09. View

1. View

❑ 정의

A logical table based on a table or another view, A view **contains no data of its own**,
but is rather **like a "window"** through which data from table **can be viewed or changed**.
the view is **stored as a SELECT statement in the data dictionary.** maximum nesting of 255 subquery levels

❑ 동작원리

① Stored Query

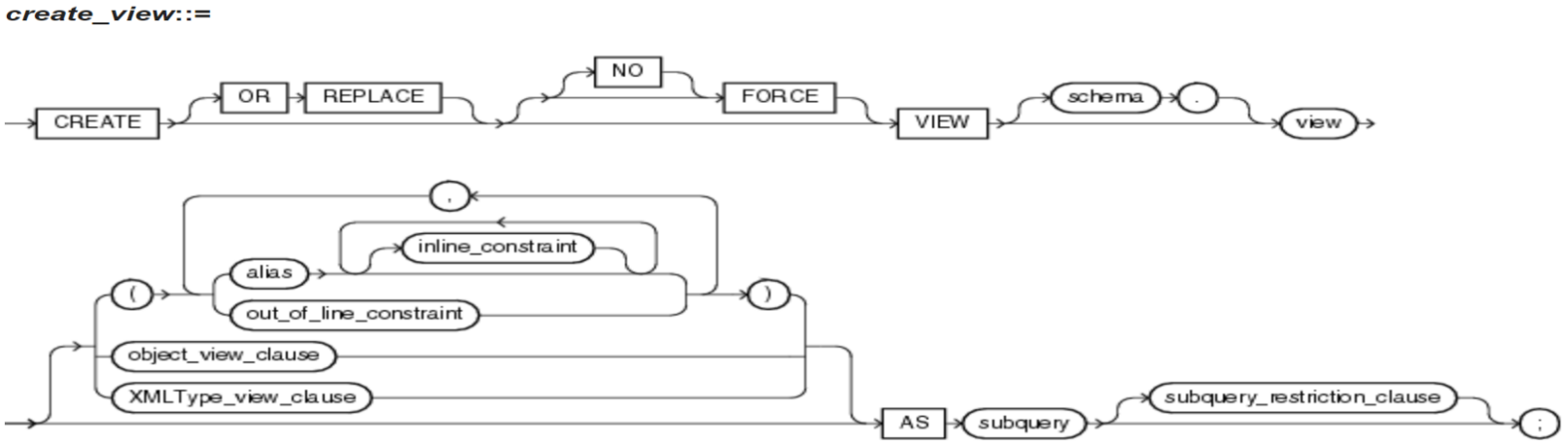
- oracle store view's definition as a text therefore not space, not indexed

* 데이터를 가지고 있지 않지만 테이블의 역할을 동일하게 수행하기 때문에 가상 테이블(Virtual Table)로 불리기도 한다.

② Merge

- 질의(Query)를 재작성(Rewrite, Merge)하여 수행

❑ Syntax



1. View

❑ 종류

View
Inline View
Materialized View
Partition View
Object View

❑ 용도

(1) 보안성(Restrict database access)

① CREATE VIEW VW_EMP(ENO,E_NAME,DNO,SAL)
AS SELECT EMPNO,ENAME,DEPTNO,SAL
FROM EMP
WHERE SAL > 1500; // Base data의 COLUMN,ROW 제한

* system> grant create view to scott;

② desc vw_emp // a logical table
select * from tab;

③ select * from vw_emp;
select dno,e_name,sal from vw_emp where dno in (10,20);
select deptno,ename from emp where deptno in (10,20) and sal > 1500; // Merge
select dno,e_name,sal from vw_emp where dno in (10,20); // Restrict

1. View

❑ 용도

(2) 편리성 (Simplify queries)

① CREATE VIEW VW_SIMPLE

AS SELECT EMP.EMPNO,EMP.ENAME,DEPT.DNAME,SALGRADE.GRADE AS GD

FROM EMP, DEPT, SALGRADE

WHERE EMP.DEPTNO = DEPT.DEPTNO AND

EMP.SAL BETWEEN SALGRADE.LOSAL AND SALGRADE.HISAL;

② desc vw_simple // NOT NULL, DATA TYPE

이름	널?	유형
EMPNO	NOT NULL	NUMBER(4)
ENAME		VARCHAR2(10)
DNAME		VARCHAR2(14)
GD		NUMBER

select * from tab;

③ select * from vw_simple; // 만능뷰(?)

1. View

❑ 용도

(3) 독립성(Data Independence)

* 테이블구조 변경시 View를 사용하는 응용 프로그램을 변경하지 않아도 되는.
(Isolate applications from changes in definitions of base tables)

① CREATE TABLE BASE_TBL(EMPNO_NEW,ENAME_NEW)
AS SELECT EMPNO,ENAME
FROM EMP
WHERE JOB IN ('CLERK','SALESMAN');

② desc base_tbl
select * from tab;

③ CREATE VIEW VW_IND AS SELECT * FROM BASE_TBL;
SELECT * FROM VW_IND;

④ ALTER TABLE BASE_TBL ADD(NEW_COL DATE); // base table 구조 변경

⑤ SELECT * FROM VW_IND; // Independence of base table change
SELECT EMPNO_NEW,ENAME_NEW FROM VW_IND;

1. View

❑ 용도

(4) 다변성 (different appearances for the same data)

* 동일한 데이타도 USER, 시간에 따라 다른 데이타 결과를 보여줄수 있다 EX) DBA_TABLES, USER_TABLE

```
① CREATE TABLE  DBA_TBLS                                          // System 계정에서 실습
   AS  SELECT OWNER,TABLE_NAME FROM DBA_TABLES;

   SELECT  *   FROM  DBA_TBLS;
   SELECT OWNER,COUNT(*)                                          // System , Scott owner의 테이블 갯수 확인.
   FROM  DBA_TBLS
   GROUP BY OWNER;

② CREATE OR REPLACE VIEW  VW_DIFF                                 // View 생성
    AS  SELECT  *   FROM   DBA_TBLS    WHERE OWNER = USER;

   SELECT   *  FROM  VW_DIFF;                                     // System owner의 데이터만 조회
   SELECT   count(*)  FROM  VW_DIFF;

③  GRANT SELECT ON VW_DIFF  TO PUBLIC;                           // DBMS내의 모든 사용자에게 SELECT 권한부여

④ SELECT   *  FROM  VW_DIFF;                                     // Scott 계정에서 실습
   SELECT   count(*)  FROM  VW_DIFF;                              // Scott owner의 데이터만 조회  ??
```

1. View

❑ View Merge (in all possible case)

① [VIEW 정의]

```
CREATE  VIEW  VW_DEPTEMP
AS  SELECT  E.EMPNO,E.ENAME,E.SAL,D.DNAME
      FROM   EMP  E, DEPT D
      WHERE  E.DEPTNO = D.DEPTNO;
```

② [VIEW 질의]

```
SELECT  *  FROM VW_DEPTEMP WHERE  DNAME  =  'SALES';
```

③ [VIEW 처리]

```
SELECT   E.EMPNO,E.ENAME,E.SAL,D.DEPTNO,D.DNAME
FROM    EMP  E,  DEPT D
WHERE   E.DEPTNO = D.DEPTNO  AND  D.DNAME = 'SALES';
```

④ [Stored Query]

```
SELECT VIEW_NAME,TEXT FROM USER_VIEWS;
```

1. View

❑ Object dependency

① [Base Table]
CREATE TABLE BASE_TBL(EMPNO_NEW,ENAME_NEW)
AS SELECT EMPNO,ENAME
FROM EMP
WHERE JOB IN ('CLERK','SALESMAN');

[View]
CREATE VIEW VW_IND AS SELECT * FROM BASE_TBL;

② SELECT OBJECT_NAME,STATUS FROM USER_OBJECTS WHERE OBJECT_NAME ='VW_IND'; // Valid
DROP TABLE BASE_TBL;
SELECT OBJECT_NAME,STATUS FROM USER_OBJECTS WHERE OBJECT_NAME ='VW_IND'; // Invalid

③ Base Table 재생성

④ SELECT OBJECT_NAME,STATUS FROM USER_OBJECTS WHERE OBJECT_NAME ='VW_IND'; // Valid

⑤ drop view vw_ind;
* Data dictionary에 view의 정의가 SQL 형태로 저장이 되어 있기 때문에 drop view는 Data dictionary 에서 VIEW의 정의 삭제.

1. View

❑ 과제

1) 기 생성된 VW_EMP를 BASE TABLE로 하여 JOB이 CLERK과 MANAGER인
조건의 VIEW를 생성하십시요

2) 과제1에서 생성한 VIEW를 Am 09:30분부터 Pm 14:56 까지만 SELECT 되도록 변경하십시요

3) 예제로 작성한 모든 VIEW를 DROP 할수 있는 SQL Script 파일을 생성 하십시요

4) VIEW에서 보이는 데이터에 DML 연산이 가능하도록 View를 생성하는 방법을 확인 하십시요

5) Mview(Materialized)의 정의, 특징 ,용도, 생성방법을 조사하여 발표 하십시요.

6) 2P ①③ 예제를 WITH절(Subquery factoring ➔ Temp table)을 사용하여 동일하게 변환하시오

```
WITH v_emp_sal_high_1500 AS (SELECT  EMPNO,ENAME,DEPTNO as DNO,SAL FROM EMP WHERE  SAL > 1500)
SELECT dno,ename,sal FROM v_emp_sal_high_1500 WHERE dno in (10,20);
```