**LAB SESSION 03**

**Title:**Data retrieval from database using different functions in SQL.

**Objective:** To understand how to work with functions.

1. Satisfy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ knowledge of Bloom’s Taxonomy.

2. Achieve PO1, PO2, PO9 and PO12 of Program Outcomes.

**Theory:**

**DUAL**

The **DUAL table** is a special one-row, one-column **table** present by default in **Oracle** and other database installations. In **Oracle**, the **table** has a single VARCHAR2(1) column called DUMMY that has a value of 'X'. It is suitable for use in selecting a pseudo column such as SYSDATE, USER, etc.

**Example:**

**desc dual**

select sysdate from dual

**Aggregate Functions**

**MIN** –

Syntax SELECT**MIN**(<aggregate\_expression>)

FROM <table>

[WHERE <conditions>];

**MAX** –

Syntax SELECT**MAX**(<aggregate\_expression>)

FROM <table>

[WHERE <conditions>];

**SUM**–

SyntaxSELECT**SUM**(<aggregate\_expression>)

FROM <table>

[WHERE <conditions>];

**AVG -**

SyntaxSELECT**AVG**(<aggregate\_expression>)

FROM <table>

[WHERE <conditions>];

**STRING FUNCTIONS**

**LOWER –**

SyntaxSELECT **LOWER**(<string1>) FROM <table>;

**UPPER –**

Syntax SELECT **UPPER**(<string1>) FROM <table>;

**LTRIM –**

SyntaxSELECT **LTRIM** (<*text-exp>* [, <*trim-exp>*]) FROM <table>;

**DATE FUNCTIONS**

**ADD\_MONTHS**

Syntax SELECT **ADD\_MONTHS**( <date1>, <number\_months> ) FROM <table>;

**MONTHS\_BETWEEN**

SyntaxSELECT **MONTHS\_BETWEEN**( <date1>, <date2>) FROM <table>;

**TO\_DATE**

Syntax SELECT**SUM**(<aggregate\_expression>)

FROM <table>

[WHERE <conditions>];

**Assignment:**

**Perform the following queries using DUAL:**

* Display the current DATE and TIME.
* Multiply 2 by 2 .
* Find the absolute value of -15
* Calculate the square root of 5.
* Round off 15.19 to one decimal point:
* Display the name " IVAN BAYROSS" in LOWERCASE.
* Display the name " IVAN BAYROSS" in UPPERCASE.
* Add 5 months to the present date and print the output.
* Display the number of months between ‘02-JAN-01' and '02-JUL-01'
* Print the system date in the particular format ‘DD/MMIYYYY'

**Create the following table and insert 10 rows in the table:**

. EMP (EMPNO , ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPT \_NAME)

* EMPNO must be between 7000 and 8000
* ENAME must not exceed 10 characters
* MGR is managers EMPNO
* COMM (commission) must be under 1500 and defaults to O. Only who works as salesman gets certain commission.
* DEPT \_NAME is the name of the department in which the employees works.

**Write necessary SQL queries with corresponding Outputs for the following:**

1. List the names of employees whose names have " i" as the second character .
2. List names of employees who are not managers.
3. Display the highest, lowest, Sum and average of all employees. Label the columns as "Maximum" "Minimum" "Total" and "Average".
4. Modify-the above query to display the highest, lowest, sum and average salary for each job type.
5. Determine the number of managers. Label the column "Number of managers"
6. Find the employees who were hired after '01-jan-1980'
7. Display the name of employee who earns maximum salary whose job is salesman
8. Display the name of employee who earns minimum salary and whose job is clerk.
9. Display the name of the department in which 'FORD' works.
10. Display the name of the department whose salary is maximum.
11. List the flame of the employee whose salary is more than 'TURNER'