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LAB 4

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Section: A

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Course: Data Base (LAB)

EXAMPLES:

Using less than condition:

```
SQL> select ename, job, sal from emp where sal<=3000;

ENAME      JOB              SAL
---------- --------- ----------
SMITH      CLERK            800
ALLEN      SALESMAN        1600
WARD       SALESMAN        1250
JONES      MANAGER         2975
MARTIN     SALESMAN        1250
BLAKE      MANAGER         2850
CLARK      MANAGER         2450
SCOTT      ANALYST         3000
TURNER     SALESMAN        1500
ADAMS      CLERK           1100
JAMES      CLERK            950

ENAME      JOB              SAL
---------- --------- ----------
FORD       ANALYST         3000
MILLER     CLERK           1300

13 rows selected.
```

Using BETWEEN condition:

```
SQL> select ename, job, sal from emp where sal between 2500 and 3000;

ENAME      JOB              SAL
---------- --------- ----------
JONES      MANAGER         2975
BLAKE      MANAGER         2850
SCOTT      ANALYST         3000
FORD       ANALYST         3000
```

Using IN condition:

```
SQL> select ename, job, sal from emp where sal in (2000,2500,3000);

ENAME      JOB              SAL
---------- --------- ----------
SCOTT      ANALYST         3000
FORD       ANALYST         3000
```

Using LIKE condition:

```
SQL> select ename from emp where ename like 'A%';

ENAME
----------
ALLEN
ADAMS

SQL> select ename from emp where ename like '_A%';

ENAME
----------
WARD
MARTIN
JAMES
```

Using the NULL condition:

```
SQL> select empno, ename, comm from emp where comm is null;

     EMPNO ENAME            COMM
---------- ---------- ----------
      7369 SMITH
      7566 JONES
      7698 BLAKE
      7782 CLARK
      7788 SCOTT
      7839 KING
      7876 ADAMS
      7900 JAMES
      7902 FORD
      7934 MILLER

10 rows selected.

SQL> select empno from emp where ename is null;

no rows selected
```

Using the AND Operator:

```
SQL> select empno, ename, sal, comm from emp where sal>=1000 and comm>0;

     EMPNO ENAME             SAL       COMM
---------- ---------- ---------- ----------
      7499 ALLEN            1600        300
      7521 WARD             1250        500
      7654 MARTIN           1250       1400
```

Using the OR Operator:

```
SQL> select empno, ename, sal, comm from emp where sal>=1000 or comm>0;

     EMPNO ENAME             SAL       COMM
---------- ---------- ---------- ----------
      7499 ALLEN            1600        300
      7521 WARD             1250        500
      7566 JONES            2975
      7654 MARTIN           1250       1400
      7698 BLAKE            2850
      7782 CLARK            2450
      7788 SCOTT            3000
      7839 KING             5000
      7844 TURNER           1500          0
      7876 ADAMS            1100
      7902 FORD             3000

     EMPNO ENAME             SAL       COMM
---------- ---------- ---------- ----------
      7934 MILLER           1300

12 rows selected.
```

Using the NOT Operator:

```
SQL> select ename, job from emp where job not in ('CLERK');

ENAME      JOB
---------- ---------
ALLEN      SALESMAN
WARD       SALESMAN
JONES      MANAGER
MARTIN     SALESMAN
BLAKE      MANAGER
CLARK      MANAGER
SCOTT      ANALYST
KING       PRESIDENT
TURNER     SALESMAN
FORD       ANALYST

10 rows selected.
```

Rules of Precedence:

```
SQL> select ename, job, sal from emp where (job = 'CLERK' or job = 'MANAGER') and sal>1000;

ENAME      JOB              SAL
---------- --------- ----------
JONES      MANAGER         2975
BLAKE      MANAGER         2850
CLARK      MANAGER         2450
ADAMS      CLERK           1100
MILLER     CLERK           1300
```

ORDER BY Clause:

```
SQL> select ename, job, hiredate from emp order by hiredate;

ENAME      JOB       HIREDATE
---------- --------- ---------
SMITH      CLERK     17-DEC-80
ALLEN      SALESMAN  20-FEB-81
WARD       SALESMAN  22-FEB-81
JONES      MANAGER   02-APR-81
BLAKE      MANAGER   01-MAY-81
CLARK      MANAGER   09-JUN-81
TURNER     SALESMAN  08-SEP-81
MARTIN     SALESMAN  28-SEP-81
KING       PRESIDENT 17-NOV-81
JAMES      CLERK     03-DEC-81
FORD       ANALYST   03-DEC-81

ENAME      JOB       HIREDATE
---------- --------- ---------
MILLER     CLERK     23-JAN-82
SCOTT      ANALYST   19-APR-87
ADAMS      CLERK     23-MAY-87

14 rows selected.
```

```
SQL> select ename, job, hiredate from emp order by hiredate desc;

ENAME      JOB       HIREDATE
---------- --------- ---------
ADAMS      CLERK     23-MAY-87
SCOTT      ANALYST   19-APR-87
MILLER     CLERK     23-JAN-82
FORD       ANALYST   03-DEC-81
JAMES      CLERK     03-DEC-81
KING       PRESIDENT 17-NOV-81
MARTIN     SALESMAN  28-SEP-81
TURNER     SALESMAN  08-SEP-81
CLARK      MANAGER   09-JUN-81
BLAKE      MANAGER   01-MAY-81
JONES      MANAGER   02-APR-81

ENAME      JOB       HIREDATE
---------- --------- ---------
WARD       SALESMAN  22-FEB-81
ALLEN      SALESMAN  20-FEB-81
SMITH      CLERK     17-DEC-80

14 rows selected.
```

```
SQL> select ename, job, hiredate as joining_date from emp order by joining_date desc;

ENAME      JOB       JOINING_D
---------- --------- ---------
ADAMS      CLERK     23-MAY-87
SCOTT      ANALYST   19-APR-87
MILLER     CLERK     23-JAN-82
FORD       ANALYST   03-DEC-81
JAMES      CLERK     03-DEC-81
KING       PRESIDENT 17-NOV-81
MARTIN     SALESMAN  28-SEP-81
TURNER     SALESMAN  08-SEP-81
CLARK      MANAGER   09-JUN-81
BLAKE      MANAGER   01-MAY-81
JONES      MANAGER   02-APR-81

ENAME      JOB       JOINING_D
---------- --------- ---------
WARD       SALESMAN  22-FEB-81
ALLEN      SALESMAN  20-FEB-81
SMITH      CLERK     17-DEC-80

14 rows selected.
```

```
SQL> select ename, sal from emp order by ename, sal desc;

ENAME            SAL
---------- ----------
ADAMS          1100
ALLEN          1600
BLAKE          2850
CLARK          2450
FORD           3000
JAMES           950
JONES          2975
KING           5000
MARTIN         1250
MILLER         1300
SCOTT          3000

ENAME            SAL
---------- ----------
SMITH           800
TURNER         1500
WARD           1250

14 rows selected.
```

Substitution Variables:

```
SQL> select empno, ename from emp where empno =&emp_id;
Enter value for emp_id: 7900
old   1: select empno, ename from emp where empno =&emp_id
new   1: select empno, ename from emp where empno =7900

     EMPNO ENAME
---------- ----------
      7900 JAMES
```

```
SQL> select empno, ename, job from emp where job ='&job';
Enter value for job: CLERK
old   1: select empno, ename, job from emp where job ='&job'
new   1: select empno, ename, job from emp where job ='CLERK'

     EMPNO ENAME      JOB
---------- ---------- ---------
      7369 SMITH      CLERK
      7876 ADAMS      CLERK
      7900 JAMES      CLERK
      7934 MILLER     CLERK
```

Specifying Column Names, Expressions, and Text:

```
SQL> select ename, job, &col_name from emp where &condition order by &order_col;
Enter value for col_name: sal
Enter value for condition: sal>1000
Enter value for order_col: sal
old   1: select ename, job, &col_name from emp where &condition order by &order_col
new   1: select ename, job, sal from emp where sal>1000 order by sal

ENAME      JOB              SAL
---------- --------- ----------
ADAMS      CLERK          1100
WARD       SALESMAN       1250
MARTIN     SALESMAN       1250
MILLER     CLERK          1300
TURNER     SALESMAN       1500
ALLEN      SALESMAN       1600
CLARK      MANAGER        2450
BLAKE      MANAGER        2850
JONES      MANAGER        2975
FORD       ANALYST        3000
SCOTT      ANALYST        3000

ENAME      JOB              SAL
---------- --------- ----------
KING       PRESIDENT      5000

12 rows selected.
```

Using the && Substitution Variable:

```
SQL> select empno, ename, &&col_name from emp order by & col_name;
Enter value for col_name: sal
old   1: select empno, ename, &&col_name from emp order by & col_name
new   1: select empno, ename, sal from emp order by sal

     EMPNO ENAME              SAL
---------- ---------- ----------
      7369 SMITH             800
      7900 JAMES             950
      7876 ADAMS            1100
      7521 WARD             1250
      7654 MARTIN           1250
      7934 MILLER           1300
      7844 TURNER           1500
      7499 ALLEN            1600
      7782 CLARK            2450
      7698 BLAKE            2850
      7566 JONES            2975

     EMPNO ENAME              SAL
---------- ---------- ----------
      7788 SCOTT            3000
      7902 FORD             3000
      7839 KING             5000

14 rows selected.
```

Using the VERIFY Command:

```
SQL> set verify off
SQL> select empno, ename, sal from emp order by &col_name;

     EMPNO ENAME             SAL
---------- ---------- ----------
      7369 SMITH             800
      7900 JAMES             950
      7876 ADAMS            1100
      7521 WARD             1250
      7654 MARTIN           1250
      7934 MILLER           1300
      7844 TURNER           1500
      7499 ALLEN            1600
      7782 CLARK            2450
      7698 BLAKE            2850
      7566 JONES            2975

     EMPNO ENAME             SAL
---------- ---------- ----------
      7788 SCOTT            3000
      7902 FORD             3000
      7839 KING             5000

14 rows selected.
```

```
SQL> set verify on
SQL> select empno, ename, sal from emp order by &col_name;
old   1: select empno, ename, sal from emp order by &col_name
new   1: select empno, ename, sal from emp order by sal

     EMPNO ENAME             SAL
---------- ---------- ----------
      7369 SMITH             800
      7900 JAMES             950
      7876 ADAMS            1100
      7521 WARD             1250
      7654 MARTIN           1250
      7934 MILLER           1300
      7844 TURNER           1500
      7499 ALLEN            1600
      7782 CLARK            2450
      7698 BLAKE            2850
      7566 JONES            2975

     EMPNO ENAME             SAL
---------- ---------- ----------
      7788 SCOTT            3000
      7902 FORD             3000
      7839 KING             5000

14 rows selected.
```

TASKS

1. **Create a query to display the employee name and salary of employees earning more than $1800.**

```
SQL> select ename, sal from emp where sal>1800;

ENAME             SAL
---------- ----------
JONES            2975
BLAKE            2850
CLARK            2450
SCOTT            3000
KING             5000
FORD             3000

6 rows selected.
```

2. **Create a query to display the employee name and department number of for employee number 7900.**

```
SQL> select ename,deptno from emp where empno=7900;

ENAME          DEPTNO
---------- ----------
JAMES              30
```

3. **Display the employee name and salary for all employees whose salary is not in the range of $500 and $1200.**

```
SQL> select ename, sal from emp where sal not between 500 and 1200;

ENAME             SAL
---------- ----------
ALLEN            1600
WARD             1250
JONES            2975
MARTIN           1250
BLAKE            2850
CLARK            2450
SCOTT            3000
KING             5000
TURNER           1500
FORD             3000
MILLER           1300

11 rows selected.
```

4. **Display the employee name, job, start date of employees hired between 20 February 1981 and May 1, 1982. Order the query in ascending order by start date.**

```
SQL> select ename, job, hiredate as startdate from emp where hiredate between '20-FEB-81' and '01-MAY-82' order by hiredate;

ENAME      JOB       STARTDATE
---------- --------- ---------
ALLEN      SALESMAN  20-FEB-81
WARD       SALESMAN  22-FEB-81
JONES      MANAGER   02-APR-81
BLAKE      MANAGER   01-MAY-81
CLARK      MANAGER   09-JUN-81
TURNER     SALESMAN  08-SEP-81
MARTIN     SALESMAN  28-SEP-81
KING       PRESIDENT 17-NOV-81
JAMES      CLERK     03-DEC-81
FORD       ANALYST   03-DEC-81
MILLER     CLERK     23-JAN-82

11 rows selected.
```

5. **Display the employee name and department number of all employees in department 20 and 30 in alphabetical order by name.**

```
SQL> select ename, deptno from emp where deptno in (20,30) order by ename;

ENAME           DEPTNO
---------- ----------
ADAMS               20
ALLEN               30
BLAKE               30
FORD                20
JAMES               30
JONES               20
MARTIN              30
SCOTT               20
SMITH               20
TURNER              30
WARD                30

11 rows selected.
```

6. **List the last name and salary of employees who earn between $1000 and $2000 and are in department 10 or 30. Label the columns Employee and Monthly Salary, respectively.**

```
  2
SQL> select ename as employee, sal as monthly_salary from emp where (sal between 1000 and 2000) and deptno in (10,30);

EMPLOYEE   MONTHLY_SALARY
---------- --------------
ALLEN                1600
WARD                 1250
MARTIN               1250
TURNER               1500
MILLER               1300
```

7. **Display the employee name and hire date of every employee who was hired in 1982.**

```
SQL> select ename, hiredate from emp where hiredate between '01-JAN-82' and '30-DEC-82';

ENAME      HIREDATE
---------- ---------
MILLER     23-JAN-82
```

8. **Display the employee name and job title of all employees who do not have a manager.**

```
SQL> select ename, job from emp where mgr is null;

ENAME      JOB
---------- ---------
KING       PRESIDENT
```

9. **Display the last name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.**

```
SQL> select ename as lastname, sal, comm from emp where comm is not null order by sal desc, comm desc;

LASTNAME          SAL       COMM
---------- ---------- ----------
ALLEN            1600        300
TURNER           1500          0
MARTIN           1250       1400
WARD             1250        500
```

10. **Display all employee names of all employees where the third letter of the name is 'a'.**

```
SQL> select ename from emp where ename like '__A%';

ENAME
----------
BLAKE
CLARK
ADAMS
```

11. Display the employee name of all employees who have an ‘a’ and ‘e’ in their name.

```
SQL> select ename from emp where ename like '%A%E%';

ENAME
----------
ALLEN
BLAKE
JAMES
```

12. Display the employee name, job and salary for employees whose job title is entered by the user and whose salary is not equal to $1000, $1200, $1800. Also sort the data according to the column name entered by the user.

```
SQL> select ename, &&col_name,sal from emp where &col_name=&job and sal not in (1000,1200,1800) order by &col_name;
Enter value for col_name: job
Enter value for job: 'CLERK'
old   1: select ename, &&col_name,sal from emp where &col_name=&job and sal not in (1000,1200,1800) order by &col_name
new   1: select ename, job,sal from emp where job='CLERK' and sal not in (1000,1200,1800) order by job

ENAME      JOB              SAL
---------- --------- ----------
SMITH      CLERK            800
ADAMS      CLERK           1100
JAMES      CLERK            950
MILLER     CLERK           1300
```

13. Display the employee name, salary, and commissions for all employees whose commission amount is 20%.

```
SQL> select ename, sal, comm, sal * 20/100 as commission from emp;

ENAME             SAL       COMM COMMISSION
---------- ---------- ---------- ----------
SMITH              800                  160
ALLEN             1600        300        320
WARD              1250        500        250
JONES             2975                   595
MARTIN            1250       1400        250
BLAKE             2850                   570
CLARK             2450                   490
SCOTT             3000                   600
KING              5000                  1000
TURNER            1500          0        300
ADAMS             1100                   220

ENAME             SAL       COMM COMMISSION
---------- ---------- ---------- ----------
JAMES              950                   190
FORD              3000                   600
MILLER            1300                   260

14 rows selected.
```

14. Display the employee name, salary of all employees whose condition of salary is entered by user. Sort the data in descending order according to the salary.

```
SQL> select ename, sal from emp where &condition order by sal desc;
Enter value for condition: sal>1500
old   1: select ename, sal from emp where &condition order by sal desc
new   1: select ename, sal from emp where sal>1500 order by sal desc

ENAME             SAL
---------- ----------
KING             5000
FORD             3000
SCOTT            3000
JONES            2975
BLAKE            2850
CLARK            2450
ALLEN            1600

7 rows selected.
```