

Sub-Queries & Constraints

SUB QUERIES: A select statement contains another select statement is known as “Sub Query”.

Sub Query contains 2 kinds of Queries those are

1. Outer Query
2. Inner Query

Outer query always depends on inner query result.

Syntax: SELECT * FROM <TABLE_NAME> WHERE (CONDITION) (SELECT * FROM <TABLE_NAME>.....(SELECT * FROM <TABLE_NAME>...));

ANY: The ANY comparison condition is used to compare a value to a list or sub query.

Example: SELECT T1.TID, T1.PRICE FROM TICKET T1 WHERE T1.PRICE > ANY (SELECT T2.PRICE FROM TICKET T2 WHERE T2.BNO = 40);

ALL: The ALL comparison condition is used to compare a value to a list or sub query.

Example: SELECT T1.TID, T1.PRICE FROM TICKET T1 WHERE T1.PRICE > ALL (SELECT T2.PRICE FROM TICKET T2 WHERE T2.BNO = 40);

IN: In operator will return the value as per given condition values.

Example: SELECT * FROM BUS WHERE BNO IN (10,20,40);

EXISTS & NOT EXIST: If sub query will return any value then EXISTS will be TRUE and NOT EXISTS will be FALSE

Example 1: SELECT * FROM TICKET T WHERE EXISTS (SELECT * FROM RESERVATION R WHERE T.TID=R.TID);

Example 2: SELECT * FROM TICKET T WHERE NOT EXISTS (SELECT * FROM RESERVATION R WHERE T.TID=R.TID);

UNION: Union operator will returns unique values from the tables.

Example: SELECT * FROM RESERVATION UNION SELECT * FROM CANCELLATION;

INTERSECT: Intersect operator will returns common values from the tables.

Example: SELECT * FROM RESERVATION INTERSECT SELECT * FROM CANCELLATION;

CONSTRAINTS: Constraints are used to restrict the insertion of unwanted data in the tables.

Types of Constraints:

1. Unique Key Constraint
2. Not Null Key Constraint
3. Check Key Constraint
4. Primary Key Constraint
5. Foreign Key Constraint

Syntax: CREATE TABLE <TABLE_NAME> (COLUMN_NAME1 DATA_TYPE SIZE CONSTRAINT_KEY..... COLUMN_NAMEn DATA_TYPE SIZE CONSTRAINT_KEY);

UNIQUE KEY CONSTRAINT:

Unique key constraint is used to avoid duplicate values but accept null values into a table. A table can contain multiple numbers of unique key constraints.

Example: CREATE TABLE PASSENGER (PID INT UNIQUE, PNAME VARCHAR(20), AGE INT);

NOT NULL KEY CONSTRAINT:

Not null key constraint is used to avoid null values but accept duplicate values into a table. A table can contain multiple numbers of not null key constraints.

Example: CREATE TABLE PASSENGER (PID INT NOT NULL, PNAME VARCHAR(20), AGE INT);

Example: CREATE TABLE PASSENGER (PID INT UNIQUE NOT NULL, PNAME VARCHAR(20), AGE INT);

CHECK KEY CONSTRAINT:

Check constraint is used to check the value of a column with user defined condition. A table can contain multiple numbers of check constraints.

Example: CREATE TABLE PASSENGER (PID INT, PNAME VARCHAR(20), AGE INT CHECK (AGE BETWEEN 18 AND 35));

PRIMARY KEY CONSTRAINT:

Primary key constraint is a combination of unique and not null constraint. By using primary key we can avoid duplicate and null values at a time. A table contains only one primary key.

Example: CREATE TABLE PASSENGER (PID INT PRIMARY KEY, PNAME VARCHAR(20), AGE INT);

FOREIGN KEY CONSTRAINT:

Foreign key constraint is used for relating or binding two tables with each other.

Example: CREATE TABLE RESERVATION (TID INT, JDATE DATE, STATUS VARCHAR(20), REMARKS VARCHAR (50), FOREIGN KEY(TID) REFERENCES TICKET(TID) ON UPDATE CASCADE ON DELETE CASCADE);