

# ISLAMIC UNIVERSITY OF TECHNOLOGY



## DATABASE MANAGEMENT SYSTEMS LAB

CSE 4308 / CSE 4174

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### Lab 5

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# 1 Some Date Functions

## 1.1 CURRENT\_DATE

To get the current, Oracle provides two default functions namely `CURRENT_DATE` and `sysdate` the syntax is following:

```
SELECT CURRENT_DATE FROM DUAL;
```

or,

```
SELECT sysdate FROM DUAL;
```

## 1.2 TO\_DATE

This function is used to convert a date from a `DATE` value to a specified date format. Example,

```
SELECT TO_DATE('20 APR 2020', 'DD MON YYYY') AS  
       CONVERTED_DATE  
FROM dual;
```

## 1.3 TO\_CHAR

This function converts a date which is in string type to date value. Example,

```
SELECT TO_CHAR(sysdate, 'DD-MM-YYYY') AS NEW_DATE  
FROM dual;
```

## 1.4 Date Extraction

To extract day, month or year, one can use `EXTRACT` function. For example,

```
SELECT EXTRACT(YEAR FROM TO_DATE('29-Apr-2020 05:30:20',  
                                'DD-Mon-YYYY HH24:MI:SS')) AS  
       YEAR  
FROM DUAL;
```

Similarly, we can extract month and day too.

## 1.5 Last\_Day

This function is used to return the last day of the month of the particular date. For instance,

```
SELECT LAST_DAY(sysdate) AS LAST_DAY
FROM dual;
```

## 1.6 Next\_Day

This function returns the date of the first specified weekday that is later than the given date. For example,

```
SELECT NEXT_DAY(SYSDATE, 'FRIDAY')
FROM DUAL;
```

## 1.7 Months\_Between

This function is used to measure the months between two dates and the syntax is as follows:

```
SELECT MONTHS_BETWEEN(sysdate, DATE '2011-04-02') AS
       MONTH_DIFFERENCE
FROM DUAL;
```

## 1.8 Add\_Months

This function adds  $N$  months to a date and returns the same day  $N$  month after.

```
SELECT ADD_MONTHS(sysdate, 2) AS NEWDATE
FROM dual;
```

To add a year, we have to convert it into months and to add day we can simply add the day. Let's say,

```
SELECT sysdate+10 as NEWDATE
FROM dual;
```

## 2 Some String Functions

### 2.1 Length

The `LENGTH` function in Oracle is used to return the length of a given string. For example:

```
SELECT LENGTH('HELLO') FROM DUAL;
```

### 2.2 Lower

The `LOWER` function in Oracle is used to return a specified character expression in lowercase letters. The following is the syntax to use the `LOWER` function in Oracle.

```
SELECT LOWER('Hello') FROM DUAL;
```

### 2.3 Upper

The `UPPER` function in Oracle is used to return a specified character expression in uppercase letters. The following is the syntax to use the `UPPER` function in Oracle.

```
SELECT UPPER('Hello') FROM DUAL;
```

### 2.4 Initcap

The string `INITCAP` function in Oracle is used to set the first letter of each word in uppercase and rest all other letters in lowercase. For example:

```
SELECT INITCAP('HELLO') FROM DUAL;
```

### 2.5 Trim

The `TRIM` function is used to remove the leading or trailing characters (or both) from a string. If `trim_character` or `trim_source` is a character literal, then you must enclose it in single quotes. If you specify `LEADING`, then Oracle removes any leading characters equal to `trim_character` and for `TRAILING`, it removes any trailing characters equal to `trim_character`. If you specify `BOTH` or none of the three, then Oracle removes leading and trailing characters

equal to trim\_character. Lastly, if you do not specify trim\_character, then by default it will trim leading and trailing blank spaces. For example:

```
--- This will remove both trailing and leading white spaces
SELECT TRIM('      Hello World!  ') AS NEW_STRING FROM DUAL;
```

```
--- This will remove leading characters that are specified
SELECT TRIM(LEADING '6' FROM '665530') AS NEW_STRING FROM
DUAL;
```

```
--- This will remove trailing characters that are specified
SELECT TRIM(TRAILING '0' FROM '665530') AS NEW_STRING FROM
DUAL;
```

```
--- This will remove leading & trailing characters that are
    specified
SELECT TRIM('M' FROM 'MADAM') AS NEW_STRING FROM DUAL;
```

## 2.6 Lpad

LPAD function is used to fill a string with a specific character on the left side of a given string.

```
SELECT LPAD('Hello', 10, '+') AS NEW_STRING FROM DUAL;
```

It will produce a 10-character string left padded with '+'.

## 2.7 Rpad

Similar to LPAD, RPAD function is used to fill a string with a specific character on the right side.

```
SELECT RPAD('Hello', 10, '+') AS NEW_STRING FROM DUAL;
```

It will produce a 10-character string right padded with '+'.

## 2.8 Replace

The REPLACE function in Oracle is used to return a string with every occurrence of search\_string replaced with replacement\_string. For example:

```
SELECT REPLACE('JACK with JUE', 'J', 'BL') AS New_String FROM
DUAL;
```

Here, 'J' will be replaced by 'BL'.

### 3 Handling Null Value

The NVL function lets you substitute a value when a null value is encountered. For example,

```
SELECT NVL(supplier_city, 'n/a') FROM suppliers;
```

This will replace any NULL entries with 'n/a'.

```
SELECT NVL(commission, 0) FROM sales;
```

This will replace any NULL entries with 0.

## 4 Lab Task

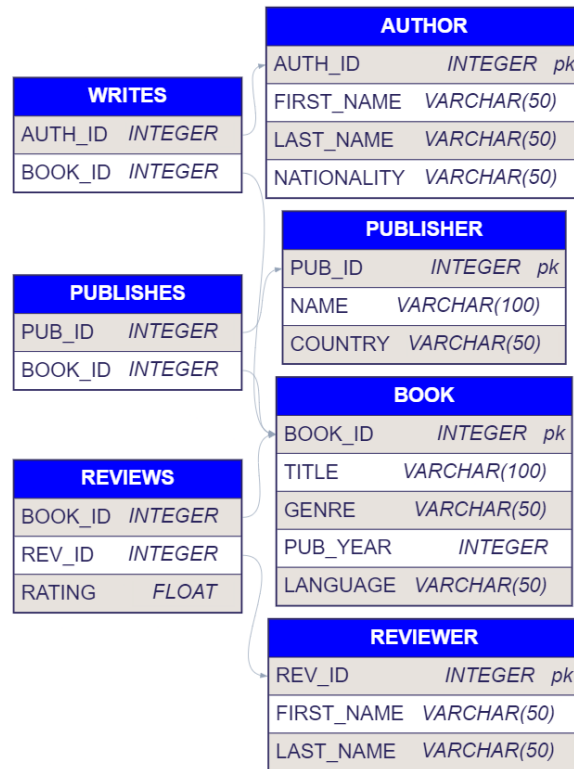


Figure 1: Database Schema

1. Execute the bookstore.sql. It creates a set of tables along with values.
2. Find the authors who have written more than one book.
3. List the titles of the books that have not received any reviews.
4. Show how many books were published per year.
5. Show the number of years between the earliest and latest published books.
6. Identify which publisher has the highest average book rating.



7. Count how many reviews each book received. If a book did not receive any reviews, display 0 for that book.
8. Determine which book is the lowest-rated according to at least two reviewers.
9. Find out which author has written the most books before the year 1950.
10. Find the best-rated author on average.
11. **Bonus:**
  - Add a new column named STATUS in the REVIEWS table of type VARCHAR(10).
  - For each rating, if it is greater than the average rating plus 0.5, set STATUS as 'Excellent'; if it is less than the average rating minus 0.5, set STATUS as 'Poor'; otherwise, set STATUS as 'Average'.