# Database System

## Lecture 6
**SQL Sub Languages**
**DDL - Data Definition Language**
**TABLE CONSTRAINT**
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# DDL - TABLE CONSTRAINT

*Types of constraint*
➢ Primary Key Constraint.
➢ Foreign Key constraint.
➢ Unique constraint.
➢ Check Constraint.
➢ Not NULL Constraint.
➢ Default Constraint.

# DDL - TABLE CONSTRAINT

➢ *Primary Key Constraint*

In Oracle, a **Primary Key** is a single field or combination of fields that uniquely defines a record. None of the fields that are part of the primary key can contain a null value. A table can have only one primary key.

*Note*

In Oracle, a primary key can not contain more than 32 columns.

A primary key can be defined in either a CREATE TABLE statement or an ALTER TABLE statement.

# DDL - TABLE CONSTRAINT

*Create Primary Key - Using CREATE TABLE statement*
It is possible to create the constraints together with the create statement.
 **The syntax to create a primary key using the CREATE TABLE statement:**
 **CREATE TABLE table_name**
**(**
**column1 datatype    CONSTRAINT_Type ,**
**column2 datatype,**
 **...**
**CONSTRAINT constraint_name PRIMARY KEY**
**(column1, column2, ... column_n)**
**);**

# DDL - TABLE CONSTRAINT

*Examples :*
**Create TABLE orders**
 **(**
**order_id number (7) primary key,**
**order_dt date,**
**cust_id  number(7)**
**);**

*Related system Tables for constraints*
*user_constraints*
*all_constraints*
*user_cons_columns*
*all_cons_columns*

# DDL - TABLE CONSTRAINT

*Same Example using another method to add constraint :*

Create TABLE orders2
(
order_id number(7),
order_dt date,
cust_id number(7),
CONSTRAINT pk_orders PRIMARY KEY (order_id)
 );

*Note:*
Primary key needs to have an associated (unique) index the index automatically created when create PK.

# DDL - TABLE CONSTRAINT

*Another Examples :*

```
CREATE TABLE supplier
(
supplier_id number(10)              ,
supplier_name varchar2(50)        not null,
contact_name varchar2(50),
CONSTRAINT supplier_pk PRIMARY KEY (supplier_id)
);
```

In this example, we've created a primary key on the supplier table called supplier_pk. It consists of only one field - the supplier_id field.

# DDL - TABLE CONSTRAINT

*Creating Table with combined primary key:*
We could also create a primary key with more than one field as in the example below:

```
create table employee_history
(
employee_id          number(6) not null,
salary               number(8,2),
hire_date             date    default sysdate,
termination_date     date,
termination_desc    varchar2(4000),
CONSTRAINT emphistory_pk PRIMARY KEY (employee_id,
hire_date)
);
```

# DDL - TABLE CONSTRAINT

*Create Primary Key - Using ALTER TABLE statement*
The syntax to create a primary key using the ALTER TABLE statement in Oracle
*Syntax*
**ALTER TABLE table_name**
**ADD CONSTRAINT**
**constraint_name PRIMARY KEY (column1, column2, ... column_n);**

# DDL - TABLE CONSTRAINT

Let's look at an example of how to create a primary key using the ALTER TABLE statement in Oracle.

**ALTER TABLE supplier**
**ADD CONSTRAINT supplier_pk PRIMARY KEY (supplier_id);**

In this example, we've created a primary key on the existing supplier table called supplier_pk. It consists of the field called supplier_id.

# DDL - TABLE CONSTRAINT

We could also create a combined primary key with more than one field as in the example below:

**ALTER TABLE supplier**
**ADD CONSTRAINT supplier_pk PRIMARY KEY (supplier_id, supplier_name);**

# DDL - TABLE CONSTRAINT

*Disable Primary Key*

The syntax to disable a primary key using the ALTER TABLE statement in Oracle:

*Syntax:*

**ALTER TABLE table_name**
**DISABLE CONSTRAINT constraint_name;**

*Example*

**ALTER TABLE supplier**
**DISABLE CONSTRAINT supplier_pk;**

# DDL - TABLE CONSTRAINT

***Enable Primary Key***

The syntax to enable a primary key using the ALTER TABLE statement in Oracle/PLSQL is:

***Syntax :***

**ALTER TABLE table_name**
**ENABLE CONSTRAINT constraint_name;**

***Example:***

**ALTER TABLE supplier**
**ENABLE CONSTRAINT supplier_pk;**

# DDL - TABLE CONSTRAINT

*Drop Primary Key*
The syntax to drop a primary key using the ALTER TABLE statement in Oracle

*Syntax:*
**ALTER TABLE table_name**
**DROP CONSTRAINT constraint_name;**

*Example:*
**ALTER TABLE supplier**
**DROP CONSTRAINT supplier_pk;**

# *TABLE CONSTRAINT*
## *Foreign Key constraint*

Thank you

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