# EXPERIMENT:3

## QUERIES USING AGGREGATE FUNCTIONS (COUNT,SUM,AVG,MAX AND MIN)

### GROUPBY,HAVING and Creation and dropping of Views.

#### SOLUTION:

1. **COUNT:** Calculate the number of employees in dept20. **SQL>SELECT COUNT(\*)NO\_EMP FROM EMP WHERE DEPTNO=20;** NO\_EMP

5

1. **SUM:** Calculate the total salaries for each dept

#### SQL>SELECT DEPTNO,SUM(SAL) FROM EMP GROUP BY DEPTNO;

DEPTNO SUM(SAL) 30 9400

20 10875

10 8750

1. **AVG:** Calculate the average salaries for each dept

#### SQL>SELECT DEPT\_NO,AVG(SAL) FROM EMP GROUP BY DEPT\_NO;

DEPT\_NOAVG(SAL) 30 1566.66667

20 2175

10 2916.66667

1. **MAX:** Calculate the maximum salary for each dept

#### SQL>SELECT DEPT NO,MAX(SAL)FROM EMP GROUP BY DEPTNO;

DEPTNOMAX(SAL) 30 2850

20 3000

10 5000

1. **MIN:** Calculate them in minimum salary for each dept

#### SQL>SELECT DEPTNO,MIN(SAL) FROM EMP GROUP BY DEPTNO;

DEPTNOMIN(SAL) 30 950

20 800

10 1300

1. **GROUPBY:** The GROUP BY clause is a SQL command that is used to group rows that have the same values.

The GROUPBY clause is used in the SELECT statement. Optionally it is used in conjunction with aggregate functions to produce summary reports from the database.

*GROUPBY Syntax:*

*SELECT statements…GROUPBYcolumn\_name1[column\_name2,…];*

Grouping using a Single Column:

Create a table called data with gender column and values as male and female.

##### SQL>select \*from data;

GENDER

male female female female female female male male male female male male female male male female

16 rows selected

##### SQL>select gender from data GROUP BY gender;

GENDER

male female

##### SQL>select count(gender), gender from data GROUP BY gender;

COUNT(GENDER) GENDER

8 male

8 female

Grouping using Multiple Columns

*Syntax:*

SELECTColumn1,Column2, AGGREGATE\_FUNCTION(Column3)FROMTABLE1GROUPBY

Column1,Column2; Examples:

##### SQL>select \*from emp;

ID NAME DEPT SAL

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | a | cse | 1000 |
| 2 | b | ece | 2000 |
| 3 | c | eee | 3000 |
| 4 | d | cse | 4000 |
| 1 | z | cse | 5000 |
| 5 | a | ece | 6000 |
| 6 | e | ece | 7000 |
| 2 | b | eee | 9000 |

8 rows selected.

##### SQL>select id, name from emp GROUP BY id,name;

ID NAME

3 c

4 d

|  |  |
| --- | --- |
| 1 | a |
| 2 | b |
| 5 | a |
| 1 | z |
| 6 | e |

7 rows selected

#### HAVING

aggregate functions.

* + The WHERE clause places conditions on the selected columns, where as the HAVING clause places conditions on groups created by the GROUP BY clause.
  + The HAVING clause must follow the GROUPBY clause in a query and must also precede the ORDER BY clause if used

*HAVING Syntax*

*SELECT column\_name(s)FROM table\_name WHERE condition GROUPBYcolumn\_name(s) HAVING condition*

##### SQL>select \*from emp;

ID NAME DEPT SAL

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | a | cse | 1000 |
| 2 | b | ece | 2000 |
| 3 | c | eee | 3000 |
| 4 | d | cse | 4000 |
| 5 | e | ece | 5000 |

##### SQL>select count (id),dept from emp GROUP BY dept having count(id)>1;

COUNT(ID) DEPT

2 cse

2 ece

##### SQL>select \*from emp;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | NAME |  | DEPT |  | SAL |
| 1 | a |  | cse |  | 1000 |
| 2 | b |  | ece |  | 2000 |
| 3 | c |  | eee |  | 3000 |
| 4 | d |  | cse |  | 4000 |
| 5 | e |  | ece |  | 5000 |

**SQL>select max(sal),dept from emp GROUP BY dept;**

MAX(SAL) DEPT

4000 cse

3000 eee

5000 ece

##### SQL>select max(sal),dept from emp GROUP BY dept having max(sal)>3000;

MAX(SAL) DEPT

4000 cse

5000 ece

##### View:

* Views in SQL are considered as a virtual table. A view also contains rows and columns.
* To create the view, we can select the fields from one or more tables present in the database.
* A view can either have specific rows based on certain condition or all the rows of a table.

##### SQL>select\*from emp;

ENO ENAME SALARY LOC

|  |  |  |  |
| --- | --- | --- | --- |
| 101 | ali | 15000 | vja |
| 102 | haji | 20000 | hyd |
| 103 | mohammad | 42000 | vja |
| 104 | ravi | 23000 | gnt |
| 105 | irfath | 50000 | hyd |

##### SQL>create VIEW hyd as select \* from emp where loc='hyd';

View created.

##### SQL>select\*from hyd;

ENO ENAME SALARY LOC

|  |  |  |  |
| --- | --- | --- | --- |
| 102 | haji | 20000 | hyd |
| 105 | irfath | 50000 | hyd |

##### SQL>drop VIEW hyd;

View dropped. **SQL>select \* from hyd;** Select \* from hyd

\*

ERROR at line1:

ORA-00942:table or view does not exist