Database System

Lecture 9

SQL Sub Languages

DDL - Data Definition Language

TABLE CONSTRAINT

Check Constraint

Prepared By

Dhafer Sabah Yaseen

SQL Components Or SQL Sub Languages

DCL: Data Control Language
Example: Grant, Revoke.

DDL: Data Definition Language.
Example: Create, Alter, Drop, Rename and Truncate.

DML: Data Manipulation Language
Example: Insert, Update, Delete

DRL: Data Retrieval Language
Example: Select

TCL: Transaction Control Language
Example : Rollback, Commit, Savepoint

DDL - TABLE CONSTRAINT

Types of constraint

- Primary Key Constraint.
- Foreign Key constraint.
- Unique constraint.
- Check Constraint.
- Not NULL Constraint.
- Default Constraint.

DDL - TABLE CONSTRAINT

- ***CHECK Constraint***

What is a check constraint in Oracle?

A **check constraint** allows you to specify a condition on each row in a table.

Note :

- A check constraint can NOT be defined on a View .
- The check constraint defined on a table must refer to only columns in that table. It can not refer to columns in other tables.
- A check constraint can NOT include a SQL Subquery.
- A check constraint can be defined in either a CREATE TABLE statement or a ALTER TABLE statement.

DDL - TABLE CONSTRAINT

Create Check Constraint - Using a CREATE TABLE statement

The syntax for creating a check constraint using a CREATE TABLE:

```
CREATE TABLE table_name
(  column1 datatype null/not null,
 column2 datatype null/not null,
  ...
 CONSTRAINT constraint_name
CHECK (column_name with condition) [DISABLE]
);
```

DDL - TABLE CONSTRAINT

Create Check Constraint - Using a CREATE TABLE

Note:

The **DISABLE** keyword is optional. If you create a check constraint using the DISABLE keyword, the constraint will be created, but the condition will not be enforced.

First Example:

```
CREATE TABLE suppliers4
(
supplier_id number(4),
supplier_name varchar2(50),
CONSTRAINT check_supplier_id  CHECK (supplier_id
BETWEEN 100 and 9999)
);
```

DDL - TABLE CONSTRAINT

In this first example,
we've created a check constraint on the suppliers4 table called **check_supplier_id**.
This constraint ensures that the **supplier_id** field contains values **between 100 and 9999**.

DDL - TABLE CONSTRAINT

Create Check Constraint - Using a CREATE TABLE

Second Example :

```
CREATE TABLE suppliers5
(  supplier_id number(4),
supplier_name varchar2(50),
CONSTRAINT check_supplier_name
CHECK (supplier_name = upper(supplier_name))
);
```

DDL - TABLE CONSTRAINT

In second example,
we've created a check constraint called **check_supplier_name**. This constraint ensures that the **supplier_name** column always contains **uppercase** characters.

DDL - TABLE CONSTRAINT

Create Check Constraint - Using a CREATE TABLE

Third Example :

```
CREATE TABLE Customer
(
customer_id integer CHECK (customer_id > 0),
Last_Name      varchar (30),
First_Name     varchar(30)
);
```

DDL - TABLE CONSTRAINT

In Third example,
we've created a check constraint on the customer table. This constraint ensures that the **customer_id** column contains values **greater than zero**.

DDL - TABLE CONSTRAINT

Using an ALTER TABLE statement

The syntax for creating a check constraint in an ALTER TABLE:

ALTER TABLE table_name
ADD
CONSTRAINT constraint_name
CHECK (column_name condition) [DISABLE];

DDL - TABLE CONSTRAINT

Example

```
ALTER TABLE supplier
ADD CONSTRAINT check_supplier_name2
CHECK (supplier_name IN ('IBM', 'Microsoft',
'NVIDIA')
);
```

In this example, we've created a check constraint on the existing suppliers table called **check_supplier_name**.

It ensures that the **supplier_name** field only contains the following values: **IBM, Microsoft, or NVIDIA.**

DDL - TABLE CONSTRAINT

Disable a Check Constraint

The syntax for disabling a check constraint is:

ALTER TABLE table_name
DISABLE CONSTRAINT constraint_name;

DDL - TABLE CONSTRAINT

Example:

ALTER TABLE suppliers4
DISABLE CONSTRAINT check_supplier_id;

In this example,
we're **Disabling** a check constraint on the **suppliers** table called **check_supplier_id**.

DDL - TABLE CONSTRAINT

Enable a Check Constraint

The syntax for enabling a check constraint in Oracle is:

ALTER TABLE table_name
ENABLE CONSTRAINT constraint_name;

DDL - TABLE CONSTRAINT

Example:

ALTER TABLE suppliers
ENABLE CONSTRAINT check_supplier_id;

In this example,
we're **Enabling** a check constraint on the **suppliers** table called **check_supplier_id**.

DDL - TABLE CONSTRAINT

Drop a Check Constraint

The syntax for dropping a check constraint is:

```
ALTER TABLE table_name
DROP CONSTRAINT constraint_name;
```

Example:

```
ALTER TABLE suppliers4
DROP CONSTRAINT check_supplier_id;
```


?
Q
&
&
A
!


Thank you
Dhafer Sabah Yaseen