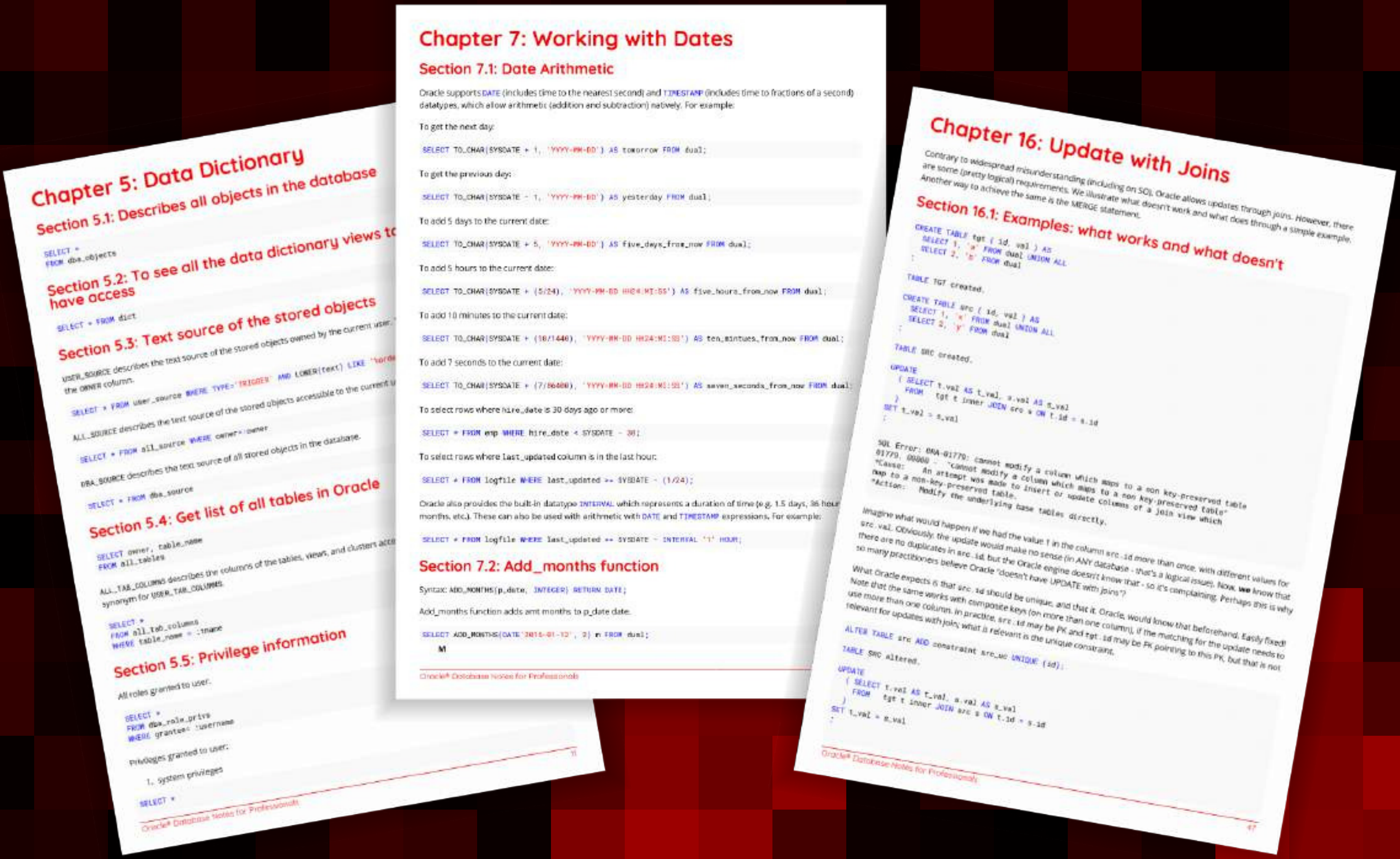
Oracle® Database

Notes for Professionals



Chapter 5: Data Dictionary

Section 5.1: Describes all objects in the database

```
SELECT *
FROM dba_objects
```

Section 5.2: To see all the data dictionary views to have access

```
SELECT * FROM dict
```

Section 5.3: Text source of the stored objects

USER_SOURCE describes the text source of the stored objects owned by the current user. This view does not display the OWNER column.

ALL_SOURCE describes the text source of the stored objects accessible to the current user.

DBA_SOURCE describes the text source of all stored objects in the database.

```
SELECT * FROM dba_source
```

Section 5.4: Get list of all tables in Oracle

```
SELECT owner, table_name
FROM all_tables
```

ALL_TAB_COLUMNS describes the columns of the tables, views, and clusters accessible

Section 5.5: Privilege information

All roles granted to user.

```
SELECT *
FROM dba_role_privs
WHERE grantee= :username
```

Privileges granted to user:

1. system privileges

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Chapter 7: Working with Dates

Section 7.1: Date Arithmetic

Oracle supports DATE (includes time to the nearest second) and TIMESTAMP (includes time to fractions of a second) datatypes, which allow arithmetic (addition and subtraction) natively. For example:

To get the next day:

```
SELECT TO_CHAR(SYSDATE + 1, 'YYYY-MM-DD') AS tomorrow FROM dual;
```

To get the previous day:

```
SELECT TO_CHAR(SYSDATE - 1, 'YYYY-MM-DD') AS yesterday FROM dual;
```

To add 5 days to the current date:

```
SELECT TO_CHAR(SYSDATE + 5, 'YYYY-MM-DD') AS five_days_from_now FROM dual;
```

To add 5 hours to the current date:

```
SELECT TO_CHAR(SYSDATE + (5/24), 'YYYY-MM-DD HH24:MI:SS') AS five_hours_from_now FROM dual;
```

To add 10 minutes to the current date:

```
SELECT TO_CHAR(SYSDATE + (10/1440), 'YYYY-MM-DD HH24:MI:SS') AS ten_mintues_from_now FROM dual;
```

To add 7 seconds to the current date:

```
SELECT TO_CHAR(SYSDATE + (7/86400), 'YYYY-MM-DD HH24:MI:SS') AS seven_seconds_from_now FROM dual;
```

To select rows where hire_date is 30 days ago or more:

```
SELECT * FROM emp WHERE hire_date < SYSDATE - 30;
```

To select rows where last_updated column is in the last hour:

```
SELECT * FROM logfile WHERE last_updated >= SYSDATE - (1/24);
```

Oracle also provides the built-in datatype INTERVAL which represents a duration of time (e.g. 1.5 days, 36 hours, 2 months, etc.). These can also be used with arithmetic with DATE and TIMESTAMP expressions. For example:

```
SELECT * FROM logfile WHERE last_updated >= SYSDATE - INTERVAL '1' HOUR;
```

Section 7.2: Add_months function

Syntax: ADD_MONTHS(p_date, INTEGER) RETURN DATE;

Add_months function adds amt months to p_date date.

```
SELECT ADD_MONTHS(DATE'2015-01-12', 2) m FROM dual;
M
```

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Chapter 16: Update with Joins

Contrary to widespread misunderstanding (including on SO), Oracle allows updates through joins. However, there are some (pretty logical) requirements. We illustrate what doesn't work and what does through a simple example. Another way to achieve the same is the MERGE statement.

Section 16.1: Examples: what works and what doesn't

```
CREATE TABLE tgt ( id, val ) AS
  SELECT 1, 'a' FROM dual UNION ALL
  SELECT 2, 'b' FROM dual
;

TABLE TGT created.

CREATE TABLE src ( id, val ) AS
  SELECT 1, 'x' FROM dual UNION ALL
  SELECT 2, 'y' FROM dual
;

TABLE SRC created.

UPDATE
  ( SELECT t.val AS t_val, s.val AS s_val
    FROM   tgt t inner JOIN src s ON t.id = s.id
  )
SET t_val = s_val
;
```

```
SQL Error: ORA-01779: cannot modify a column which maps to a non key-preserved table
01779. 00000 - "cannot modify a column which maps to a non key-preserved table"
*Cause:    An attempt was made to insert or update columns of a join view which
           map to a non-key-preserved table.
*Action:   Modify the underlying base tables directly.
```

Imagine what would happen if we had the value 1 in the column src.id more than once, with different values for src.val. Obviously, the update would make no sense (in ANY database - that's a logical issue). Now, we know that there are no duplicates in src.id, but the Oracle engine doesn't know that - so it's complaining. Perhaps this is why so many practitioners believe Oracle "doesn't have UPDATE with joins"?

What Oracle expects is that src.id should be unique, and that it, Oracle, would know that beforehand. Easily fixed! Note that the same works with composite keys (on more than one column), if the matching for the update needs to use more than one column. In practice, src.id may be PK and tgt.id may be FK pointing to this PK, but that is not relevant for updates with join; what is relevant is the unique constraint.

```
ALTER TABLE src ADD constraint src_uc UNIQUE (id);

TABLE SRC altered.

UPDATE
  ( SELECT t.val AS t_val, s.val AS s_val
    FROM   tgt t inner JOIN src s ON t.id = s.id
  )
SET t_val = s_val
;
```

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