Lab 03: Single-Row Function

Objective:

Functions make the basic query block more powerful and are used to manipulate data values. This is the first of two labs that explore functions. You will focus on single-row character, number, and date functions, as well as those functions that convert data from one type to another—for example, character data to numeric.

Topics to be discussed:

- SQL Functions
- Types of SQL Functions
- Single-row Functions
- Types of Single-row Functions
- Nesting Functions
- DUAL

Exercise:

1. Write a query to display the current date. Label the column Date.
2. Display the employee number, name, salary, and salary increase by 15% expressed as a whole number. Label the column New Salary.
3. Modify your previous query to add a column that will subtract the old salary from the new salary. Label the column Increase. Rerun your query.
4. Display the employee's name, hire date, and salary review date, which is the first Monday after six months of service. Label the column REVIEW. Format the dates to appear in the format similar to "Sunday, the Seventh of September, 1981."
5. For each employee display the employee name and calculate the number of months between today and the date the employee was hired. Label the column MONTHS_WORKED. Order your results by the number of months employed. Round the number of months up to the closest whole number.
6. Write a query that produces the following for each employee: <employee name> earns <salary> monthly but wants <3 times salary>. Label the column Dream Salaries.
7. Write a query that will display the employee's name with the first letter capitalized and all other letters lowercase and the length of their name, for all employees whose name starts with J, A, or M. Give each column an appropriate label.
8. Create a query that will display the employee name and commission amount. If the employee does not earn commission, put "No Commission." Label the column COMM.
9. Create a query that displays the employees' names and indicates the amounts of their salaries through asterisks. Each asterisk signifies a hundred dollars. Sort the data in descending order of salary. Label the column EMPLOYEE_AND_THEIR_SALARIES.

Lab 04: Aggregate Function

Objective:

Aggregate functions return a single result row based on groups of rows, rather than on single rows. Aggregate functions can appear in select lists and in ORDER BY and HAVING clauses. They are commonly used with the GROUP BY clause in a SELECT statement, where Oracle Database divides the rows of a queried table or view into groups. In a query containing a GROUP BY clause, the elements of the select list can be aggregate functions, GROUP BY expressions, constants, or expressions involving one of these. Oracle applies the aggregate functions to each group of rows and returns a single result row for each group.

Topics to be discussed:

- Aggregate Functions
- Frequently Used Aggregate Functions
- GROUP BY clause
- HAVING clause

Exercise:

1. Find average, maximum, minimum salary of the employees.
2. Find average, maximum, minimum salary of the employees according to department number.
3. Find average, maximum, minimum salary of the employees according to job category.
4. Find the name of lowest paid manager. (Manager is not Job).
5. Find the location where maximum number of employee is located
6. Find out job group having highest amount of total salary. (Sal + comm)
7. Suppose you need to know the name and department no. of the employee who earns the highest salary. Write a SQL query to return this information.