Ex.No. 3	I N T E G R I T Y C O N S T R A I N T S	Date :

CONSTRAINTS

- Constraints enforce rules at the table level.Constraints prevent the deletion of a table if there are dependencies.
- The following constraint types are valid in Oracle:
  - NOT NULL
  - UNIQUE Key
  - PRIMARY KEY
  - FOREIGN KEY
  - CHECK
- Name a constraint or the Oracle Server will generate a name by using the SYS_C*n* format.
- Create a constraint:
  - At the same time as the table is created
  - After the table has been created
- Define a constraint at the column or table level.
- View a constraint in the data dictionary.

DEFINING CONSTRAINTS

- Column constraint level

  column* [CONSTRAINT *constraint_name*] *constraint_type
- Table constraint level

  [CONSTRAINT *constraint_name*] *constraint_type*(*column*)

CREATE TABLE *table* (*column data type, column_constraint*,
…. …. ....,
… … …,
***table_constraint*);**

Q1) Create table EMP1 with columns similar to EMP table and create NOT NULL (column) constraint for DEPTNO column and PRIMARY KEY (table) constraint for EMPNO column.

```
SQL> CREATE TABLE emp1( empno  number(4),
        ename  varchar2(10), job char(20), mgr number(10),
        hiredate date, sal number(5), comm number(5),
        deptno  number(7,2) NOT NULL,
        CONSTRAINT emp1_pk  PRIMARY KEY (empno));
```

NOT NULL Constraint

- Ensures that null values are not permitted for the column

CHECK Constraint

- Defines a condition that each row must satisfy

UNIQUE Constraint

- Prevent the duplication of values within the rows of a specified column

PRIMARY KEY Constraint

- Avoids duplication of rows and does not allow NULL values

FOREIGN KEY Constraint

- To establish a 'parent-child' or a 'master-detail' relationship between two tables having a common column, we make use of Foreign key (referential integrity) constraints.
- To do this we should define the column in the parent table as primary key and the same column in the child table as a foreign key referring to the corresponding parent entry.

FOREIGN KEY

- Defines the column in the child table at the table constraint level

REFERENCES

- Identifies the table and column in the parent table

ON DELETE CASCADE

- Allows deletion in the parent table and deletion of the dependent rows in the child table

ADDING A CONSTRAINT

- Add or drop, but not modify, a constraint
- Add a NOT NULL constraint by using the MODIFY clause

ALTER TABLE *table* ADD CONSTRAINT *const-name* cons-*type* (*column*);

Q2) Add NOT NULL constraint to the columns ENAME and JOB of EMP table.

SQL> ALTER TABLE emp MODIFY(ename varchar2(20) NOT NULL,
job char(20) NOT NULL);

Q3) Add Primary key constraint to the column EMPNO of EMP table

SQL> ALTER TABLE emp ADD CONSTRAINT emp_pk
PRIMARY KEY(empno);

Q4) Add Primary key constraint to the column DEPTNO of DEPT table

SQL>

Q5) Add Unique key constraint to the column DNAME of DEPT table

SQL>

Q6) Add Check constraint to the table EMP to restrict the values of EMPNO lies between 7000 and 8000.

SQL> ALTER TABLE emp ADD CONSTRAINT emp_ck
CHECK(empno BETWEEN 7000 AND 8000)

Q7) Add Foreign key constraint to the column DEPTNO of EMP table references DEPTNO of DEPT table.

SQL> ALTER TABLE emp ADD CONSTRAINT emp_fk
FOREIGN KEY(deptno) REFERENCES DEPT(deptno);

Q8) Add a Foreign key constraint to the EMP1 table indicating that a manager must already exist as a valid employee in the EMP1 table.

SQL>

DROPING CONSTRAINTS

- Removing constraints from the table

ALTER TABLE *table* DROP CONSTRAINT *const-name;*

Q9) Remove the Manager constraint (added in Q8) from EMP table

SQL>

Q10) Remove the primary key constraint on the DEPT table and drop the associated foreign key constraint on the EMP.DEPTNO column.

SQL> ALTER TABLE dept DROP PRIMARY KEY CASCADE;

DISABLE and ENABLE Constraint

- Execute the DISABLE clause of the ALTER TABLE statement to deactivate an integrity constraint.
- Apply the CASCADE option to disable dependent integrity constraints.
- Activate an integrity constraint currently disabled in the table definition by using the ENABLE clause.
  A UNIQUE or PRIMARY KEY index is automatically created if you enable a UNIQUE key or PRIMARY KEY constraint.

Q11) Disable the primary key constraint of EMP table.

```
SQL>  ALTER TABLE emp DISABLE CONSTRAINT emp_pk CASCADE;
```

Q12) Enable the primary key constraint of EMP table.

```
SQL>
```

Q13) Query the USER_CONSTRAINTS table to view all constraint definitions and names

```
SQL> SELECT constraint_name,  constraint_type, search_condition
     FROM  user_constraints
     WHERE  table_name = 'EMP';
```

Q14) View the columns associated with the constraint names in the USER_CONS_COLUMNS view

```
SQL> SELECT  constraint_name, column_name
     FROM  user_cons_columns
     WHERE  table_name = 'EMP';
```

Verified by

Staff In-charge Sign :	**Date :**