

## 1. Create the Products Table

Create a table named Products with the following columns:

ProductID: NUMBER

The screenshot shows the Oracle Application Express SQL Workshop interface. The 'Table' tab is selected for the 'PRODUCTS' table. The columns are defined as follows:

| Column Name | Data Type    | Nullable | Default | Primary Key |
|-------------|--------------|----------|---------|-------------|
| PRODUCTID   | NUMBER       | Yes      | -       | -           |
| PRODUCTNAME | VARCHAR2(50) | Yes      | -       | -           |
| PRICE       | NUMBER(10,2) | Yes      | -       | -           |
| CATEGORY    | VARCHAR2(30) | Yes      | -       | -           |
| STOCK       | NUMBER(5)    | Yes      | -       | -           |

The 'Create' button is visible in the top right corner of the table definition area.

CREATE TABLE Products (

ProductID NUMBER,

ProductName VARCHAR(50),

Price NUMBER(10,2)

Category VARCHAR(30),

Stock NUMBER(5)

## 2. Modify the Table Structure

Perform the following modifications on the Products table: 1.

Change the data type of Category from VARCHAR2(30) to VARCHAR2(50).

ALTER TABLE Products MODIFY Category VARCHAR(50);

2) Add a new column SupplierEmail of type VARCHAR2(40).

| Column Name   | Data Type    | Nullable | Default | Primary Key |
|---------------|--------------|----------|---------|-------------|
| PRODUCTID     | NUMBER       | Yes      | -       | -           |
| PRODUCTNAME   | VARCHAR2(50) | Yes      | -       | -           |
| PRICE         | NUMBER(10,2) | Yes      | -       | -           |
| CATEGORY      | VARCHAR2(50) | Yes      | -       | -           |
| STOCK         | NUMBER(5,0)  | Yes      | -       | -           |
| SUPPLIEREMAIL | VARCHAR2(40) | Yes      | -       | -           |
| 1 - 6         |              |          |         |             |

ALTER TABLE Products ADD SupplierEmail VARCHAR2(40);

3) Drop the Stock column from the table.

| Column Name   | Data Type    | Nullable | Default | Primary Key |
|---------------|--------------|----------|---------|-------------|
| PRODUCTID     | NUMBER       | Yes      | -       | -           |
| PRODUCTNAME   | VARCHAR2(50) | Yes      | -       | -           |
| PRICE         | NUMBER(10,2) | Yes      | -       | -           |
| CATEGORY      | VARCHAR2(50) | Yes      | -       | -           |
| SUPPLIEREMAIL | VARCHAR2(40) | Yes      | -       | -           |
| 1 - 5         |              |          |         |             |

ALTER TABLE Products DROP COLUMN Stock;

4) Add a new column AddedDate with the data type DATE.

| Column Name   | Data Type    | Nullable | Default | Primary Key |
|---------------|--------------|----------|---------|-------------|
| PRODUCTID     | NUMBER       | Yes      | -       | -           |
| PRODUCTNAME   | VARCHAR2(50) | Yes      | -       | -           |
| PRICE         | NUMBER(10,2) | Yes      | -       | -           |
| CATEGORY      | VARCHAR2(50) | Yes      | -       | -           |
| SUPPLIEREMAIL | VARCHAR2(40) | Yes      | -       | -           |
| ADDEDDATE     | DATE         | Yes      | -       | -           |
| 1 - 6         |              |          |         |             |

ALTER TABLE Products ADD AddedDate DATE;

3. Add Constraints

Add constraints to ensure data integrity:

1. Add a primary key constraint on the ProductID column (if not already added).

| Column Name   | Data Type    | Nullable | Default | Primary Key |
|---------------|--------------|----------|---------|-------------|
| PRODUCTID     | NUMBER       | No       | -       | 1           |
| PRODUCTNAME   | VARCHAR2(50) | Yes      | -       | -           |
| PRICE         | NUMBER(10,2) | Yes      | -       | -           |
| CATEGORY      | VARCHAR2(50) | Yes      | -       | -           |
| SUPPLIEREMAIL | VARCHAR2(40) | Yes      | -       | -           |
| ADDEDDATE     | DATE         | Yes      | -       | -           |
| 1 - 6         |              |          |         |             |

ALTER TABLE Products ADD CONSTRAINT PK\_Products PRIMARY KEY (ProductID);

2. Add a unique constraint to the SupplierEmail column.

| Constraint       | Type    | Search Condition | Related Constraint | Columns       | Delete Rule | Status  | Last Change            | Index            | Invalid |
|------------------|---------|------------------|--------------------|---------------|-------------|---------|------------------------|------------------|---------|
| PK_PRODUCTS      | Primary | -                | -                  | PRODUCTID     | -           | ENABLED | 12/16/2024 03:52:01 PM | PK_PRODUCTS      | -       |
| UQ_SUPPLIEREMAIL | Unique  | -                | -                  | SUPPLIEREMAIL | -           | ENABLED | 12/16/2024 03:55:31 PM | UQ_SUPPLIEREMAIL | -       |
| 1 - 2            |         |                  |                    |               |             |         |                        |                  |         |

ALTER TABLE Products ADD CONSTRAINT UQ\_SupplierEmail UNIQUE (SupplierEmail);

4. Populate and Explore Deleting/Truncating Tables

Perform the following actions and observe the differences:

1. Insert a few rows into the Products table to test the table structure and constraints.

| EDIT  | PRODUCTID | PRODUCTNAME | PRICE | CATEGORY | SUPPLIEREMAIL   | ADDEDDATE  |
|---|-----------|-------------|-------|----------|-----------------|------------|
|  | 1         | soap        | 30    | washing  | piya@gmail.com  | 12/16/2024 |
|  | 2         | detergent   | 40    | washing  | jalmi@gmail.com | 12/16/2024 |
|  | 3         | spoon       | 3     | crockery | laxmi@gmail.com | 12/16/2024 |
| row(s) 1 - 3 of 3   |           |             |       |          |                 |            |

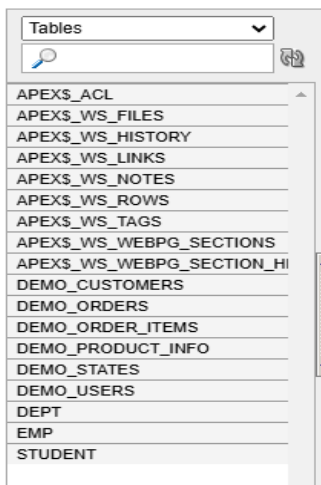
2. Use the TRUNCATE command to remove all rows from the table without deleting its structure.

|                              |             |            |       |             |        |            |             |          |              |     |
|------------------------------|-------------|------------|-------|-------------|--------|------------|-------------|----------|--------------|-----|
| Table                        | <b>Data</b> | Indexes    | Model | Constraints | Grants | Statistics | UI Defaults | Triggers | Dependencies | SQL |
| Query                        | Count Rows  | Insert Row |       |             |        |            |             |          |              |     |
| This table contains no data. |             |            |       |             |        |            |             |          |              |     |

TRUNCATE TABLE Products;

3. Use the DROP command to delete the Products table completely.

DROP TABLE Products;



5. Insert 10 Rows into the Products Table

| EDIT                | PRODUCTID | PRODUCTNAME | PRICE | CATEGORY   | STOCK |
|---------------------|-----------|-------------|-------|------------|-------|
|                     | 1         | soap        | 30    | washing    | 300   |
|                     | 2         | detergent   | 35    | washing    | 300   |
|                     | 3         | spoon       | 3     | crockery   | 350   |
|                     | 4         | plate       | 10    | crockery   | 340   |
|                     | 5         | glass       | 10    | crockery   | 330   |
|                     | 6         | bowl        | 20    | crockery   | 300   |
|                     | 7         | blanket     | 100   | furnishing | 100   |
|                     | 8         | pillow      | 79    | furnishing | 110   |
|                     | 9         | bed         | 12000 | furnishing | 100   |
|                     | 10        | quilt       | 10000 | furnishing | 120   |
| row(s) 1 - 10 of 10 |           |             |       |            |       |

6. Perform Basic DML Commands

1. SELECT Command (Retrieve Data):

SELECT \* FROM Products;

| PRODUCTID | PRODUCTNAME | PRICE | CATEGORY   | STOCK |
|-----------|-------------|-------|------------|-------|
| 1         | soap        | 30    | washing    | 300   |
| 2         | detergent   | 35    | washing    | 300   |
| 3         | spoon       | 3     | crockery   | 350   |
| 4         | plate       | 10    | crockery   | 340   |
| 5         | glass       | 10    | crockery   | 330   |
| 6         | bowl        | 20    | crockery   | 300   |
| 7         | blanket     | 100   | furnishing | 100   |
| 8         | pillow      | 79    | furnishing | 110   |
| 9         | bed         | 12000 | furnishing | 100   |
| 10        | quilt       | 10000 | furnishing | 120   |