i2i Systems
innovation to integration

i2i Academy

Training Document

Topic	Oracle SQL Language Fundamentals I
Document Name	SQL03-EX-01-05

Exercise SQL03-EX-01:

Definiton : Write followig SQL queries:

- Add a colum to employees table named MAX_SALARY.
- Update MAX_SALARY with maximum salary amount with subquery.
- Delete employee who have minimum salary using subquery.

SQL:

```
ALTER TABLE HR.employees ADD (Max_Salary NUMBER (8));


UPDATE HR.EMPLOYEES

SET Max_Salary = (SELECT MAX(salary) FROM HR.employees

);

DELETE FROM HR.employees

WHERE salary = (SELECT MIN(salary) FROM HR.employees);
```

Screenshot:

	YEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID	MAX_SALARY
1	100	Steven	King	SKING	515.123.4567	17/06/2003	AD_PRES	24000			90	24000
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21/09/2005	AD_VP	17000		100	90	24000
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13/01/2001	AD_VP	17000		100	90	24000
4	103	Alexander	Hunold	AHUNOLD	590.423.4567	03/01/2006	IT_PROG	9000		102	60	24000
5	104	Bruce	Ernst	BERNST	590.423.4568	21/05/2007	IT_PROG	6000		103	60	24000
6	105	David	Austin	DAUSTIN	590.423.4569	25/06/2005	IT_PROG	4800		103	60	24000
7	106	Valli	Pataballa	VPATABAL	590.423.4560	05/02/2006	IT_PROG	4800		103	60	24000
8	107	Diana	Lorentz	DLORENTZ	590.423.5567	07/02/2007	IT_PROG	4200		103	60	24000
9	108	Nancy	Greenberg	NGREENBE	515.124.4569	17/08/2002	FI_MGR	12008		101	100	24000

```
Table HR.EMPLOYEES altered.


107 rows updated.


1 row deleted.
```

Exercise SQL03-EX-02:

Definiton : Write followig SQL queries:

- Define index (named DPR_NAME_IDX) on DEPARTMENT_NAME column of DEPARTMENTS table.
- Define constraint (named CNSTR_SALARY) on employee salary. (Salary must be between 1000$ and 100.000$)
- Drop defined index.
- Enable, disable, drop defined constraint.

SQL:

```
CREATE INDEX DPR_NAME_IDX ON HR.departments (department_name);

ALTER TABLE HR.employees ADD CONSTRAINT CNSTR_SALARY

CHECK (salary>1000 AND salary<100000);

DROP INDEX DPR_NAME_IDX;

ALTER TABLE HR.employees ENABLE CONSTRAINT CNSTR_SALARY;

ALTER TABLE HR.employees DISABLE CONSTRAINT CNSTR_SALARY;

ALTER TABLE HR.employees DROP CONSTRAINT CNSTR_SALARY;
```

Screenshot:

```
Index DPR_NAME_IDX created.

Table HR.EMPLOYEES altered.

Index DPR_NAME_IDX dropped.

Table HR.EMPLOYEES altered.

Table HR.EMPLOYEES altered.

Table HR.EMPLOYEES altered.
```

Exercise SQL03-EX-03:

Definiton : Create a table from EMPLOYEES with distinct department_id column. Add department_name to that table. With DEPARTMENTS table, update department_name for included department_ids and insert department_id and department_name values for not included rows. Use MERGE keyword.

SQL:

```
CREATE TABLE NEW_TABLE AS (SELECT department_id FROM HR.departments);


ALTER TABLE NEW_TABLE ADD (department_name VARCHAR2(30));


MERGE INTO NEW_TABLE t USING (SELECT * FROM HR.departments) d ON

(t.department_id = d.department_id) WHEN MATCHED THEN

UPDATE SET t.department_name = d.department_name;
```

Screenshot:

	DEPARTMENT_ID	DEPARTMENT_NAME
1	10	Administration
2	20	Marketing
3	30	Purchasing
4	40	Human Resources
5	50	Shipping
6	60	IT
7	70	Public Relations
8	80	Sales

Exercise SQL03-EX-04:

Definiton : Using **WITH** keyword, do following jobs:

- Firstly select first_name, last_name, job_id, department_id from employees table whoes job_id starts with 'S'.
- Additionally select job_title and min-max salary amount.
- Add department_name to that query.
- Lastly concat first_name and last_name with space as full_name alias and list with other selected columns.

SQL:

```
WITH MY_EMPLOYEES AS (SELECT FIRST_NAME,LAST_NAME,JOB_ID,DEPARTMENT_ID

FROM HR.EMPLOYEES WHERE FIRST_NAME LIKE 'S%'),

JOB_MAX_MIN AS (SELECT JOB_ID,JOB_TITLE,MIN_SALARY,MAX_SALARY FROM HR.JOBS),

DEP_DETAIL AS (SELECT DEPARTMENT_ID,DEPARTMENT_NAME FROM HR.DEPARTMENTS)

SELECT

e.first_name,

e.last_name,

e.job_id,

e.department_id,

j.job_title,

j.min_salary,

j.max_salary,

d.department_name,

e.first_name || ' ' || e.last_name AS full_name

FROM MY_EMPLOYEES e

JOIN JOB_MAX_MIN j ON e.job_id = j.job_id

JOIN DEP_DETAIL d ON e.department_id = d.department_id;
```

Screenshot:

	FIRST_NAME	LAST_NAME	JOB_ID	DEPARTMENT_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY	DEPARTMENT_NAME	FULL_NAME
1	Shelley	Higgins	2	11	Accounting Manager	8200	16000	Accounting	Shelley Higgins
2	Steven	King	4	9	President	20000	40000	Executive	Steven King
3	Susan	Mavris	8	4	Human Resources Representative	4000	9000	Human Resources	Susan Mavris
4	Shelli	Baida	13	3	Purchasing Clerk	2500	5500	Purchasing	Shelli Baida
5	Sigal	Tobias	13	3	Purchasing Clerk	2500	5500	Purchasing	Sigal Tobias
6	Sarah	Bell	17	5	Shipping Clerk	2500	5500	Shipping	Sarah Bell
7	Shanta	Vollman	19	5	Stock Manager	5500	8500	Shipping	Shanta Vollman

Exercise SQL03-EX-05:

Definiton : Search for COMMIT and ROLLBACK keywords and explain them.

The “COMMIT” statement is used to permanently save the changes made in a transaction to the database permanently.

The “ROLLBACK” statement is used to undo the changes made in a transaction and return the database to previous state before the transaction began.

SQL:

COMMIT

ROLLBACK

Screenshot:

```
Commit complete.

Rollback complete.
```