DP_4_1_Practice

DUAL	Dummy table used to view results from functions and calculations
ARRANGEMENT	The arrangement of data for storage or display
INITCAP	Converts alpha character values to uppercase for the first letter of each word, all other letters in lowercase.
FUNCTIONS	Functions that accept character data as input and can return both character and numeric values
TRIM	Removes all specific characters from either the beginning or the ending of a string.
OPERATOR	A symbol that represents a quantity or a relationship between quantities
Single Row Functions	Functions that operate on single rows only and return one result per row
UPPER	Converts alpha characters to upper case
UNPROCESSED	Raw data entered into the computer
CONCAT	Concatenates the first character value to the second character value; equivalent to concatenation operator (||).
RAW DATA	Data that is processed into information
LOWER	Converts alpha character values to lowercase
LPAD	Pads the left side of a character, resulting in a right-justified value
SUBSTR	Returns specific characters from character value starting at a specific character position and going specified character positions long
REPLACE	Replaces a sequence of characters in a string with another set of characters
INSTR	Returns the numeric position of a named string
LENGTH	Returns the number of characters in the expression
RPAD	Pads the right-hand side of a character, resulting in a left- justified value

1. Using the three separate words “Oracle,” “Internet,” and “Academy,” use one command to produce the following output: The Best Class Oracle Internet Academy
SELECT 'The Best Class' || CHR(10) || 'Oracle Internet Academy' AS result FROM dual;

2. Use the string “Oracle Internet Academy” to produce the following output: The Net net
SELECT 'The Net' || CHR(10) || LOWER(SUBSTR('Oracle Internet Academy', 8, 3)) AS result FROM dual;

3. What is the length of the string “Oracle Internet Academy”?
23

4. What’s the position of “I” in “Oracle Internet Academy”?
8

5. Starting with the string “Oracle Internet Academy”, pad the string to create ****Oracle****Internet****Academy****
SELECT '****' || 'Oracle' || '****' || 'Internet' || '****' || 'Academy' || '****' AS result FROM dual;

6. Starting with the string “Oracle Internet Academy”, pad the string to produce: Oracle$$$Internet$$$Academy
SELECT 'Oracle' || '$$$' || 'Internet' || '$$$' || 'Academy' AS result FROM dual;

7. Using the string ‘Oracle Internet Academy’, produce the output shown using the REPLACE function. The Best Class Oracle 2013-2014 Academy
SELECT 'The Best Class' || CHR(10) || REPLACE('Oracle Internet Academy', 'Internet', '2013-2014') AS result FROM dual;

8. List the order date and the order total from the Global Fast Foods F_ORDERS table. Name the order total as TOTAL, and fill in the empty spaces to the left of the order total with $.
SELECT ORDER_DATE,
    LPAD(ORDER_TOTAL, 10, '$') AS TOTAL
FROM F_ORDERS;

9. Write a query that will output a column called “ADDRESS” which has the following information: ZOE TWEE 1009 OLIVER AVENUE BOSTON, MA 12889. Use the Global Fast Foods F_CUSTOMERS table.
SELECT FIRST_NAME || ' ' || LAST_NAME || ' ' || STREET_ADDRESS || ' ' || CITY || ', ' || STATE || ' ' || ZIP_CODE AS ADDRESS
FROM F_CUSTOMERS
WHERE FIRST_NAME = 'ZOE' AND LAST_NAME = 'TWEE';

10. Write a query to return the first character of the first name concatenated to the last_name, the salary, and the department id for employees working in department 20. Give the first expression an alias of Name. Use the EMPLOYEES table. Change the query to use a substitution variable instead of the hard coded value 20 for department id. Run the query for department 30 and 50 without changing the original where-clause in your statement.

```
SELECT SUBSTR(FIRST_NAME, 1, 1) || '. ' || LAST_NAME AS Name,
    SALARY_ID
    DEPARTMENT_ID
FROM EMPLOYEES
WHERE DEPARTMENT_ID = &dept_id;
```

11. Using a substitution variable for the department name, write a query listing department id, department name, and location id for departments located in the_department_of_your_choice. Use the DEPARTMENTS table. Note: All substitution variables in OAE are treated as character strings, so no quotes (‘ ‘) are needed.

```
SELECT DEPARTMENT_ID,
    DEPARTMENT_NAME,
    LOCATION_ID
FROM DEPARTMENTS
WHERE DEPARTMENT_ID = &dept_name;
```

12. Write a query that returns all the employee data depending on the month of their hire date. Use the EMPLOYEES table. The statement should return the month part of the hiredate which is then compared to an abbreviated month (JAN, FEB, MAR) passed into the query via a substitution variable.

```
SELECT *
FROM EMPLOYEES
WHERE TO_CHAR(HIRE_DATE, 'MON') = &hire_month;
```

DP_4_2_Practice

TRUNC	Used to terminate the column, expression, or value to a specified number of decimal places
NUMERIC FUNCTION	These functions accept numeric input and return numeric values.
MOD	Returns the remainder of a division.
ROUND	Rounds the column, expression, or value to a set number of decimal places

1. Display Oracle database employee last_name and salary for employee_ids between 100 and 102. Include a third column that divides each salary by 1.55 and rounds the result to two decimal places.

```
SELECT LAST_NAME,
    SALARY,
    ROUND(SALARY / 1.55, 2) AS SALARY_DIVIDED
FROM EMPLOYEES
WHERE EMPLOYEE_ID BETWEEN 100 AND 102;
```

2. Display employee last_name and salary for those employees who work in department 80. Give each of them a raise of 5.333% and truncate the result to two decimal places.

```
SELECT LAST_NAME,
    SALARY,
    TRUNC(SALARY * (1 + 5.333 / 100), 2) AS NEW_SALARY
FROM EMPLOYEES
WHERE DEPARTMENT_ID = 80;
```

3. Use a MOD number function to determine whether 38873 is an even number or an odd number.

```
SELECT MOD(38873, 2) AS RESULT
FROM dual;
```

4. Use the DUAL table to process the following numbers:

```
SELECT
   ROUND(845.553, 1) AS rounded_one_decimal,
   ROUND(30695.348, 2) AS rounded_two_decimals,
   ROUND(30695.348, -2) AS rounded_negative_two_decimals,
   TRUNC(2.3454, 2) AS truncated_value
FROM dual;
```

5. Divide each employee's salary by 3. Display only those employees' last names and salaries who earn a salary that is a multiple of 3.

```
SELECT LAST_NAME,
    SALARY
FROM EMPLOYEES
WHERE MOD(SALARY, 3) = 0
```

6. Divide 34 by 8. Show only the remainder of the division. Name the output as EXAMPLE.

```
SELECT MOD(34, 8) AS EXAMPLE
FROM dual;
```

DP_4_3_Practice

SYSDATE	A function that returns the current date and time of the database server.
ADD_MONTHS	Add calendar months to date
LAST_DAY	Last day of the month
NEXT_DAY	Next day of the date specified
MONTHS_BETWEEN	Number of months between due dates

1. For DJs on Demand, display the number of months between the event_date of the Vigil wedding and today's date. Round to the nearest month.

```
SELECT ROUND(MONTHS_BETWEEN(SYSDATE, event_date)) AS months_diff
FROM events
WHERE event_name = 'Vigil Wedding';
```

2. Display the days between the start of last summer's school vacation break and the day school started this year. Assume 30.5 days per month. Name the output "Days."

```
SELECT ROUND(MONTHS_BETWEEN(school_start_date, vacation_start_date) * 30.5) AS
Days
FROM dual;
```

3. Display the days between January 1 and December 31.

```
SELECT TO_DATE('31-DEC-2024', 'DD-MON-YYYY') - TO_DATE('01-JAN-2024',
'DD-MON-YYYY') AS Days
FROM dual;
```

4. Using one statement, round today's date to the nearest month and nearest year, and truncate it to the nearest month and nearest year. Use an alias for each column.

```
SELECT
   ROUND(SYSDATE, 'MM') AS Rounded_Month,
   ROUND(SYSDATE, 'YYYY') AS Rounded_Year,
   TRUNC(SYSDATE, 'MM') AS Truncated_Month,
   TRUNC(SYSDATE, 'YYYY') AS Truncated_Year
FROM dual;
```

5. What is the last day of the month for June 2005? Use an alias for the output.

```
SELECT LAST_DAY(TO_DATE('01-JUN-2005', 'DD-MON-YYYY')) AS
Last_Day_June_2005
FROM dual;
```

6. Display the number of years between the Global Fast Foods employee Bob Miller's birthday and today. Round to the nearest year.

```
SELECT ROUND(MONTHS_BETWEEN(SYSDATE, BIRTHDATE) / 12, 0) AS
Years_Between
FROM EMPLOYEES
WHERE FIRST_NAME = 'Bob' AND LAST_NAME = 'Miller';
```

7. Your next appointment with the dentist is six months from today. On what day will you go to the dentist? Name the output, "Appointment."

```
SELECT ADD_MONTHS(SYSDATE, 6) AS Appointment
FROM dual;
```

8. The teacher said you have until the last day of this month to turn in your research paper. What day will this be? Name the output, "Deadline."

```
SELECT LAST_DAY(SYSDATE) AS Deadline
FROM dual;
```

9. How many months between your birthday this year and January 1 next year?

```
SELECT MONTHS_BETWEEN(TO_DATE('01-JAN-2025', 'DD-MON-YYYY'),
TO_DATE('19-MAY-2024', 'DD-MON-YYYY')) AS Months_Between
FROM dual;
```

10. What's the date of the next Friday after your birthday this year? Name the output, "First Friday."

```
SELECT NEXT_DAY(TO_DATE('19-MAY-2024', 'DD-MON-YYYY'), 'FRIDAY') AS "First
Friday"
FROM dual;
```

11. Name a date function that will return a number.

```
SELECT MONTHS_BETWEEN(TO_DATE('01-JAN-2025', 'DD-MON-YYYY'),
TO_DATE('19-MAY-2024', 'DD-MON-YYYY')) AS Months_Between
FROM dual;
```

13. Give one example of why it is important for businesses to be able to manipulate date data? Compare finances between certain times of the season?

DP_5_1_Practice

VARCHAR2	Used for text and character data of fixed length, including numbers, dashes, and special characters.
TRIM	Used to remove padded blanks or to suppress leading zeros
TO NUMBER	Functions that convert a value from one datatype to another.
NUMBER	Used to store variable-length numeric data.
CHAR	Used for character data of variable length, including numbers, special characters, and dashes.
DATE	Used for date and time values.
TO CHAR	Converts dates or numbers to character strings with optional formatting
RR	Century value depends on the specified year and the last two digits of the current year
TO NUMBER	Converts a character string containing digits to a number with optional formatting
DD	Numeric day of the month
TO DATW	Converts a character string representing a date to a date value with optional formatting

1. List the last names and birthdays of Global Fast Food Employees. Convert the birth dates to character data in the Month DD, YYYY format. Suppress any leading zeros.

```
SELECT LAST_NAME,
    TO_CHAR(BIRTHDATE, 'FMMonth DD, YYYY') AS BIRTHDAY
FROM EMPLOYEES;
```

2. Convert January 3, 04, to the default date format 03-Jan-2004.

```
SELECT TO_DATE('03-JAN-04', 'DD-MON-RR') AS ConvertedDate
FROM dual;
```

3. Format a query from the Global Fast Foods f_promotional_menus table to print out the start_date of promotional code 110 as: The promotion began on the tenth of February 2004.

```
SELECT 'The promotion began on the ' ||
      TO_CHAR(START_DATE, 'fmDDth "of" Month YYYY') AS Promotion_Start
FROM f_promotional_menus
WHERE PROMOTIONAL_CODE = 110;
```

4. Convert today's date to a format such as: "Today is the Twentieth of March, Two Thousand Four"

```
SELECT 'Today is the ' ||
      TO_CHAR(SYSDATE, 'fmDDsp "of" Month, "Two Thousand" YYYYsp') AS
Formatted_Date
FROM dual;
```

5. List the ID, name, and salary for all Global Fast Foods employees. Display salary with a $ sign and two decimal places.

```
SELECT EMPLOYEE_ID,
      CONCAT(FIRST_NAME, ' ', LAST_NAME) AS NAME,
      '$' || TO_CHAR(SALARY, '999,999.99') AS SALARY
FROM EMPLOYEES;
```

7. On what day of the week and date did Global Fast Foods' promotional code 110 Valentine's Special begin?

```
SELECT TO_CHAR(START_DATE, 'Day, DD-MON-YYYY') AS Start_Day
FROM f_promotional_menus
WHERE PROMOTIONAL_CODE = 110;
```

8. Create one query that will convert 25-Dec-2004 into each of the following (you will have to convert 25-Dec-2004 to a date and then to character data): December 25th, 2004 DECEMBER 25TH, 2004 25th december, 2004

```
SELECT
   TO_CHAR(TO_DATE('25-DEC-2004', 'DD-MON-YYYY'), 'FMMonth DDth, YYYY') AS
"Format_1",
   TO_CHAR(TO_DATE('25-DEC-2004', 'DD-MON-YYYY'), 'FMMONTH DDth, YYYY') AS
"Format_2",
   TO_CHAR(TO_DATE('25-DEC-2004', 'DD-MON-YYYY'), 'FMDDth month, YYYY') AS
"Format_3"
FROM dual;
```

9. Create a query that will format the DJs on Demand d_packages columns, low-range and high-range package costs, in the format $2500.00.

```
SELECT
```

```
   PACKAGE_NAME,
   TO_CHAR(LOW_RANGE, '$999,999') AS LOW_RANGE_COST,
   TO_CHAR(HIGH_RANGE, '$999,999') AS HIGH_RANGE_COST,
FROM d_packages;
```

10. Convert JUNE192004 to a date using the fx format model.

```
SELECT TO_DATE('JUNE192004', 'FXMONTHDDYYYY') AS Converted_Date
FROM dual;
```

11. What is the distinction between implicit and explicit data type conversion? Give an example of each.
Automatic versus purposely done

12. Why is it important from a business perspective to have data type conversions?
Interoperability

DP_5_2_Practice

NVL	Converts nulls to an actual value
COALSCE	Returns the first non-null expression in the list
NVL 2	Examines the first expression; if the first expression is not null, it returns the second expression; if the first expression is null, it returns the third expression
NULLIF	Compares two expressions; if they are equal, the function returns null; if they are not equal, the function returns the first expression

1. Create a report that shows the Global Fast Foods promotional name, start date, and end date from the f_promotional_menus table. If there is an end date, temporarily replace it with “end in two weeks.” If there is no end date, replace it with today’s date.

```
SELECT
   PROMOTIONAL_NAME,
   START_DATE,
   CASE
      WHEN END_DATE IS NOT NULL THEN 'Ends in 2 weeks'
      ELSE TO_CHAR(SYSDATE, 'DD-MON-YYYY')
   END AS END_DATE,
FROM f_promotional_menus;
```

2. Not all Global Fast Foods staff members receive overtime pay. Instead of displaying a null value for these employees, replace null with zero. Include the employee's last name and overtime rate in the output. Label the overtime rate as "Overtime Status".

```
SELECT
   LAST_NAME,
   NVL2(OVERTIME_RATE, 0) AS "Overtime Status"
FROM
   EMPLOYEES;
```

3. The manager of Global Fast Foods has decided to give all staff who currently do not earn overtime a rate of $5.00. Construct a query that displays the last names and the overtime rate for each staff member, substituting $5.00 for each null overtime value.

```
SELECT
   LAST_NAME,
   NVL2(OVERTIME_RATE, 5.00) AS Overtime_Rate
FROM
   EMPLOYEES;
```

4. Not all Global Fast Foods staff members have a manager. Create a query that displays the employee last name and 9999 in the manager ID column for these employees.

```
SELECT
   LAST_NAME,
   NVL2(MANAGER_ID, 9999) AS MANAGER_ID,
FROM
   EMPLOYEES;
```

5. Which statement(s) below will return null if the value of v_sal is 50?

c. SELECT nullif(v_sal, 50) FROM emp;

6. What does this query on the Global Fast Foods table return?

```
SELECT COALESCE(last_name, to_char(manager_id)) as NAME
FROM f_staffs;
```

Last names of staff

8. For all null values in the specialty column in the DJs on Demand d_partners table, substitute "No Specialty." Show the first name and s

```
SELECT
   FIRST_NAME,
   NVL(specialty, 'No Specialty') AS Specialty
FROM
```

d_partners;

DP_5_3_Practice

CASE	Compares an expression to each of the search values
DECODE	An if-then-else expression whose value depends on the truth-value of a Boolean expression.
CASE	Implements conditional processing within a SQL statement; it meets the ANSI standard.

1. From the DJs on Demand d_songs table, create a query that replaces the 2-minute songs with "shortest" and the 10-minute songs with "longest". Label the output column "Play Times".

```
SELECT
   CASE
      WHEN duration = 2 THEN 'shortest'
      WHEN duration = 10 THEN 'longest'
      ELSE TO_CHAR(duration)
   END AS "Play Times"
FROM
   d_songs;
```

2. Use the Oracle database employees table and CASE expression to decode the department id. Display the department id, last name, salary, and a column called "New Salary" whose value is based on the following conditions:
If the department id is 10 then 1.25 * salary
If the department id is 90 then 1.5 * salary
If the department id is 130 then 1.75 * salary
Otherwise, display the old salary.

3. Display the first name, last name, manager ID, and commission percentage of all employees in departments 80 and 90. In a 5th column called "Review", again display the manager ID. If they don't have a manager, display the commission percentage. If they don't have a commission, display 99999.

```
SELECT
   FIRST_NAME,
   LAST_NAME,
   MANAGER_ID,
   COMMISSION_PERCENTAGE,
   CASE
      WHEN MANAGER_ID IS NOT NULL THEN MANAGER_ID
      WHEN COMMISSION_PCT IS NOT NULL THEN COMMISSION_PCT
```

```
      ELSE 99999
FROM
   EMPLOYEES
WHERE
   DEPARTMENT_ID IN (80, 90);
```