Oracle 10g

LAB GUIDE

Oracle 10g SQL

The essence of learning is change, behavioral changes in people. To learn, a person must want to change, to be better, to do differently, and this change does not occur without resistance. Resistance may be slight, or it may be great, and it may take a variable number of overt and covert forms.

(Lloyd Allen Cook)

Oracle 10g SQL ASSIGNMENT

"Practice and practice we can improve our skills."

Guidelines:

1. Queries are not case sensitive hence we can use either upper case or lower case. Its good to use either one case rather than using both in a single query.

*/**********

*Eg: select * from tablename or SELECT * FROM TABLE NAME*

**********/

2. We can use either Oracle 10g sql command line or browser version.

For better understanding and clear picture we have used web version for few queries and command line for few queries.

Topic Name

Objective

- Oracle 10g module will help you to understand the Oracle SQL.
- At the end of the module, you will be very familiar with:
- SQL:
    - DDL
    - DML
    - TCL
    - DCL
    - Select Statement
    - Functions in the Select statements
    - Joins
    - Subquery

Oracle-SQL Lab

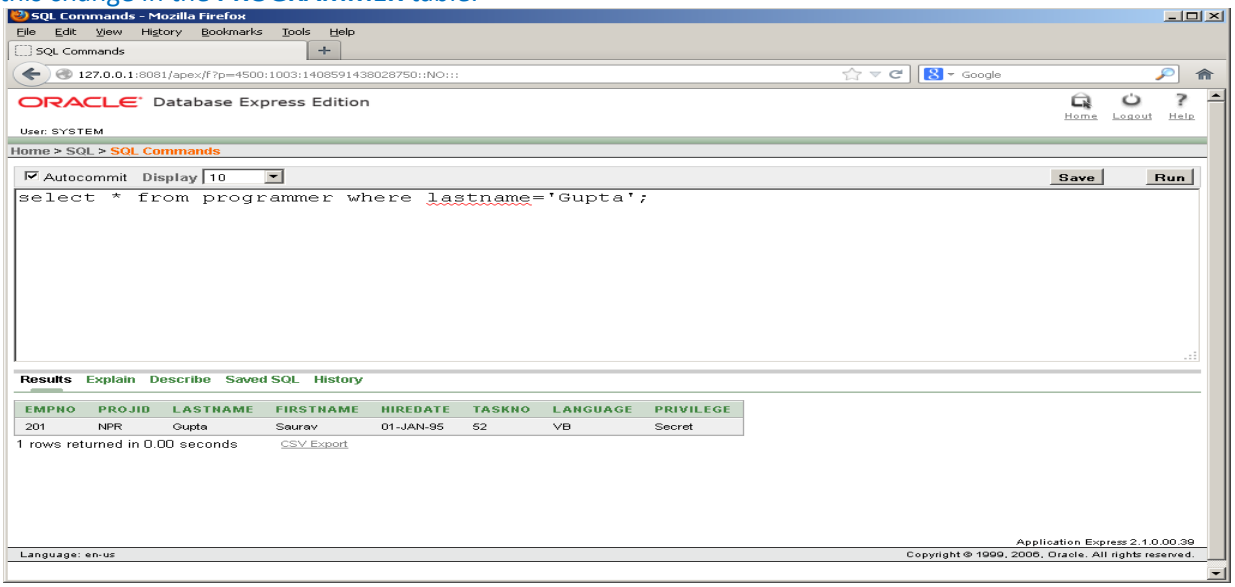
Task 1: Create the table **PROGRAMMER** with the given information using **SQL CREATE TABLE** commands:

Attribute Name	Description/Data type/Constraint
EmpNo	Employee's Unique ID. Max 5 characters, should be numeric
ProjId	Project in which programmer participates. Max 5 characters, should be character.
LastName	Surname of employee. Max 30 characters, Required.
FirstName	Employee's first name. Max 30 characters, Optional
HireDate	Date on which employee was hired. Date data type
Language	Programming Language used by programmer. Max 15 characters
TaskNo	Number of the rask associated with the project. Numeric column, max 2 digits
Privilege	Type of privilege given to programmer. Max 25 characters

Task 2 : Insert the following data into the **PROGRAMMER** table

EmpNo	LastName	FirstName	Hiredate	ProjId	Language	TaskNo	Privilege
201	Gupta	Saurav	1/1/95	NPR	VB	52	Secret
390	Ghosh	Pinky	1/5/93	KCW	JAVA	11	TopSecret
789	Agarwal	Praveen	8/3/98	RNC	VB	11	Secret
134	Chaudhury	Supriyo	7/15/95	TIPPS	C++	52	Secret
896	Jha	Ranjit	6/15/97	KCW	JAVA	10	TopSecret
345	John	Peter	11/15/99	TIPPS	JAVA	52	
563	Anderson	Andy	08/15/94	NITTS	C++	89	Confidential

Task 3 : Saurav Gupta is assigned a different project with id NITTS and he would work with C++ now. Update this change in the **PROGRAMMER** table.



Task 4 : Supriyo Chaudhury has resigned his job. Delete the record from the table **PROGRAMMER**.

Task 5 : The column TaskNo in the **PROGRAMMER** table is no longer needed. Delete the column.

Task 6 : create table Department

Attribute Name	Description/Data type/Constraint
DeptNo	Department number is 2 digit numeric and is Unique.
Dname	Department name of a particular department, 20 character long, Dname should not be null.
Loc	Location of the department, 8 characters long, should not be null.

Task 7: In DEPARTMENT table, increase the field width if DNAME from 20 to 50

```
SQL>
SQL>
SQL> desc department;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 DEPTNO                                    NOT NULL NUMBER(2)
 DNAME                                     NOT NULL VARCHAR2(20)
 LOC                                       NOT NULL VARCHAR2(8)
```

Task 8: Insert the following data into the Department table

DEPTNO	DNAME	LOC
10	ACCOUNTS	NEWYORK
20	MARKETING	CHICAGO
30	SALES	ATLANTA
40	RESEARCH	OHIO

Task 9 : Create table EMP

Attribute Name	Description/Data type/Constraint
EmpNo	Employee number is 4 digit numeric and is the Primary Key.
Ename	Name of the employee, 10 characters, Cannot be null
Job	Cannot be null, The job of the employee can be MANAGER, CLERK, PRESIDENT
Sal	Cannot be null
Hiredate	Cannot be null
Deptno	Should reference DEPARTMENT Table, Deptno

Task 10 : Insert the following DATA into the Emp Table

EMPNO	ENAME	JOB	SAL	HIREDATE	DEPTNO
7001	JAMES	CLERK	3000	6/5/2005	10
7002	MASON	PRESIDENT	10000	6/6/2005	20
7003	CLARK	MANAGER	5000	6/5/2004	20
7004	JOHN	MANAGER	6000	6/8/2005	10
7005	BLAKE	CLERK	3500	6/9/2005	30

Task 11 : Create table Grade

Attribute Name	Description/Data type/Constraint
GradeNo	Grade number is Primary Key.
Hi_sal	Cannot be null
Lo_sal	Cannot be null

Task 12 : Drop the column Lo_sal from Grade Table

```
SQL> desc grade
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 GRADENO                                   NOT NULL NUMBER
 HI_SAL                                    NOT NULL NUMBER
 LO_SAL                                    NOT NULL NUMBER
```

Task 13: Add column Low_sal in Grade table

```
SQL> desc grade
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 GRADENO                                   NOT NULL NUMBER
 HI_SAL                                    NOT NULL NUMBER
 LO_SAL                                    NOT NULL NUMBER
```

Task 14: Insert the following data into the table

Grade_No	Hi_Sal	Low_Sal
1	2000	500
2	3500	2100
3	6000	3600
4	15000	6100

Task 16: Create table EMP_BACK from EMP table

```
SQL> desc emp;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 EMPNNO                                    NOT NULL NUMBER(4)
 ENAME                                     NOT NULL VARCHAR2(10)
 JOB                                                VARCHAR2(15)
 SAL                                       NOT NULL NUMBER
 HIREDATE                                  NOT NULL DATE
 DEPTNO                                             NUMBER(2)
```

Task 17:Increase the salary of JAMES from 3000 to 350

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                 SAL HIREDATE      DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7001 JAMES      CLERK             3000 05-JUN-05         10
      7002 MASON      PRESIDENT        10000 06-JUN-05         20
      7003 CLARK      MANAGER           5000 05-JUN-04         20
      7004 JOHN       MANAGER           6000 08-JUN-05         10
      7005 BLAKE      CLERK             3500 09-JUN-05         30
```

Task 18: Increase the salary of all MANAGER by 100

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                 SAL HIREDATE      DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7001 JAMES      CLERK             3500 05-JUN-05         10
      7002 MASON      PRESIDENT        10000 06-JUN-05         20
      7003 CLARK      MANAGER           5000 05-JUN-04         20
      7004 JOHN       MANAGER           6000 08-JUN-05         10
      7005 BLAKE      CLERK             3500 09-JUN-05         30
```

Task 19: Decrease the salary of DEPTNO 10 by 10

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                 SAL HIREDATE      DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7001 JAMES      CLERK             3500 05-JUN-05         10
      7002 MASON      PRESIDENT        10000 06-JUN-05         20
      7003 CLARK      MANAGER           6000 05-JUN-04         20
      7004 JOHN       MANAGER           7000 08-JUN-05         10
      7005 BLAKE      CLERK             3500 09-JUN-05         30
```

Task 20 : Add a numeric field COMM (commission) in EMP table. It can take value of null

```
SQL> desc emp
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 EMPNNO                                    NOT NULL NUMBER(4)
 ENAME                                     NOT NULL VARCHAR2(10)
 JOB                                                VARCHAR2(15)
 SAL                                       NOT NULL NUMBER
 HIREDATE                                  NOT NULL DATE
 DEPTNO                                             NUMBER(2)
```

Task 21: Initialize the value of COMM to zero in EMP table

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                 SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7001 JAMES      CLERK             3490 05-JUN-05         10
      7002 MASON      PRESIDENT        10000 06-JUN-05         20
      7003 CLARK      MANAGER           6000 05-JUN-04         20
      7004 JOHN       MANAGER           6990 08-JUN-05         10
      7005 BLAKE      CLERK             3500 09-JUN-05         30
```

Task 22: Remove the employees who have joined before 6-Jun-2005

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                 SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7001 JAMES      CLERK             3490 05-JUN-05         10
      7002 MASON      PRESIDENT        10000 06-JUN-05         20
      7003 CLARK      MANAGER           6000 05-JUN-04         20
      7004 JOHN       MANAGER           6990 08-JUN-05         10
      7005 BLAKE      CLERK             3500 09-JUN-05         30
```

Task 23: Remove employees whose salary is less than 3000

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                 SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT        10000 06-JUN-05         20
      7004 JOHN       MANAGER           6990 08-JUN-05         10
      7005 BLAKE      CLERK             3500 09-JUN-05         30
```

Task 24: List all employees who are working in department 10.

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                 SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT        10000 06-JUN-05         20
      7004 JOHN       MANAGER           6990 08-JUN-05         10
      7005 BLAKE      CLERK             3500 09-JUN-05         30
```

Task 25: List all employees of department 10 and are MANAGER

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                    SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05          20
      7004 JOHN       MANAGER              6990 08-JUN-05          10
      7005 BLAKE      CLERK                3500 09-JUN-05          30
```

Task 26: List all employees whose salary is between 3000 and 5000

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                    SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05          20
      7004 JOHN       MANAGER              6990 08-JUN-05          10
      7005 BLAKE      CLERK                3500 09-JUN-05          30
```

Task 27: List all employees who have joined after 10th July 2005

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                    SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05          20
      7004 JOHN       MANAGER              6990 08-JUN-05          10
      7005 BLAKE      CLERK                3500 09-JUN-05          30
```

Task 28 : List all employees who are MANAGER or PRESIDENT

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                    SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05          20
      7004 JOHN       MANAGER              6990 08-JUN-05          10
      7005 BLAKE      CLERK                3500 09-JUN-05          30
```

Task 29 : List all employees who are in deptno 10 or 20 and who are MANAGERS

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                       SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ---------- -
      7002 MASON      PRESIDENT            10000 06-JUN-05          20
      7004 JOHN       MANAGER               6990 08-JUN-05          10
      7005 BLAKE      CLERK                 3500 09-JUN-05          30
```

Task 30 : Update the commission of employees in deptno 10 to 500.

```
SQL> select ename,comm,deptno from emp;

ENAME             COMM     DEPTNO
---------- ---------- ----------
MASON                0         20
JOHN                 0         10
BLAKE                0         30
```

Task 31 : List all employees whose commission is null.

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                       SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT            10000 06-JUN-05          20          0
      7004 JOHN       MANAGER               6990 08-JUN-05          10        500
      7005 BLAKE      CLERK                 3500 09-JUN-05          30          0
```

Task 32: List the employees who are not a PRESIDENT or MANAGER

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                       SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ---------- -
      7002 MASON      PRESIDENT            10000 06-JUN-05          20
      7004 JOHN       MANAGER               6990 08-JUN-05          10
      7005 BLAKE      CLERK                 3500 09-JUN-05          30
```

Task 33: List all employees whose name begin with J

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05         20          0
      7004 JOHN       MANAGER              6990 08-JUN-05         10        500
      7005 BLAKE      CLERK                3500 09-JUN-05         30          0
```

Task 34 : List all employees whose name consists of A

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05         20          0
      7004 JOHN       MANAGER              6990 08-JUN-05         10        500
      7005 BLAKE      CLERK                3500 09-JUN-05         30          0
```

Task 35: List the employee SAL, COMM and bonus (Bonus is sal+comm.)

```
SQL>
SQL>
SQL> select * from emp;

    EMPNNO ENAME      JOB                SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05         20          0
      7004 JOHN       MANAGER              6990 08-JUN-05         10        500
      7005 BLAKE      CLERK                3500 09-JUN-05         30          0
```

Task 36: Display the salary of employees of MANAGER increased by 10%. The output should display salary and increased salary.

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05         20          0
      7004 JOHN       MANAGER              6990 08-JUN-05         10        500
      7005 BLAKE      CLERK                3500 09-JUN-05         30          0
```

Task 37 : Update the salary of MANAGER by 10%

```
SQL> SELECT * FROM EMP;

    EMPNNO ENAME      JOB                SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT            10000 06-JUN-05         20          0
      7004 JOHN       MANAGER               6990 08-JUN-05         10        500
      7005 BLAKE      CLERK                 3500 09-JUN-05         30          0
```

Task 38: Display the employees in the descending order of names

```
SQL> SELECT * FROM EMP;

    EMPNNO ENAME      JOB                SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT            10000 06-JUN-05         20          0
      7004 JOHN       MANAGER               7689 08-JUN-05         10        500
      7005 BLAKE      CLERK                 3500 09-JUN-05         30          0
```

Task 39: Display the employees in the ascending order of deptno, Job

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                SAL HIREDATE       DEPTNO       COMM
---------- ---------- --------------- ---------- --------- ---------- ----------
      7002 MASON      PRESIDENT            10000 06-JUN-05         20          0
      7004 JOHN       MANAGER               7689 08-JUN-05         10        500
      7005 BLAKE      CLERK                 3500 09-JUN-05         30          0
```

Task 40: Display all the employee names with the first letter in capitals and all the other characters in lower case

```
SQL> select ename from emp;

ENAME
----------
MASON
JOHN
BLAKE
```

Task 41 : Display all the employee names in lower case

```
SQL> select ename from emp;

ENAME
----------
MASON
JOHN
BLAKE
```

Task 42: Display the employee name and the position of letter A in each name

```
SQL> select ename from emp;

ENAME
----------
MASON
JOHN
BLAKE
```

Task 43: Extract the last 3 characters in employee name and display them.

```
SQL> select ename from emp;

ENAME
----------
MASON
JOHN
BLAKE
```

Task 44: Display the employee name and the length of the name

```
SQL> select ename from emp;

ENAME
----------
MASON
JOHN
BLAKE
```

Task 45 : Display the current system date and time

Task 46 : Display the number of employees in each department

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                    SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ---------- .
      7002 MASON      PRESIDENT            10000 06-JUN-05         20
      7004 JOHN       MANAGER               7689 08-JUN-05         10
      7005 BLAKE      CLERK                 3500 09-JUN-05         30
```

Task 47 : Display the number of employees in each department job wise

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                    SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05          20
      7004 JOHN       MANAGER              7689 08-JUN-05          10
      7005 BLAKE      CLERK                3500 09-JUN-05          30
```

Task 48: Display the total number of employees in the table

```
SQL> select * from emp;

    EMPNNO ENAME      JOB                    SAL HIREDATE       DEPTNO
---------- ---------- --------------- ---------- --------- ----------
      7002 MASON      PRESIDENT           10000 06-JUN-05          20
      7004 JOHN       MANAGER              7689 08-JUN-05          10
      7005 BLAKE      CLERK                3500 09-JUN-05          30
```

Task 49: Display the employee earning the highest salary

Task 50 : Select all employees who draw more salary than their departmental average