**

SELECT employee_id, first_name, last_name, commission_pct

FROM employees

ORDER BY commission_pct desc;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	COMMISSION_PCT
198	Donald	OConnell	(null)
199	Douglas	Grant	(null)
200	Jennifer	Whalen	(null)
201	Michael	Hartstein	(null)
202	Pat	Fay	(null)
203	Susan	Mavris	(null)
204	Hermann	Baer	(null)
205	Shelley	Higgins	(null)
206	William	Gietz	(null)
100	Steven	King	(null)
101	Neena	Kochhar	(null)
102	Lex	De Haan	(null)

3. ORDER BY 절

· NULL 값 정렬 방법

  - NULLS FIRST : NULL 값을 먼저

  - NULLS LAST : NULL 값을 나중에

3. ORDER BY 절

· **NULLS FIRST**

SELECT employee_id, first_name, last_name, commission_pct

FROM employees

ORDER BY commission_pct NULLS FIRST;

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	COMMISSION_PCT
1	100	Steven	King	(null)
2	101	Neena	Kochhar	(null)
3	102	Lex	De Haan	(null)
4	103	Alexander	Hunold	(null)
5	104	Bruce	Ernst	(null)
6	105	David	Austin	(null)
7	106	Valli	Pataballa	(null)
8	107	Diana	Lorentz	(null)
9	108	Nancy	Greenberg	(null)
10	109	Daniel	Faviet	(null)
11	110	John	Chen	(null)
12	111	Ismael	Sciarra	(null)
13	112	Jose Manuel	Urman	(null)
14	113	Luis	Popp	(null)
15	114	Den	Raphaely	(null)
16	115	Alexander	Khoo	(null)
17	116	Shelli	Baida	(null)
18	117	Sigal	Tobias	(null)
19	118	Guy	Himuro	(null)
20	119	Karen	Colmenares	(null)
21	120	Matthew	Weiss	(null)
22	121	Adam	Fripp	(null)
23	122	Payam	Kaufling	(null)
24	123	Shanta	Vollman	(null)
25	124	Kevin	Mourgos	(null)

3. ORDER BY 절

- **NULLS LAST**

 SELECT employee_id, first_name, last_name, commission_pct

 FROM employees

ORDER BY commission_pct **NULLS LAST;**

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	COMMISSION_PCT
1	165	David	Lee	0.1
2	179	Charles	Johnson	0.1
3	164	Mattea	Marvins	0.1
4	167	Amit	Banda	0.1
5	173	Sundita	Kumar	0.1
6	166	Sundar	Ande	0.1
7	163	Danielle	Greene	0.15
8	178	Kimberely	Grant	0.15
9	155	Oliver	Tuvault	0.15
10	172	Elizabeth	Bates	0.15
11	171	William	Smith	0.15
12	176	Jonathon	Taylor	0.2
13	169	Harrison	Bloom	0.2
14	170	Tayler	Fox	0.2
15	154	Nanette	Cambrault	0.2
16	177	Jack	Livingston	0.2
17	149	Eleni	Zlotkey	0.2
18	153	Christopher	Olsen	0.2
19	161	Sarath	Sewall	0.25
20	152	Peter	Hall	0.25
21	151	David	Bernstein	0.25
22	162	Clara	Vishney	0.25
23	175	Alyssa	Hutton	0.25
24	168	Lisa	Ozer	0.25

학습정리

- SELECT문은 테이블에 저장된 데이터를 조회하는 **SQL** 문이다.

- **SELECT** 문은 크게 **SELECT, FROM, WHERE, ORDER BY** 절로 구성되어 있다.

- **SELECT** 절에는 보고자 하는 컬럼들을, **FROM**절에는 테이블을 명시한다.

- 특정 조건에 맞는 데이터를 조회할 때는 **WHERE** 절을 사용하고, 조회하는 컬럼 값으로

  정렬해 데이터를 보고자 할 경우에는 **ORDER BY** 절을 사용한다.

Quiz

1. SELECT 문은 테이블에 있는 데이터를 조회하는 SQL 문장으로 특정 조건에 맞는 데이터를 선별하거나 특정 컬럼 별로 정렬해 데이터를 조회할 수 있다.

38

Quiz

2. 다음 문장의 WHERE 절에서 OR 연산자를 AND로 바꾸면 결과는 어떻게 될까요?

SELECT *		**SELECT** *
FROM employees		**FROM employees**
WHERE salary <= 2400	➡	**WHERE salary <= 2400**
OR salary >= 20000;		**AND salary >= 20000;**

Quiz

3. SELECT문에서 데이터를 정렬해 보려면 ORDER BY 절을 사용하는데, 기본적인 정렬 방법은 내림차순 이다.

Quiz

4. LOCATIONS 테이블은 부서의 주소 관련 데이터가 담겨 있습니다. 이 테이블의 컬럼과 데이터 형(타입), 각 컬럼의 **NULL** 허용 여부를 찾아 정리해 보세요.

Quiz

5. LOCATIONS 테이블에서 LOCATION_ID 값이 2000보다 크거나 같고 3000 보다 작은 건을 조회하는 문장을 작성해 보세요.

Quiz

6. EMPLOYEES 테이블에서 FIRST_NAME이 'David'이고 급여가 6000이상인 사람이 속한 부서가 위치한 도시를 찾는 문장을 작성해 보세요. (힌트: 3개의 문장이 필요함)