SQL DUAL table

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What is DUAL table?

The DUAL is special one row, one column table present by default in all Oracle databases. The owner of DUAL is SYS (SYS owns the data dictionary, therefore DUAL is part of the data dictionary.) but DUAL can be accessed by every user. The table has a single VARCHAR2(1) column called DUMMY that has a value of 'X'. MySQL allows DUAL to be specified as a table in queries that do not need data from any tables. In SQL Server DUAL table does not exist, but you could create one.

The DUAL table was created by Charles Weiss of Oracle corporation to provide a table for joining in internal views.

See the following commands :

The following command displays the structure of DUAL table :

```
DESC DUAL;
```

Output:

```
Name                      Null?   Type
------------------------- ------
DUMMY                             VARCHAR2(1)
```

The following command displays the content of the DUAL table :

```
SELECT * FROM DUAL;
```

Output:

```
DUMMY
----------
X
```

The following command displays the number of rows of DUAL table :

```
      SELECT COUNT(*) FROM DUAL;
```

Output:

```
  COUNT(*)
----------
         1
```

The following command displays the string value from the DUAL table :

```
      SELECT 'ABCDEF12345' FROM DUAL;
```

Output:

```
'ABCDEF1234
-----------
ABCDEF12345
```

The following command displays the numeric value from the DUAL table :

```
      SELECT 123792.52 FROM DUAL;
```

Output:

```
 123792·52
----------
 123792·52
```

The following command tries to delete all rows from the DUAL table :

```
      DELETE FROM DUAL;
```

Output:

```
DELETE FROM DUAL
        *
```

```
ERROR at line 1:
ORA-01031: insufficient privileges
```

The following command tries to remove all rows from the DUAL table :

```
        TRUNCATE TABLE DUAL;
```

Note : The DELETE command is used to remove rows from a table. After performing a DELETE operation you need to COMMIT or ROLLBACK the transaction to make the change permanent or to undo it. TRUNCATE removes all rows from a table. The operation cannot be rolled back.

Output:

```
TRUNCATE TABLE DUAL
                 *
ERROR at line 1:
ORA-00942: table or view does not exist
```

The following command select two rows from dual :

```
        SELECT dummy FROM DUAL
        UNION ALL
        SELECT dummy FROM DUAL;
```

Output

```
DUMMY
----------
X
X
```

Example - 1

You can also check the system date from the DUAL table using the following statement :

```
        SELECT sysdate FROM DUAL ;
```

Output:

```
SYSDATE
---------
11-DEC-10
```

Example - 2

You can also check the arithmetic calculation from the DUAL table using the following statement :

```sql
SELECT 15+10-5*5/5 FROM DUAL;
```

Output:

```
15+10-5*5/5
-----------
        20
```

Example - 3

Following code display the numbers 1..10 from DUAL :

```sql
SELECT level
FROM DUAL
CONNECT BY level <=10;
```

Output:

```
     LEVEL
----------
         1
         2
         3
         4
         5
         6
         7
         8
         9
        10
```

Example - 4

In the following code, DUAL involves the use of decode with NULL.

```sql
SELECT decode(null,null,1,0)
FROM DUAL;
```

Output:

```
DECODE(NULL,NULL,1,0)
---------------------
                    1
```

DUAL table : Oracle vs MySQL

We have already learned that DUAL is a special one row one column table. For Oracle, it is useful because Oracle doesn't allow statements like :

*SELECT 15+10-5*5/5;*

Output:

```
SELECT 15+10-5*5/5
                 *
ERROR at line 1:
ORA-00923: FROM keyword not found where expected
```

But the following command will execute (see the output of the previous example) :

```
SELECT 15+10-5*5/5 FROM DUAL;
```

In case of MySQL the following command will execute :

```
SELECT 15+10-5*5/5;
```

Output:

```
15+10-5*5/5
20.0000
```

The following table shows the uses of dummy table in standard DBMS.

DBMS	Dummy-table concept
MSSQL	No dummy-table concept.
MySQL	No dummy-table concept.
Oracle	Dummy-table : DUAL.
Informix	Since version 11.10, a dummy table has been i

PostgreSQL	No dummy-table concept.
DB2	Dummy-table : SYSIBM.SYSDUMMY1