T00533766 – Jagjit Singh Bilkhu

Lab 2 2 %
Due September 28, 2017 midnight via Blearn

Using ORACLE server 12c SQL*Developer (client)

Use your Oracle USER ID on BTACS database.

Part 1 Time exercise

1. Oracle supports the following datetime types: DATE, TIMESTAMP, TIMESTAMP WITH TIME ZONE, and TIMESTAMP WITH LOCAL TIME ZONE.
   DATE stores date and time (both) to the second.
   TIMESTAMP stores date and time (both) to the nanosecond (precision of up to nine digits) (supported since Oracle 9i).

SYSDATE function returns the date/time from the server stored as a DATE datatype **SYSTIMESTAMP** function returns the current date/time/ zone offset from the server stored as a TIMESTAMP WITH TIME ZONE datatype **CURRENT_DATE** function returns the current date and time of the current SQL session (client session) stored (or set by the user using ALTER SESSION. statement) stored as DATE datatype **CURRENT_TIMESTAMP** function returns a TIMESTAMP WITH TIME ZONE value for the current SQL session (client session).

   a. Display the current date/time (with the nanoseconds) from the server. Do **not** convert the datetime format into char (use default formatting). Explain (describe) each part of the result:

```
SELECT SYSTIMESTAMP FROM DUAL;
```

	SYSTIMESTAMP
1	28-SEP-17 09.35.14.638785000 AM -07:00

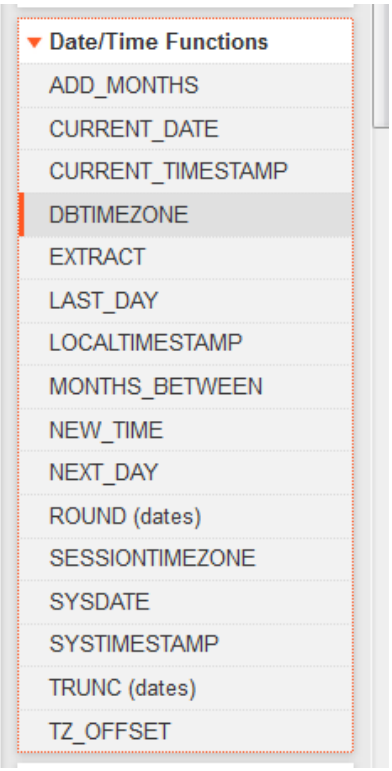
- **28-SEP-17** is the date
- **09.35.14.638785000** is the time showed as Hour : Minutes : Seconds : Nanoseconds
- **AM –** 12 hr format for morning times
- **-7:00** is the time zone offset from UTC time

b. Display current time (ISO standard) on the server include the fraction of seconds with the precision to 3 digits (milliseconds). The formatting for fraction is FF[1..9] For example: format 'HH24:MI:SS.FF2' 18:05:35.29

```
SELECT to_char (SYSTIMESTAMP,'HH24: MI: SS.FF3' ) FROM DUAL;
```

	TO_CHAR(SYSTIMESTAMP,'HH24:MI:SS.FF3')
1	09:50:48.482

2. The snippet below show a list of date/time 16 functions in Oracle taken from TechontheNet (totn)
   https://www.techonthenet.com/oracle/functions/extract.php



T00533766 – Jagjit Singh Bilkhu

Use the tutorials to learn how to use EXTRACT function (note: the syntax uses BNF-like notation). Use the tables and data **BOOKS, PATRONS, TRANSACTIONS** from Lab 1 to do the following. Use the EXTRACT function to:

a. List the transactions (borrowing and returning books) done this month (use SYSDATE for current month). List transaction id and transaction date sorted by date.

Note: This SELECT statement needs a WHERE clause

```
SELECT transaction_id, transaction_date
  FROM transactions
  WHERE (EXTRACT (MONTH FROM transaction_date) =
      EXTRACT (MONTH FROM SYSDATE) AND
      EXTRACT (YEAR FROM transaction_date) =
      EXTRACT (YEAR FROM SYSDATE)) ORDER BY transaction_date;
```

	TRANSACTION_ID	TRANSACTION_DATE
1	5	21-SEP-17
2	10	21-SEP-17
3	11	21-SEP-17
4	12	25-SEP-17
5	13	25-SEP-17

FULL TABLE:

	TRANSACTION_ID	PATRON_ID	BOOK_ID	TRANSACTION_DATE	TRANSACTION_TYPE
1	1	100	0132943263	01-SEP-15	1
2	2	100	A1111	01-SEP-15	1
3	3	100	A2222	01-SEP-15	2
4	4	101	A3333	01-SEP-15	3
5	5	101	A2222	21-SEP-17	1
6	6	102	A3333	01-JUL-15	1
7	7	103	A4444	01-JUL-15	2
8	8	100	A4444	01-JUL-15	1
9	9	102	A2222	01-JUL-15	2
10	10	102	A5555	21-SEP-17	1
11	11	101	A2222	21-SEP-17	1
12	12	100	BK001	25-SEP-17	1
13	13	100	BK001	25-SEP-17	2

Part 2 Script for the "Oracle 11g SQL" book by Joan Casteel

IMPORTANT:
LAB 1 uses tables: books, patrons, transactions. The Oracle 11g book uses also books table. The solution is to rename the tutorial tables to L1_

Oracle has a command to rename table to a new name:

RENAME oldtablename TO newtablename; (SQL book p.79)

```
RENAME books TO L1_books;
RENAME patrons TO L1_patrons;
RENAME transactions TO L1_transactions;
```

The following is a conceptual (ERD) model for the JustLee books company database used in the Oracle 11g SQL book (p.11).

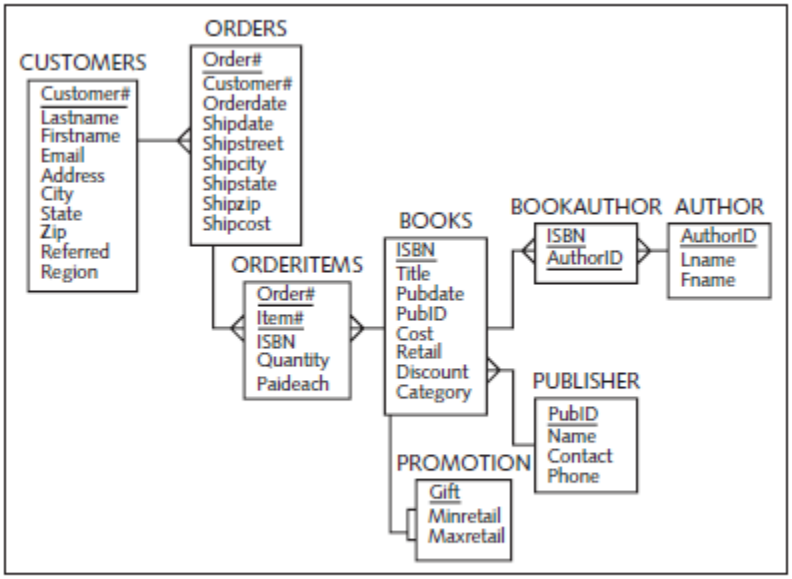


FIGURE 1-5 JustLee Books's table structures after normalization

Run the script JLDB_Build_5.sql to create the tables and add data for the LustLee database.
Please note that there is a statement to set the default for the date format. We are using the script from the Oracle SQL book; however, never use YY as year → use ISO standard. I've added the following

T00533766 – Jagjit Singh Bilkhu

```
ALTER SESSION SET NLS_DATE_FORMAT ='DD-MON-YY';
```

Read chapter 2 and 3 4 from the Oracle 11g SQL book (available on reserve in Library)

1. List the names of the customers from California. List the Last name, the First name, and city. Add the aliases for the column names.

```
SELECT lastname AS Last_Name, firstname AS First_Name, city AS Residence_City
  FROM customers
  WHERE state = 'CA';
```

	LAST_NAME	FIRST_NAME	RESIDENCE_CITY
1	THOMPSON	RYAN	SANTA MONICA
2	PEREZ	JORGE	BURBANK
3	DAUM	MICHELL	BURBANK

2. List the books (Book ISBN and title) from the “computer” category which were published before 2006. Use the function EXTRACT.

```
SELECT isbn, title
  FROM books
  WHERE category = 'COMPUTER'
  AND
  EXTRACT (YEAR FROM pubdate) <2006;
```

	ISBN	TITLE
1	8843172113	DATABASE IMPLEMENTATION
2	3957136468	HOLY GRAIL OF ORACLE
3	1915762492	HANDCRANKED COMPUTERS

3. List the names (Last name space and the First name with a column alias) of the customers who have ordered books in March 2009. Use old or new syntax for the JOIN statement.

```
SELECT lastname||' '||firstname AS customer_name
  FROM customers JOIN orders ON orders.CUSTOMER# = customers.CUSTOMER#
  WHERE EXTRACT (YEAR FROM orders.orderdate) = 2009
  AND EXTRACT (MONTH FROM orders.orderdate) = 3;
```

	CUSTOMER_NAME
1	GIRARD CINDY
2	LUCAS JAKE
3	MCGOVERN REESE

Results:
Customer Name

GIRARD CINDY
LUCAS JAKE
MCGOVERN REESE

4. Add a column DOB to the customer table. Add a new customer whose name is Scarlett O'Hara (add all data for Scarlett including DOB '1844-07-01'). Write a select statement to list the customers born in 1844.

```
ALTER TABLE customers
  ADD (dob DATE);

INSERT INTO CUSTOMERS
  VALUES (1021, 'SCARLETT', 'O ''HARA', 'P.O. BOX 5', 'HOUSTON', 'TX', '15007', NULL,
'S', 'sOhara@sat.net',to_date('1844-07-01','YYYY-MM-DD'));
```

T00533766 – Jagjit Singh Bilkhu

```
SELECT customer#, lastname, firstname, dob FROM customers
  WHERE EXTRACT (YEAR FROM dob) =1844;
```

	CUSTOMER#	LASTNAME	FIRSTNAME	DOB
1	1021	SCARLETT	O 'HARA	01-JUL-44

Lab Submission

Please submit pdf file with the SQL statements and the results (copy/paste/snip) from the SQLDeveloper.