16

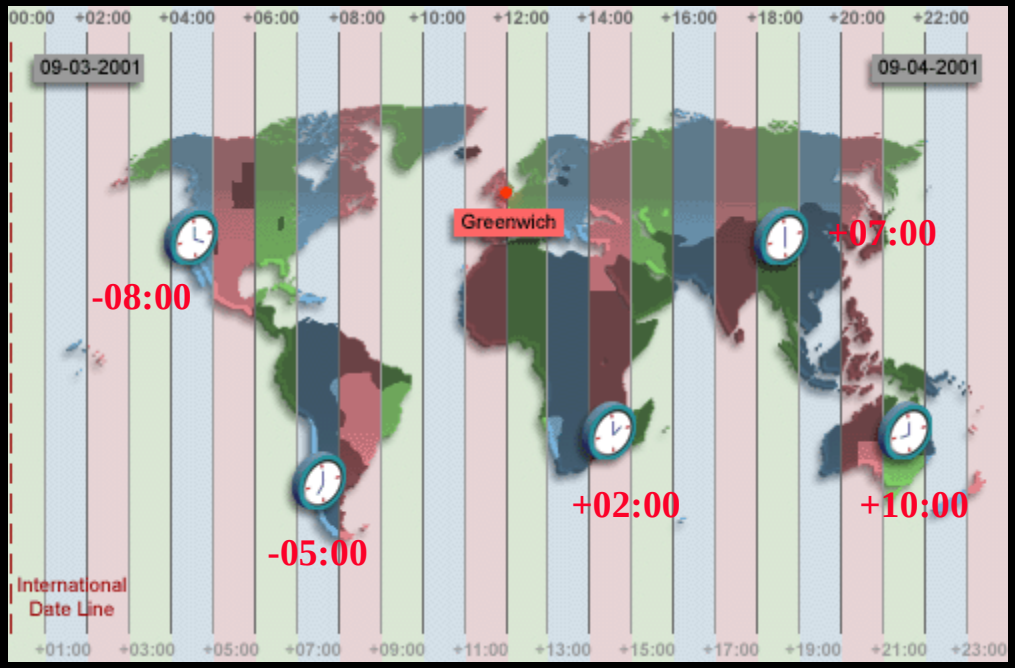
Oracle9*i* Datetime Functions

Objectives

After completing this lesson, you should be able use the following datetime functions:

- TZ_OFFSET
- CURRENT_DATE
- CURRENT_TIMESTAMP
- LOCALTIMESTAMP
- DBTIMEZONE
- SESSIONTIMEZONE
- EXTRACT
- FROM_TZ
- TO_TIMESTAMP
- TO_TIMESTAMP_TZ
- TO_YMINTERVAL

TIME ZONES



The image represents the time for each time zone when Greenwich time is 12:00.

Oracle9*i* Datetime Support

- In Oracle9*i*, you can include the time zone in your date and time data, and provide support for fractional seconds.
- Three new data types are added to `DATE`:
  - `TIMESTAMP`
  - `TIMESTAMP WITH TIME ZONE (TSTZ)`
  - `TIMESTAMP WITH LOCAL TIME ZONE (TSLTZ)`
- Oracle9*i* provides daylight savings support for datetime data types in the server.

TZ_OFFSET

- Display the time zone offset for the time zone `'US/Eastern'`

```
SELECT TZ_OFFSET('US/Eastern') FROM DUAL;
```

TZ_OFFS
-04:00

- Display the time zone offset for the time zone `'Canada/Yukon'`

```
SELECT TZ_OFFSET('Canada/Yukon') FROM DUAL;
```

TZ_OFFS
-07:00

- Display the time zone offset for the time zone `'Europe/London'`

```
SELECT TZ_OFFSET('Europe/London') FROM DUAL;
```

TZ_OFFS
+01:00

CURRENT_DATE

- Display the current date and time in the session's time zone .

```
ALTER SESSION
SET NLS_DATE_FORMAT = 'DD-MON-YYYY HH24:MI:SS';
```

```
ALTER SESSION SET TIME_ZONE = '-5:0';
SELECT SESSIONTIMEZONE, CURRENT_DATE FROM DUAL;
```

SESSIONTIMEZONE	CURRENT_DATE
-05:00	03-OCT-2001 09:37:06

```
ALTER SESSION SET TIME_ZONE = '-8:0';
SELECT SESSIONTIMEZONE, CURRENT_DATE FROM DUAL;
```

SESSIONTIMEZONE	CURRENT_DATE
-08:00	03-OCT-2001 06:38:07

- CURRENT_DATE is sensitive to the session time zone.
- The return value is a date in the Gregorian calendar.

CURRENT_TIMESTAMP

- Display the current date and fractional time in the session's time zone.

```
ALTER SESSION SET TIME_ZONE = '-5:0';
SELECT SESSIONTIMEZONE, CURRENT_TIMESTAMP
FROM DUAL;
```

SESSIONTIMEZONE	CURRENT_TIMESTAMP
-05:00	03-OCT-01 09.40.59.000000 AM -05:00

```
ALTER SESSION SET TIME_ZONE = '-8:0';
SELECT SESSIONTIMEZONE, CURRENT_TIMESTAMP
FROM DUAL;
```

SESSIONTIMEZONE	CURRENT_TIMESTAMP
-08:00	03-OCT-01 06.41.38.000000 AM -08:00

- `CURRENT_TIMESTAMP` is sensitive to the session time zone.
- The return value is of the `TIMESTAMP WITH TIME ZONE` datatype.

LOCALTIMESTAMP

- Display the current date and time in the session time zone in a value of `TIMESTAMP` data type.

```
ALTER SESSION SET TIME_ZONE = '-5:0';
SELECT CURRENT_TIMESTAMP, LOCALTIMESTAMP
FROM DUAL;
```

CURRENT_TIMESTAMP	LOCALTIMESTAMP
03-OCT-01 09.44.21.000000 AM -05:00	03-OCT-01 09.44.21.000000 AM

```
ALTER SESSION SET TIME_ZONE = '-8:0';
SELECT CURRENT_TIMESTAMP, LOCALTIMESTAMP
FROM DUAL;
```

CURRENT_TIMESTAMP	LOCALTIMESTAMP
03-OCT-01 06.45.21.000001 AM -08:00	03-OCT-01 06.45.21.000001 AM

- `LOCALTIMESTAMP` returns a `TIMESTAMP` value, whereas `CURRENT_TIMESTAMP` returns a `TIMESTAMP WITH TIME ZONE` value.

DBTIMEZONE and SESSIONTIMEZONE

- Display the value of the database time zone.

```
SELECT DBTIMEZONE FROM DUAL;
```

DBTIME
-05:00

- Display the value of the session's time zone.

```
SELECT SESSIONTIMEZONE FROM DUAL;
```

SESSIONTIMEZONE
-08:00

EXTRACT

- Display the YEAR component from the SYSDATE.

```
SELECT EXTRACT (YEAR FROM SYSDATE) FROM DUAL;
```

EXTRACT(YEARFROMSYSDATE)
2001

- Display the MONTH component from the HIRE_DATE for those employees whose MANAGER_ID is 100.

```
SELECT last_name, hire_date,
       EXTRACT (MONTH FROM HIRE_DATE)
FROM employees
WHERE manager_id = 100;
```

LAST_NAME	HIRE_DATE	EXTRACT(MONTHFROMHIRE_DATE)
Kochhar	21-SEP-89	9
De Haan	13-JAN-93	1
Mourgos	16-NOV-99	11
Zlotkey	29-JAN-00	1
Hartstein	17-FEB-96	2

TIMESTAMP Conversion Using FROM_TZ

- Display the TIMESTAMP value '2000-03-28 08:00:00' as a TIMESTAMP WITH TIME ZONE value.

```
SELECT FROM_TZ(TIMESTAMP
       '2000-03-28 08:00:00','3:00')
FROM DUAL;
```

FROM_TZ(TIMESTAMP'2000-03-2808:00:00','3:00')
28-MAR-00 08.00.00.000000000 AM +03:00

- Display the TIMESTAMP value '2000-03-28 08:00:00' as a TIMESTAMP WITH TIME ZONE value for the time zone region 'Australia/North'

```
SELECT FROM_TZ(TIMESTAMP
       '2000-03-28 08:00:00', 'Australia/North')
FROM DUAL;
```

FROM_TZ(TIMESTAMP'2000-03-2808:00:00','AUSTRALIA/NORTH')
28-MAR-00 08.00.00.000000000 AM AUSTRALIA/NORTH

STRING To TIMESTAMP Conversion Using TO_TIMESTAMP and TO_TIMESTAMP_TZ

- Display the character string '2000-12-01 11:00:00' as a TIMESTAMP value.

```
SELECT TO_TIMESTAMP ('2000-12-01 11:00:00',
                     'YYYY-MM-DD HH:MI:SS')
FROM DUAL;
```

TO_TIMESTAMP('2000-12-0111:00:00','YYYY-MM-DDHH:MI:SS')
01-DEC-00 11.00.00.000000000 AM

- Display the character string '1999-12-01 11:00:00 -8:00' as a TIMESTAMP WITH TIME ZONE value.

```
SELECT
  TO_TIMESTAMP_TZ('1999-12-01 11:00:00 -8:00',
                  'YYYY-MM-DD HH:MI:SS TZH:TZM')
FROM DUAL;
```

TO_TIMESTAMP_TZ('1999-12-0111:00:00-8:00','YYYY-MM-DDHH:MI:SSTZH:TZM')
01-DEC-99 11.00.00.000000000 AM -08:00

Time Interval Conversion with TO_YMINTERVAL

- Display a date that is one year two months after the hire date for the employees working in the department with the DEPARTMENT_ID 20

```
SELECT hire_date,
       hire_date + TO_YMINTERVAL('01-02') AS
       HIRE_DATE_YMININTERVAL
FROM EMPLOYEES
WHERE department_id = 20;
```

HIRE_DATE	HIRE_DATE_YMININTERV
17-FEB-1996 00:00:00	17-APR-1997 00:00:00
17-AUG-1997 00:00:00	17-OCT-1998 00:00:00

Summary

In this lesson, you should have learned how to use the following functions:

- TZ_OFFSET
- FROM_TZ
- TO_TIMESTAMP
- TO_TIMESTAMP_TZ
- TO_YMINTERVAL
- CURRENT_DATE
- CURRENT_TIMESTAMP
- LOCALTIMESTAMP
- DBTIMEZONE
- SESSIONTIMEZONE
- EXTRACT

Practice 16 Overview

This practice covers using the Oracle9*i* datetime functions.