DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2021-22

EVEN SEMESTER

Lab Manual:

Programme (UG/PG)	:	UG
Semester	:	VI
SUBJECT CODE	:	18CSC303J
Course Title	:	DATABASE MANAGEMENT SYSTEM
FACULTY	**:**	Dr. S. SURESH

DONE BY: -

Name : A.Venkata
DineshReddy
Reg-No : RA1911028010098
SEC : CSE-CC (J1)

FACULTY OF ENGINEERING AND TECHNOLOGY

SRMIST (Under section 3 of UGC Act, 1956)
SRM, Kattankulathur- 603203 Kancheepuram District

INDEX: -

Sr. no.	Experiment	PAGE No.	DATE: -
1	Basic SQL Commands	1	25.1.22
2	SQL (DML Commands)	4	29.1.22
3	DCL and TCL Commands	7	09.2.22
4	SQL Constraints Commands	10	16.2.22
5	Basic Select Statements	13	16.2.22
6	SQL Functions	19	23.2.22
7	SQL Group Functions	23	09.3.22
8	SQL Advanced Select Statements	28	16.3.22
9	SQL Queries	31	30.3.22
10	PL/SQL Commands	34	06.4.22

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

Title of Experiment

AIM : To Create SQL basic commands

SQL Command:

```
SQL>  create table student(StudID integer,Studname varchar(20),DOB
date,Age integer,Dept varchar(10),Prog varchar(10),Spec varchar(10));

Table created.

SQL> desc student;

 Name                                      Null?    Type

 ----------------------------------------- -------- ----------------------------

 STUDID                                              NUMBER(38)

 STUDNAME                                                 VARCHAR2(20)

 DOB                                              DATE

 AGE                                              NUMBER(38)

 DEPT                                              VARCHAR2(10)

 PROG                                               VARCHAR2(10)

 SPEC                                              VARCHAR2(10)


SQL> insert into student values(98,'DineshReddy','19-May-
2002',20,'CSE','Btech','Cloud');


1 row created.


SQL> select * from student;
```

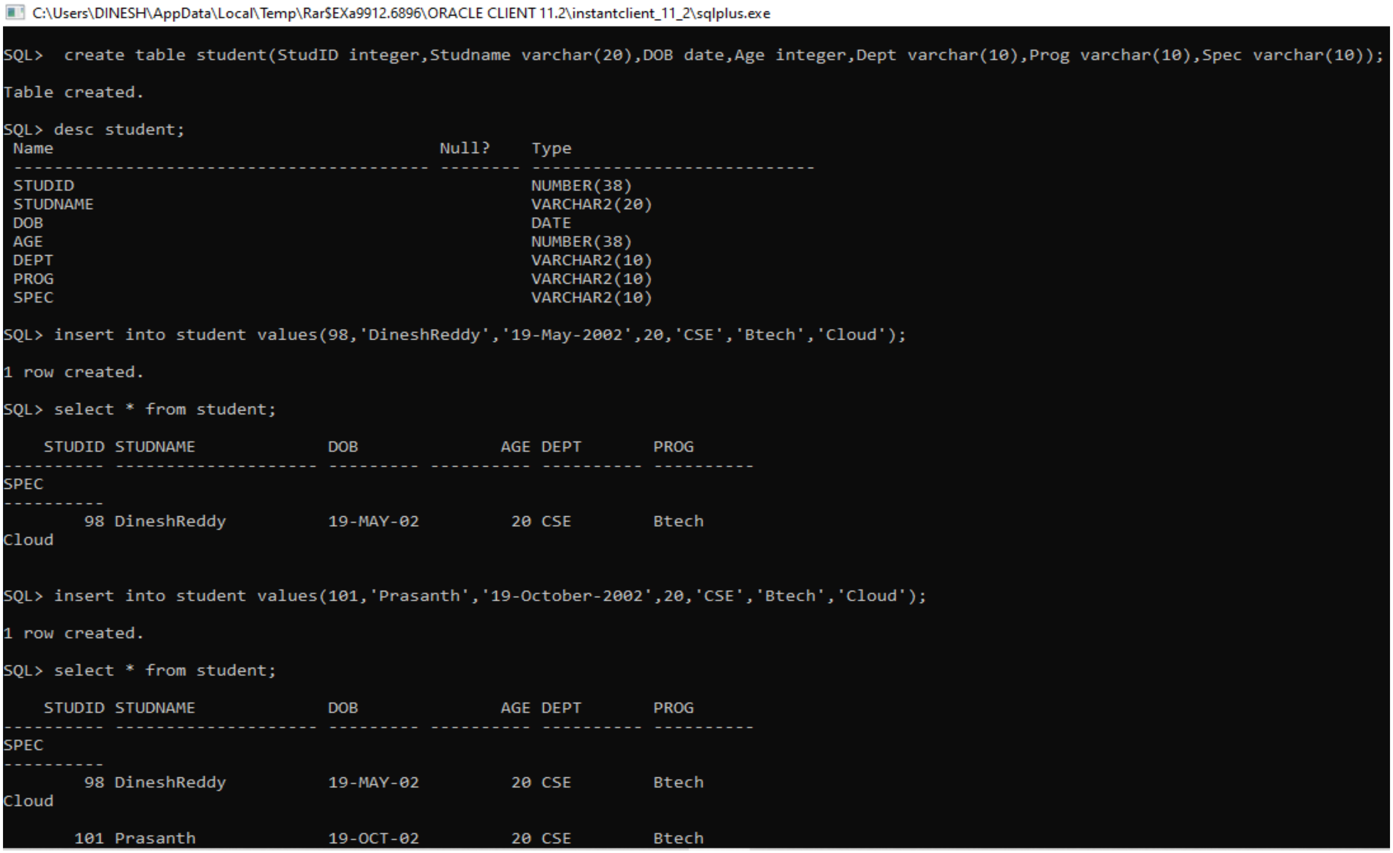
```
    STUDID STUDNAME             DOB              AGE DEPT       PROG

---------- -------------------- --------- ---------- ---------- ----------

SPEC

----------

        98 DineshReddy          19-MAY-02         20 CSE        Btech

Cloud




SQL> insert into student values(101,'Prasanth','19-October-
2002',20,'CSE','Btech','Cloud');


1 row created.


SQL> select * from student;


    STUDID STUDNAME             DOB              AGE DEPT       PROG

---------- -------------------- --------- ---------- ---------- ----------

SPEC

----------

        98 DineshReddy          19-MAY-02         20 CSE        Btech

Cloud



       101 Prasanth             19-OCT-02         20 CSE        Btech

Cloud
```

```
SQL> update student set age=21 where studid=101;

1 row updated.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC
----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud

       101 Prasanth             19-OCT-02         21 CSE        Btech
Cloud



SQL> select studid,studname from student;

    STUDID STUDNAME
---------- --------------------
        98 DineshReddy
       101 Prasanth

SQL> delete from student where studid=101;
```

```
1 row deleted.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC
----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud



SQL> alter table student add(sec varchar(10));

Table altered.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC       SEC
---------- ----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud
```

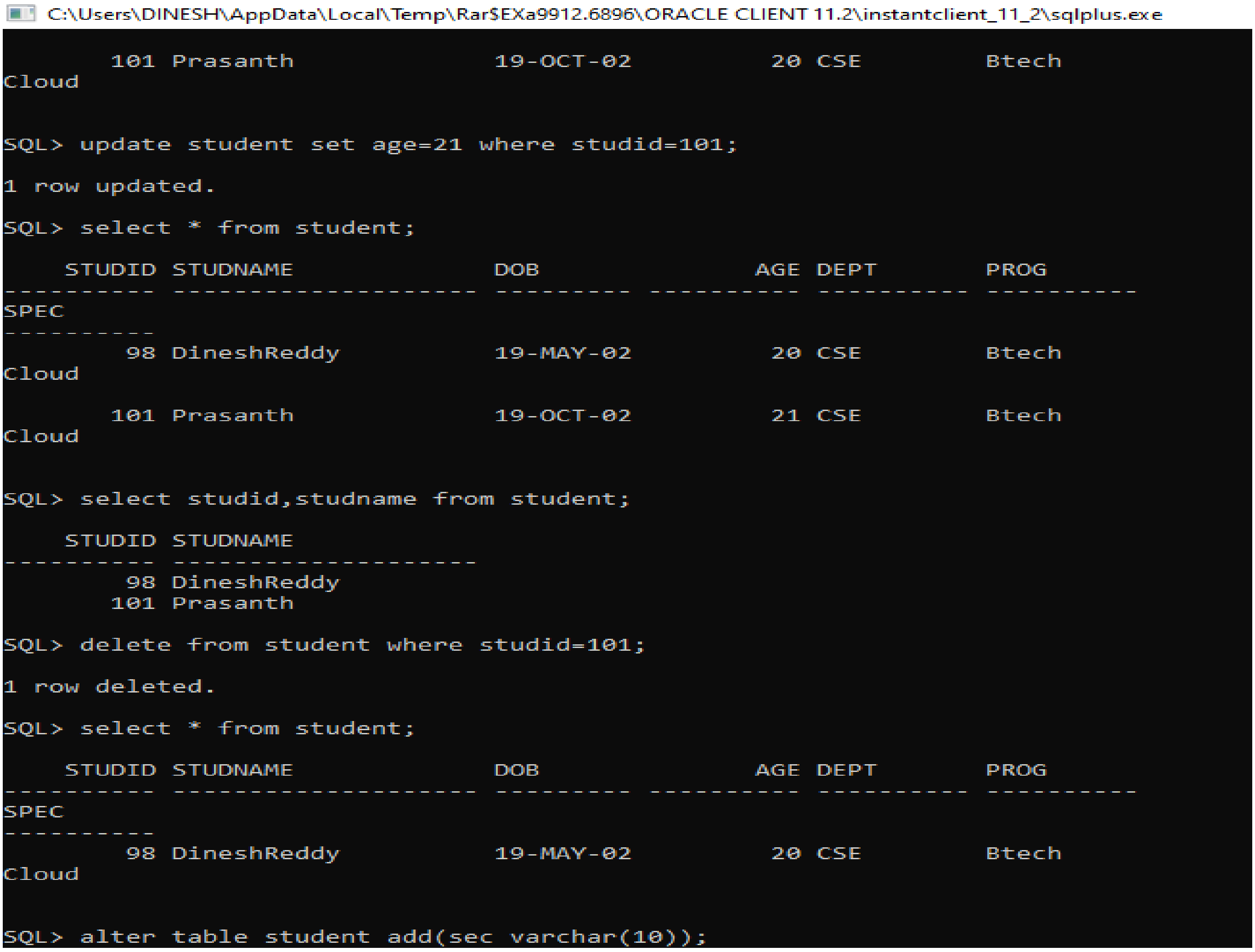
```
SQL> alter table student modify(dept varchar(3));


Table altered.


SQL> select * from student;


   STUDID STUDNAME             DOB             AGE DEP PROG       SPEC
---------- -------------------- --------- ---------- --- ---------- ----------
SEC
----------
        98 DineshReddy          19-MAY-02         20 CSE Btech      Cloud




SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 STUDID                                             NUMBER(38)
 STUDNAME                                           VARCHAR2(20)
 DOB                                                DATE
 AGE                                                NUMBER(38)
 DEPT                                               VARCHAR2(3)
 PROG                                               VARCHAR2(10)
 SPEC                                    VARCHAR2(10)
 SEC                                     VARCHAR2(10)


SQL> alter table student drop column sec;


Table altered.


SQL> select * from student;


    STUDID STUDNAME             DOB              AGE DEP PROG       SPEC
---------- -------------------- --------- ---------- --- ---------- ----------
        98 DineshReddy          19-MAY-02         20 CSE Btech      Cloud
```

OUTPUT:



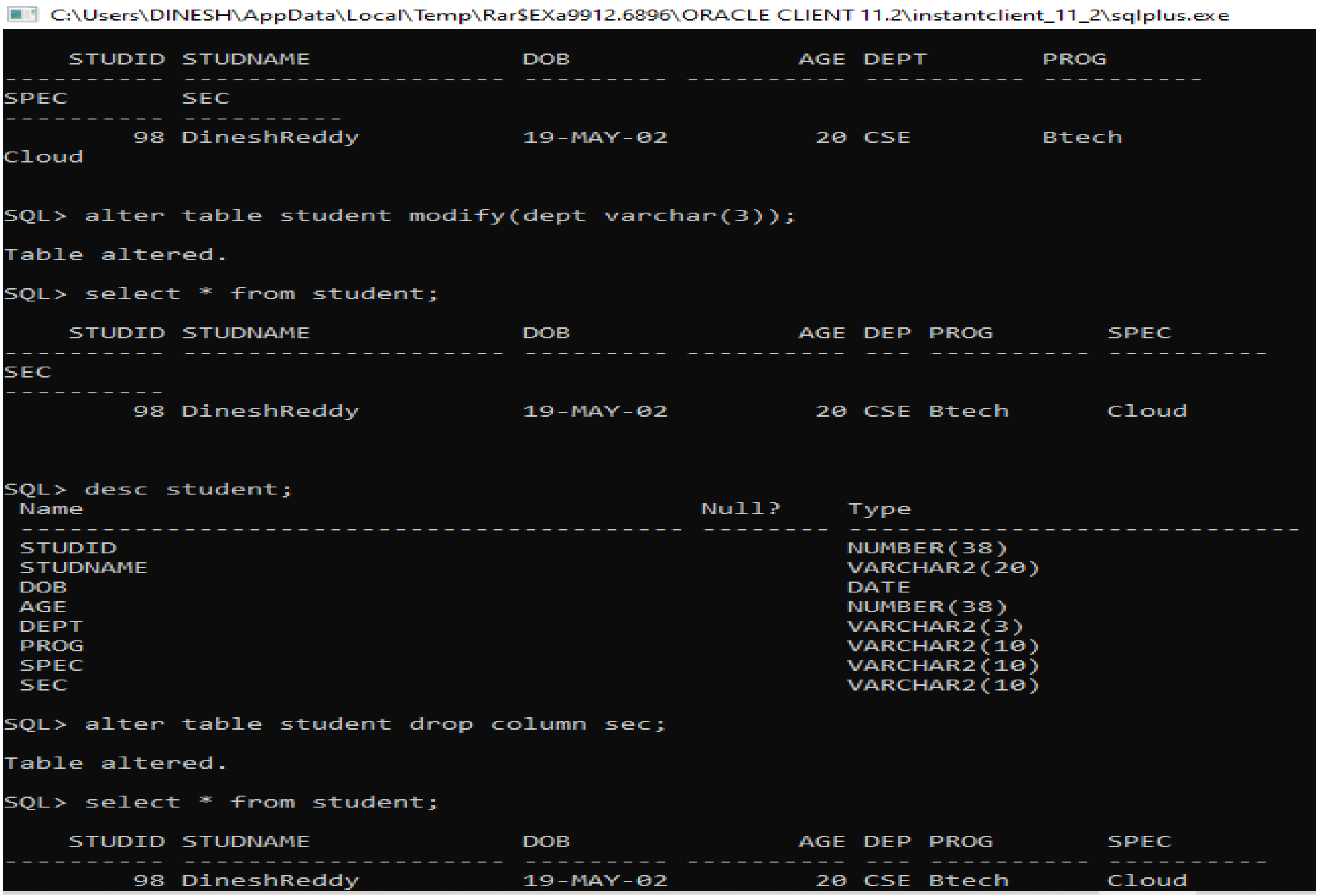
C:\Users\DINESH\AppData\Local\Temp\Rar$EXa9912.6896\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
SQL>  create table student(StudID integer,Studname varchar(20),DOB date,Age integer,Dept varchar(10),Prog varchar(10),Spec varchar(10));

Table created.

SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 STUDID                                             NUMBER(38)
 STUDNAME                                           VARCHAR2(20)
 DOB                                                DATE
 AGE                                                NUMBER(38)
 DEPT                                               VARCHAR2(10)
 PROG                                               VARCHAR2(10)
 SPEC                                               VARCHAR2(10)

SQL> insert into student values(98,'DineshReddy','19-May-2002',20,'CSE','Btech','Cloud');

1 row created.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC
----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud


SQL> insert into student values(101,'Prasanth','19-October-2002',20,'CSE','Btech','Cloud');

1 row created.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC
----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud

       101 Prasanth             19-OCT-02         20 CSE        Btech
```



C:\Users\DINESH\AppData\Local\Temp\Rar$EXa9912.6896\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
       101 Prasanth             19-OCT-02         20 CSE        Btech
Cloud


SQL> update student set age=21 where studid=101;

1 row updated.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC
----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud

       101 Prasanth             19-OCT-02         21 CSE        Btech
Cloud


SQL> select studid,studname from student;

    STUDID STUDNAME
---------- --------------------
        98 DineshReddy
       101 Prasanth

SQL> delete from student where studid=101;

1 row deleted.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC
----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud


SQL> alter table student add(sec varchar(10));
```



C:\Users\DINESH\AppData\Local\Temp\Rar$EXa9912.6896\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
    STUDID STUDNAME             DOB              AGE DEPT       PROG
---------- -------------------- --------- ---------- ---------- ----------
SPEC       SEC
---------- ----------
        98 DineshReddy          19-MAY-02         20 CSE        Btech
Cloud


SQL> alter table student modify(dept varchar(3));

Table altered.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEP PROG       SPEC
---------- -------------------- --------- ---------- --- ---------- ----------
SEC
----------
        98 DineshReddy          19-MAY-02         20 CSE Btech      Cloud



SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 STUDID                                             NUMBER(38)
 STUDNAME                                           VARCHAR2(20)
 DOB                                                DATE
 AGE                                                NUMBER(38)
 DEPT                                               VARCHAR2(3)
 PROG                                               VARCHAR2(10)
 SPEC                                               VARCHAR2(10)
 SEC                                                VARCHAR2(10)

SQL> alter table student drop column sec;

Table altered.

SQL> select * from student;

    STUDID STUDNAME             DOB              AGE DEP PROG       SPEC
---------- -------------------- --------- ---------- --- ---------- ----------
        98 DineshReddy          19-MAY-02         20 CSE Btech      Cloud
```

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

LEARN · LEAP · LEAD

Title of Experiment

AIM : **To write SQL queries to execute different DML commands.**

SQL Commands:

SELECT - Used to query or fetch selected fields or columns from a database table

Syntax,

SELECT column_name1, column_name2, …FROM table_name WHERE condition_ expression;

```
SQL> CREATE TABLE CUSTOMERS(CUSTOMER_ID INT,SALE_DATE
DATE,SALE_AMOUNT NUMERIC,SALESPERSON VARCHAR(255),
STORE_STATE VARCHAR(255),ORDER_ID VARCHAR(255));


Table created.


SQL> desc customers;

 Name                                      Null?    Type

 ----------------------------------------- -------- ----------------------------

 CUSTOMER_ID                                           NUMBER(38)

 SALE_DATE                                          DATE

 SALE_AMOUNT                                            NUMBER(38)

 SALESPERSON                                           VARCHAR2(255)

 STORE_STATE                                          VARCHAR2(255)

 ORDER_ID                                         VARCHAR2(255)
```

INSERT - Used to insert new data records or rows in the database table

Syntax,

INSERT INTO table_name (column_name_1, column_name_2,column_name_3, ...) VALUES (value1, value2, value3, ...)

```
SQL> INSERT INTO CUSTOMERS VALUES(1001,'23-MAY-
2020',1200,'RAJ K','KA','1001');


1 row created.


SQL> INSERT INTO CUSTOMERS VALUES(1001,'22-MAY-2020',1200,'M
K','NULL','1002');


1 row created.


SQL> INSERT INTO CUSTOMERS VALUES(1002,'23-MAY-
2020',1200,'MALIKA RAKESH','MH','1003');


1 row created.


SQL> INSERT INTO CUSTOMERS VALUES(1003,'22-MAY-
2020',1500,'MALIKA RAKESH','MH','1004');


1 row created.

SQL> INSERT INTO CUSTOMERS VALUES(1004,'22-MAY-2020',1210,'M
K','NULL','1003');
```

```
1 row created.


SQL> INSERT INTO CUSTOMERS VALUES(1005,'12-DEC-2019',4200,'R K
RAKESH','MH','1007');


1 row created.


SQL> INSERT INTO CUSTOMERS VALUES(1002,'12-MAY-
2020',1200,'MOLLY SAMBERG','DL','1001');


1 row created.

SQL> select * from customers;


CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1001 23-MAY-20        1200

RAJ K

KA

1001
```

```
CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1001 22-MAY-20        1200
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 23-MAY-20        1200
MALIKA RAKESH
```

```
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
```

```
--------------------------------------------------------------------------------

       1004 22-MAY-20        1210

M K

NULL

1003



CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1005 12-DEC-19        4200

R K RAKESH

MH

1007



CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------
```

```
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
      1002 12-MAY-20       1200
MOLLY SAMBERG
DL
1001



7 rows selected.
```

UPDATE - Used to set the value of a field or column for a particular record to a new value

Syntax,

UPDATE table_name SET column_name_1 = value1, column_name_2 = value2, ... WHERE condition;

```
SQL> UPDATE customers SET customer_id = 1007 where sale_amount
= 4200;


1 row updated.


SQL> select * from customers
  2
SQL>
SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1001 23-MAY-20        1200

RAJ K

KA

1001



CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1001 22-MAY-20        1200
```

```
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
```

```
ORDER_ID

--------------------------------------------------------------------------------

       1003 22-MAY-20        1500

MALIKA RAKESH

MH

1004



CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1004 22-MAY-20        1210

M K

NULL

1003



CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON
```

```
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1007 12-DEC-19        4200
R K RAKESH
MH
1007


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001
```

```
7 rows selected.
```

DELETE - Used to remove one or more rows from the database table.

Syntax,

DELETE FROM table_name WHERE condition;

SQL> DELETE from customers where customer_id = 1007;

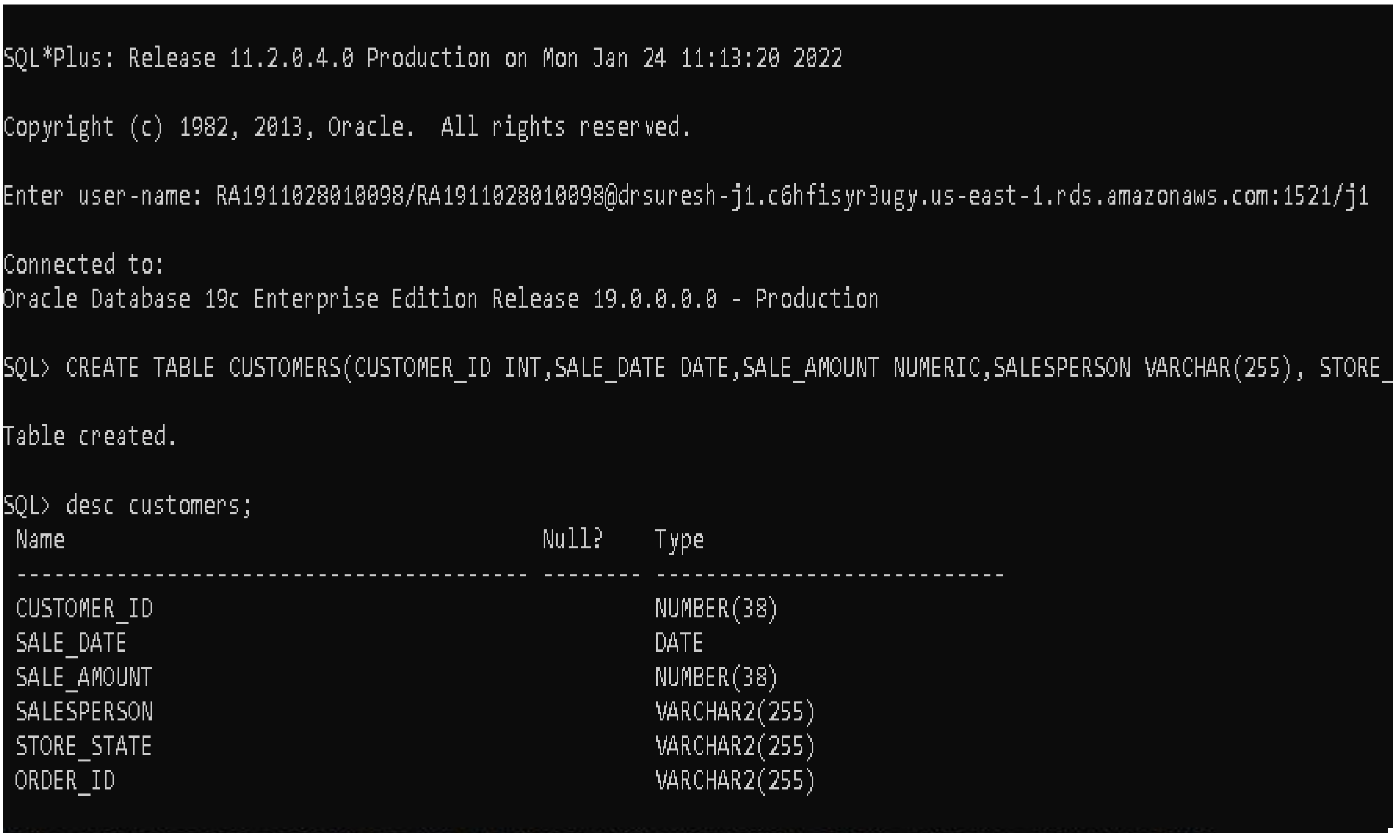
```
1 row deleted.


SQL> select * from customers;


CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1001 23-MAY-20        1200

RAJ K

KA

1001
```

```
CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1001 22-MAY-20        1200

M K

NULL

1002



CUSTOMER_ID SALE_DATE SALE_AMOUNT

----------- --------- -----------

SALESPERSON

--------------------------------------------------------------------------------

STORE_STATE

--------------------------------------------------------------------------------

ORDER_ID

--------------------------------------------------------------------------------

       1002 23-MAY-20        1200
```

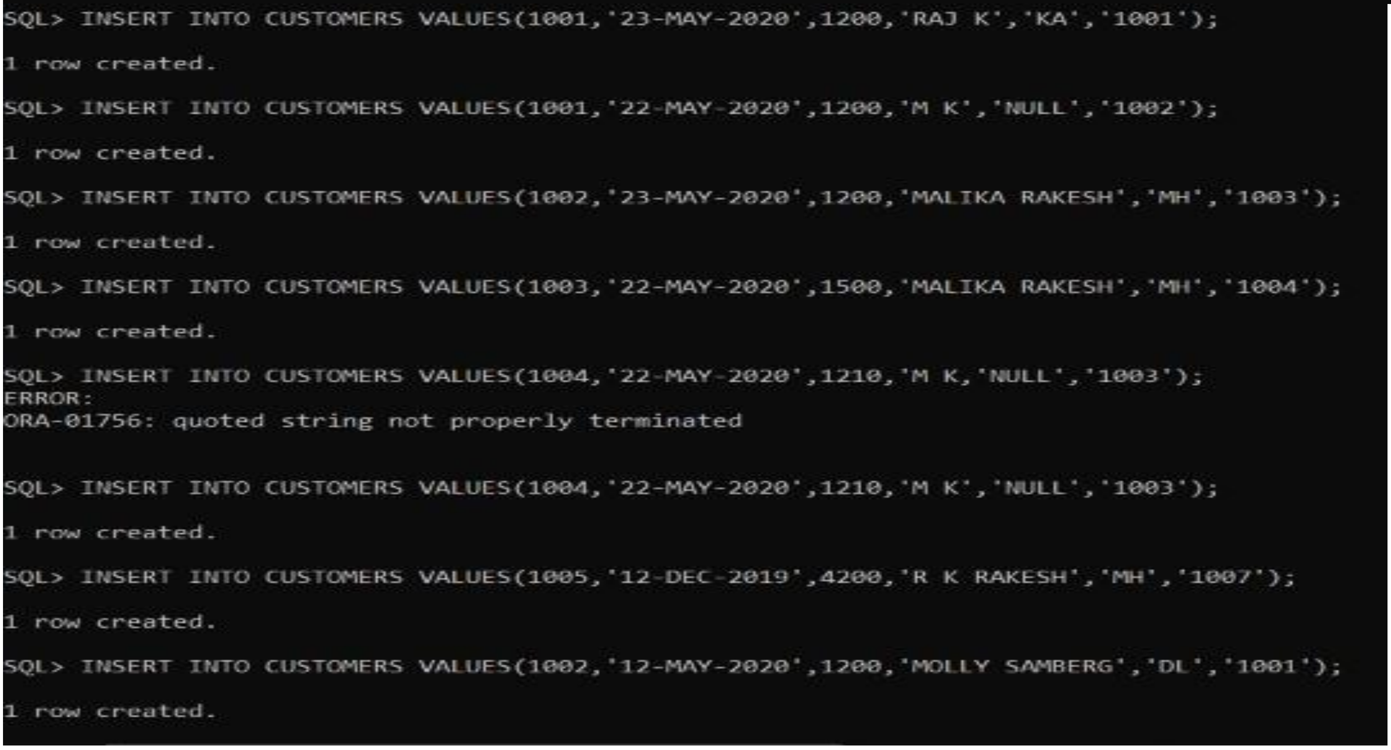
```
MALIKA RAKESH
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
```

```
ORDER_ID
--------------------------------------------------------------------------------
      1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
      1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


6 rows selected.
```

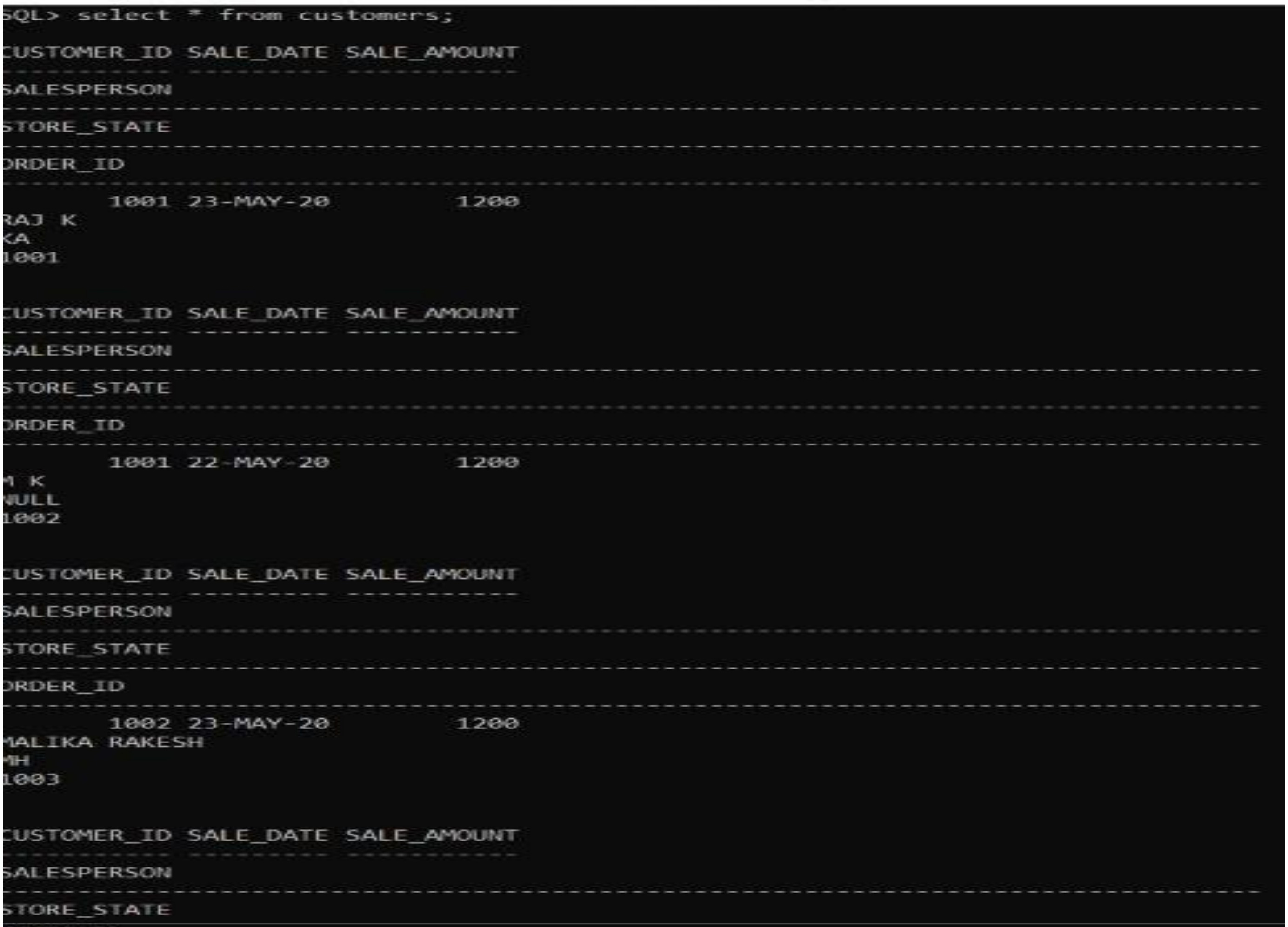
OUTPUT:



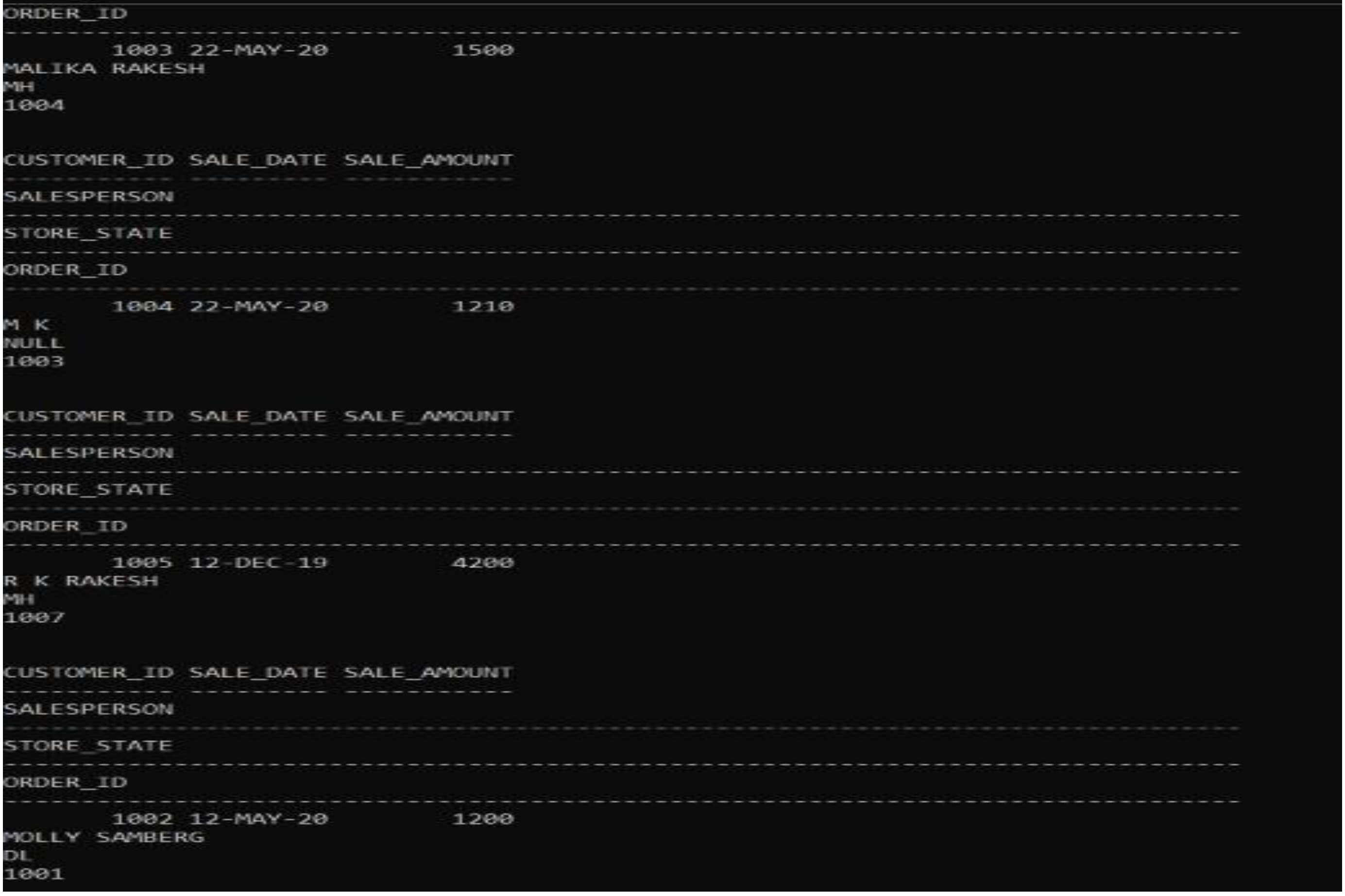
```
SQL*Plus: Release 11.2.0.4.0 Production on Mon Jan 24 11:13:20 2022

Copyright (c) 1982, 2013, Oracle.  All rights reserved.

Enter user-name: RA1911028010098/RA1911028010098@drsuresh-j1.c6hfisyr3ugy.us-east-1.rds.amazonaws.com:1521/j1

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production

SQL> CREATE TABLE CUSTOMERS(CUSTOMER_ID INT,SALE_DATE DATE,SALE_AMOUNT NUMERIC,SALESPERSON VARCHAR(255), STORE_

Table created.

SQL> desc customers;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CUSTOMER_ID                                        NUMBER(38)
 SALE_DATE                                          DATE
 SALE_AMOUNT                                        NUMBER(38)
 SALESPERSON                                        VARCHAR2(255)
 STORE_STATE                                        VARCHAR2(255)
 ORDER_ID                                           VARCHAR2(255)
```



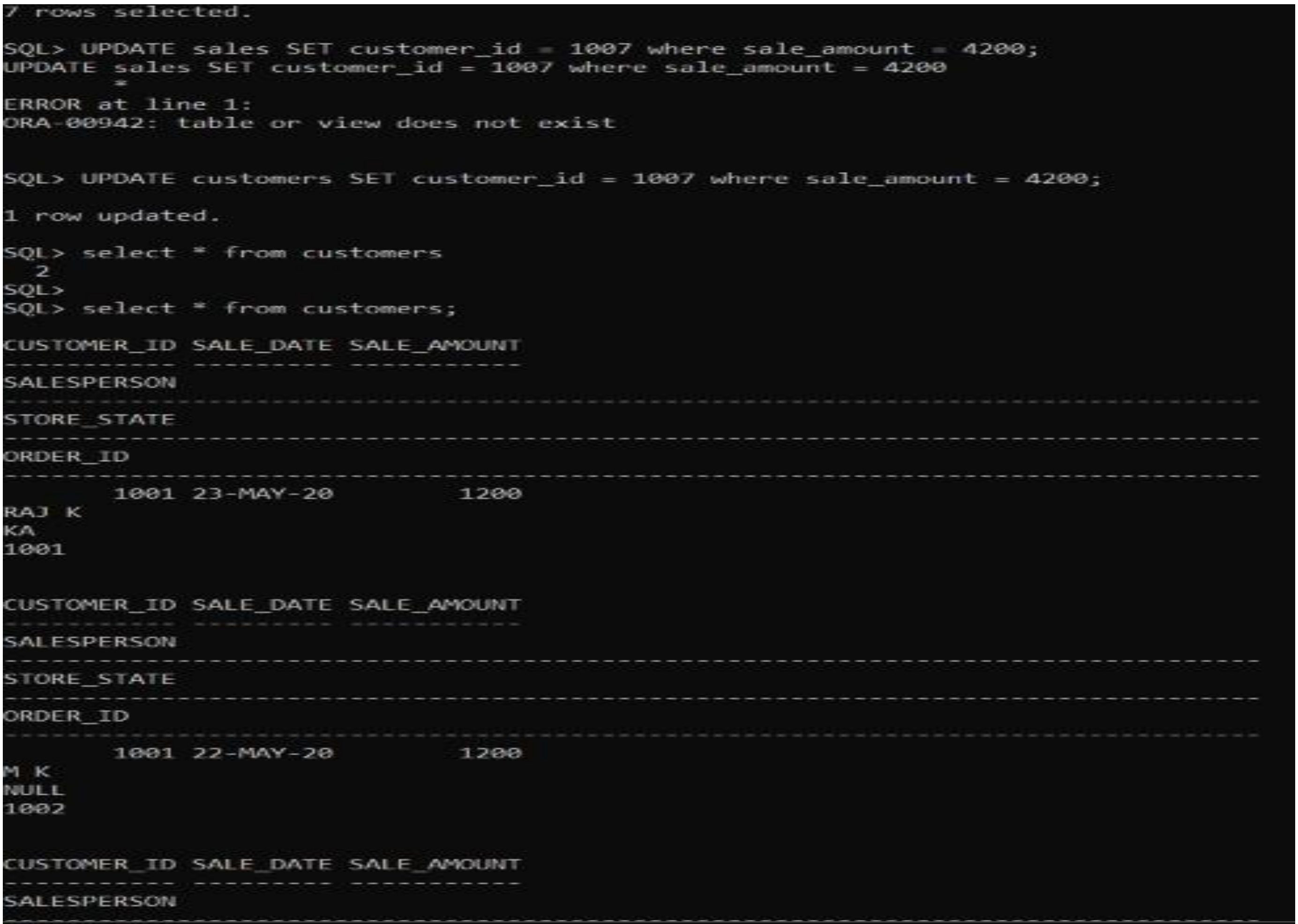
```
SQL> INSERT INTO CUSTOMERS VALUES(1001,'23-MAY-2020',1200,'RAJ K','KA','1001');

1 row created.

SQL> INSERT INTO CUSTOMERS VALUES(1001,'22-MAY-2020',1200,'M K','NULL','1002');

1 row created.

SQL> INSERT INTO CUSTOMERS VALUES(1002,'23-MAY-2020',1200,'MALIKA RAKESH','MH','1003');

1 row created.

SQL> INSERT INTO CUSTOMERS VALUES(1003,'22-MAY-2020',1500,'MALIKA RAKESH','MH','1004');

1 row created.

SQL> INSERT INTO CUSTOMERS VALUES(1004,'22-MAY-2020',1210,'M K,'NULL','1003');
ERROR:
ORA-01756: quoted string not properly terminated


SQL> INSERT INTO CUSTOMERS VALUES(1004,'22-MAY-2020',1210,'M K','NULL','1003');

1 row created.

SQL> INSERT INTO CUSTOMERS VALUES(1005,'12-DEC-2019',4200,'R K RAKESH','MH','1007');

1 row created.

SQL> INSERT INTO CUSTOMERS VALUES(1002,'12-MAY-2020',1200,'MOLLY SAMBERG','DL','1001');

1 row created.
```



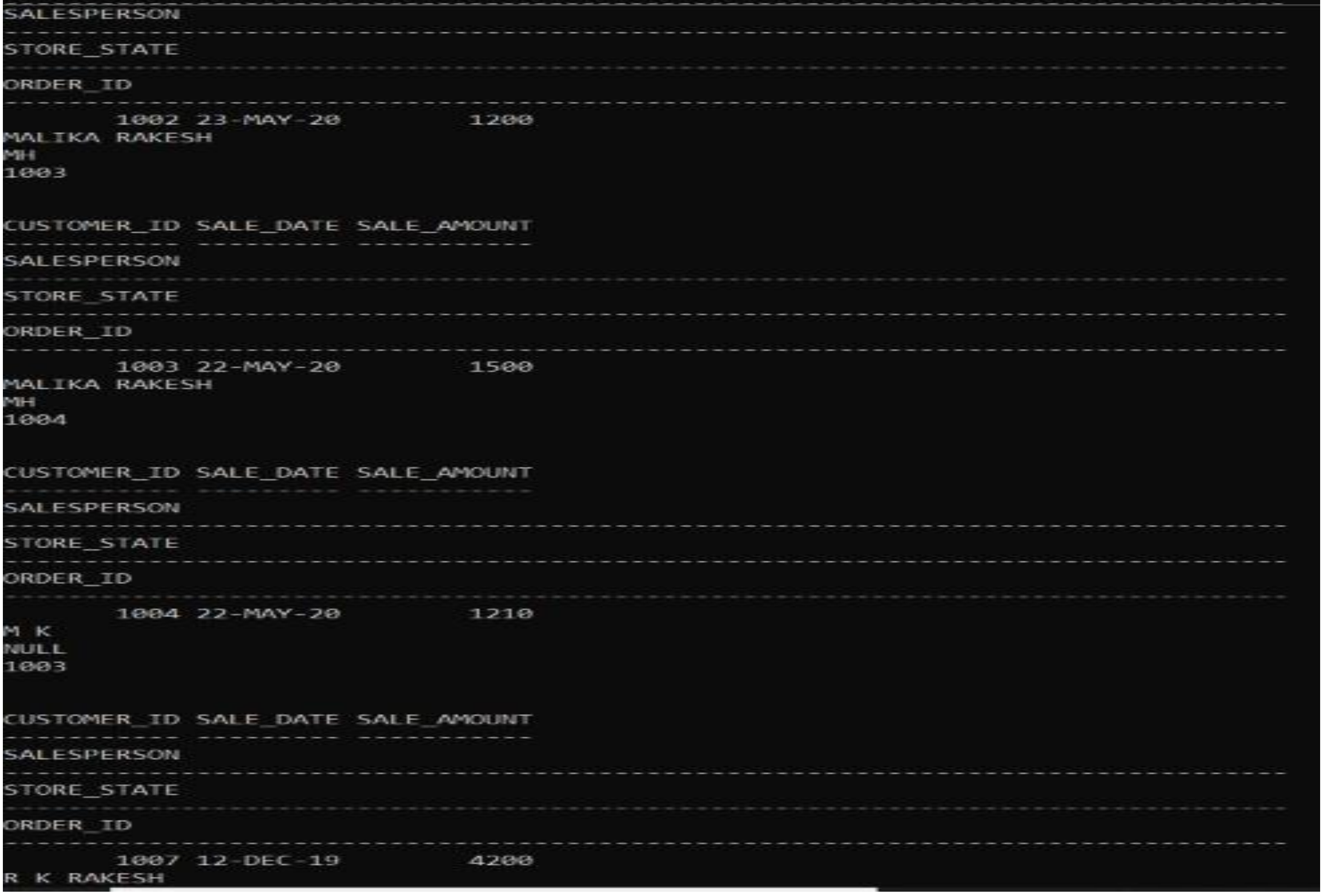
```
SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1001 23-MAY-20        1200
RAJ K
KA
1001

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1001 22-MAY-20        1200
M K
NULL
1002

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
```



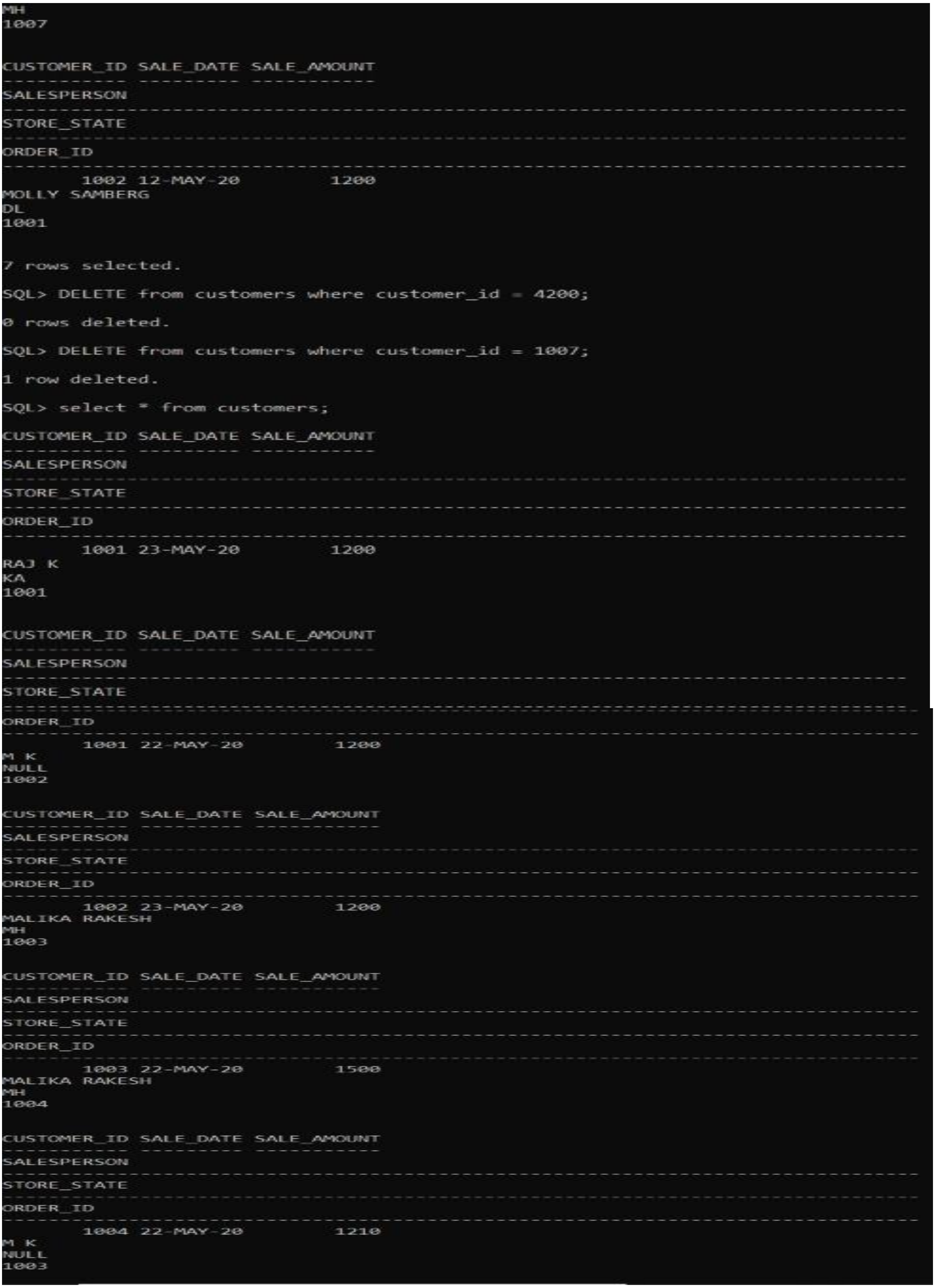
```
ORDER_ID
--------------------------------------------------------------------------------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1004 22-MAY-20        1210
M K
NULL
1003

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1005 12-DEC-19        4200
R K RAKESH
MH
1007

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001
```



```
7 rows selected.

SQL> UPDATE sales SET customer_id = 1007 where sale_amount = 4200;
UPDATE sales SET customer_id = 1007 where sale_amount = 4200
       *
ERROR at line 1:
ORA-00942: table or view does not exist


SQL> UPDATE customers SET customer_id = 1007 where sale_amount = 4200;

1 row updated.

SQL> select * from customers
  2
SQL>
SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1001 23-MAY-20        1200
RAJ K
KA
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1001 22-MAY-20        1200
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
```



```
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1007 12-DEC-19        4200
R K RAKESH
```



```
MH
1007

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


7 rows selected.

SQL> DELETE from customers where customer_id = 4200;

0 rows deleted.

SQL> DELETE from customers where customer_id = 1007;

1 row deleted.

SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1001 23-MAY-20        1200
RAJ K
KA
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1001 22-MAY-20        1200
M K
NULL
1002

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------------
STORE_STATE
--------------------------------------------------------------------------------
ORDER_ID
--------------------------------------------------------------------------------
       1004 22-MAY-20        1210
M K
NULL
1003
```

Result:

Thus the DML commands are used to modify or manipulate data records present in the customer database tables.

```
SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 23-MAY-20        1200
RAJ K
KA
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 22-MAY-20        1200
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
```

```
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1005 12-DEC-19        4200
R K RAKESH
MH
1007


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
```

```
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


7 rows selected.

SQL> grant select on customers to admin;

Grant succeeded.

SQL> revoke select on customers from admin;

Revoke succeeded.

SQL> commit;

Commit complete.

SQL> INSERT INTO CUSTOMERS VALUES(98,'19-MAY-
2002',1200,'DineshReddy','AP','1111');

1. row created.

SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 23-MAY-20        1200
RAJ K
KA
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
```

```
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 22-MAY-20        1200
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
```

```
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1005 12-DEC-19        4200
R K RAKESH
MH
1007


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
```

```
--------------------------------------------------------------------------
------
         98 19-MAY-02        1200
DineshReddy
AP
1111


8 rows selected.

SQL> rollback;

Rollback complete.

SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 23-MAY-20        1200
RAJ K
KA
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 22-MAY-20        1200
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
```

```
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
```

```
------
ORDER_ID
--------------------------------------------------------------------------
------
       1005 12-DEC-19        4200
R K RAKESH
MH
1007


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


7 rows selected.

SQL> INSERT INTO CUSTOMERS VALUES(98,'19-MAY-
2002',1200,'DineshReddy','AP','1001');

1. row created.

SQL> INSERT INTO CUSTOMERS VALUES(98,'19-MAY-
2002',1200,'DineshReddy','AP','1999');

1. row created.

SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 23-MAY-20        1200
RAJ K
```

```
KA
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 22-MAY-20        1200
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004
```

```
CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1005 12-DEC-19        4200
R K RAKESH
MH
1007


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
```

```
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
         98 19-MAY-02        1200
DineshReddy
AP
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
         98 19-MAY-02        1200
DineshReddy
AP
1999


9 rows selected.

SQL> savepoint sp1;

Savepoint created.

SQL> delete from customers where customer id=1007;
delete from customers where customer id=1007
                                     *
ERROR at line 1:
ORA-00920: invalid relational operator


SQL> delete from customers where customer_id=1007;

0 rows deleted.

SQL> delete from customers where customer_id=1005;

1. row deleted.

SQL> rollback to sp1;
```

```
Rollback complete.

SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 23-MAY-20        1200
RAJ K
KA
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1001 22-MAY-20        1200
M K
NULL
1002


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003
```

```
CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1003 22-MAY-20        1500
MALIKA RAKESH
MH
1004


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1005 12-DEC-19        4200
R K RAKESH
MH
1007


CUSTOMER_ID SALE_DATE SALE_AMOUNT
```

```
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
         98 19-MAY-02        1200
DineshReddy
AP
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
         98 19-MAY-02        1200
DineshReddy
AP
1999


9 rows selected.

SQL> delete from customers where customer_id=1003;
```

```
1. row deleted.

SQL> delete from customers where customer_id=1001;

2. rows deleted.

SQL> savepoint sp2;

Savepoint created.

SQL> rollback to sp2;

Rollback complete.

SQL> select * from customers;

CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 23-MAY-20        1200
MALIKA RAKESH
MH
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1004 22-MAY-20        1210
M K
NULL
1003


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
```

```
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1005 12-DEC-19        4200
R K RAKESH
MH
1007


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
       1002 12-MAY-20        1200
MOLLY SAMBERG
DL
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
------
ORDER_ID
--------------------------------------------------------------------------
------
         98 19-MAY-02        1200
DineshReddy
AP
1001


CUSTOMER_ID SALE_DATE SALE_AMOUNT
----------- --------- -----------
SALESPERSON
--------------------------------------------------------------------------
------
STORE_STATE
--------------------------------------------------------------------------
```

```
------
ORDER_ID
---------------------------------------------------------------------------
------
         98 19-MAY-02        1200
DineshReddy
AP
1999


6 rows selected.

SQL> commit;

Commit complete.

SQL> spool off
```

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

Title of Experiment

AIM : To execute commands using keys and finding constraints.

SQL Command:

```
  SQL> CREATE TABLE EMPLOYEE(EMP_ID INT NOT NULL,EMP_NAME
VARCHAR(20) ,AGE INT,DEPT_ID INT,CHECK (AGE>=18));


  Table created.


  SQL> desc employee;
   Name                                      Null?    Type
   ----------------------------------------- -------- ----------------------------
   EMP_ID                                    NOT NULL NUMBER(38)
   EMP_NAME                                           VARCHAR2(20)
   AGE                                                NUMBER(38)
   DEPT_ID                                            NUMBER(38)


  SQL> INSERT INTO EMPLOYEE VALUES(98,'DineshReddy',20,1);


  1 row created.


  SQL> INSERT INTO EMPLOYEE VALUES(19,'Dinesh',17,1);
  INSERT INTO EMPLOYEE VALUES(19,'Dinesh',17,1)
  *
  ERROR at line 1:
  ORA-02290: check constraint (SYSTEM.SYS_C006998) violated
```

```
SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT UNIQUE_NAME UNIQUE(EMP_NAME);

Table altered.

SQL> INSERT INTO EMPLOYEE VALUES(99,'DineshReddy',20,1);
INSERT INTO EMPLOYEE VALUES(99,'DineshReddy',20,1)
*
ERROR at line 1:
ORA-00001: unique constraint (SYSTEM.UNIQUE_NAME) violated


SQL> ALTER TABLE EMPLOYEE DROP CONSTRAINT UNIQUE_NAME;

Table altered.

SQL> INSERT INTO EMPLOYEE VALUES(99,'DineshReddy',20,2);

1 row created.

SQL> ALTER TABLE EMPLOYEE MODIFY EMP_NAME NOT NULL;

Table altered.

SQL> INSERT INTO EMPLOYEE VALUES(19,'',21,2);
INSERT INTO EMPLOYEE VALUES(19,'',21,2)
                                *
```

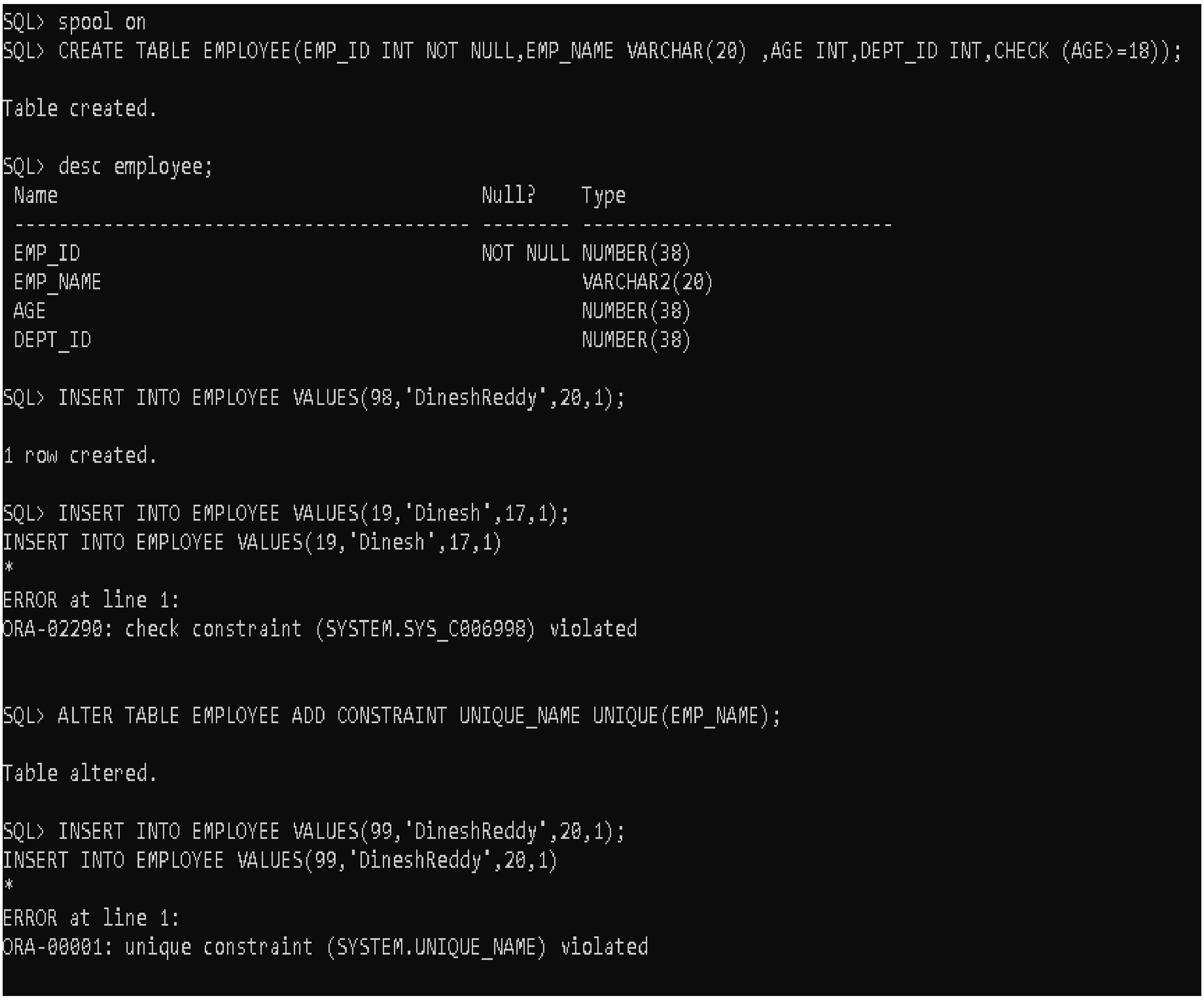
```
ERROR at line 1:
ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE"."EMP_NAME")



SQL> ALTER TABLE EMPLOYEE MODIFY EMP_NAME NULL;


Table altered.


SQL> INSERT INTO EMPLOYEE VALUES(19,",21,2);


1 row created.


SQL> CREATE TABLE DEPARTMENT(DEPT_ID INT,DEPT_NAME
VARCHAR(3),PRIMARY KEY(DEPT_ID));


Table created.


SQL> desc department;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPT_ID                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(3)


SQL> desc employee;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_ID                                    NOT NULL NUMBER(38)
 EMP_NAME                                           VARCHAR2(20)
 AGE                                                NUMBER(38)
 DEPT_ID                                   NUMBER(38)

SQL> select * from employee;

    EMP_ID EMP_NAME                  AGE    DEPT_ID
---------- ------------------- ---------- ----------
        98 DineshReddy             20          1
        99 DineshReddy             20          2
        19                     21          2

SQL> DELETE FROM EMPLOYEE WHERE DEPT_ID=2;

2 rows deleted.

SQL> INSERT INTO EMPLOYEE VALUES(99,'Dinesh',21,2);

1 row created.

SQL> select * from employee;

    EMP_ID EMP_NAME                  AGE    DEPT_ID
---------- ------------------- ---------- ----------
        98 DineshReddy             20          1
        99 Dinesh              21          2

SQL> insert all
  2  into department values(1,'CSE')
  3  into department values(2,'ECE')
  4  into department values(3,'EEE')
  5  select 1 from dual;

3 rows created.

SQL> select * from department;

   DEPT_ID DEP
---------- ---
         1 CSE
         2 ECE
         3 EEE

SQL> SELECT E.EMP_ID,E.EMP_NAME,E.AGE,D.DEPT_NAME FROM EMPLOYEE E JOIN DEPARTMENT D ON E.DEPT_ID = D.DEPT_ID;

    EMP_ID EMP_NAME                    AGE DEP
---------- -------------------- ---------- ---
        98 DineshReddy                  20 CSE
        99 Dinesh                       21 ECE

SQL> INSERT INTO EMPLOYEE VALUES(100,'D',22,3);

1 row created.

SQL>SELECT EMPLOYEE.EMP_ID,EMPLOYEE.EMP_NAME,DEPARTMENT.DEPT_NAME FROM EMPLOYEE,DEPARTMENT WHERE EMPLOYEE.DEPT_ID=DEPARTMENT.DEPT_ID;
```

```
    EMP_ID EMP_NAME             DEP
---------- -------------------- ---
        98 DineshReddy          CSE
        99 Dinesh               ECE
       100 D                    EEE

SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT PK PRIMARY KEY
(EMP_ID);

Table altered.

SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT FKEY FOREIGN KEY
(DEPT_ID) REFERENCES DEPARTMENT (DEPT_ID);

Table altered.

SQL> select * from employee;

    EMP_ID EMP_NAME                    AGE    DEPT_ID
---------- -------------------- ---------- ----------
        98 DineshReddy                  20          1
        99 Dinesh                       21          2
       100 D                            22          3

SQL> select * from department;

   DEPT_ID DEP
---------- ---
```

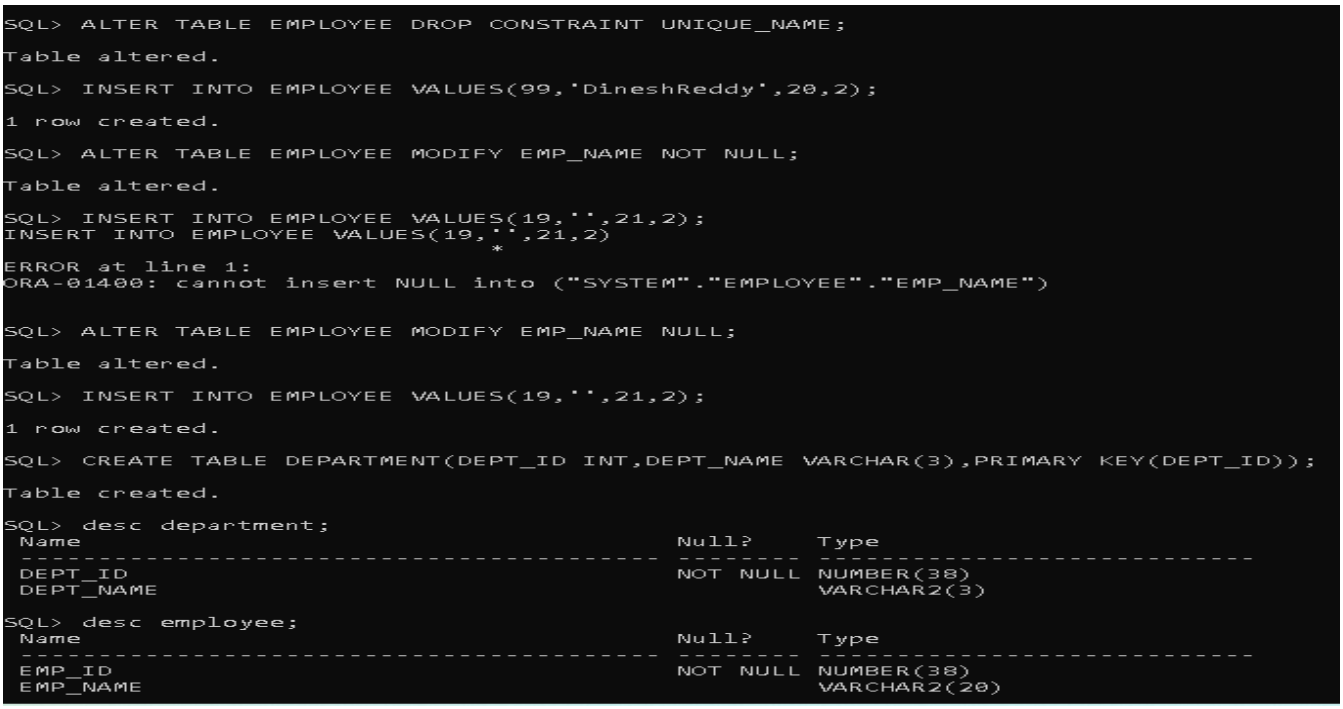
```
         1 CSE

         2 ECE

         3 EEE


SQL> INSERT INTO EMPLOYEE VALUES(101,'Venkata',19,4);

INSERT INTO EMPLOYEE VALUES(101,'Venkata',19,4)

*

ERROR at line 1:

ORA-02291: integrity constraint (SYSTEM.FKEY) violated - parent key not found




SQL> INSERT INTO DEPARTMENT VALUES(4,'Mech');

INSERT INTO DEPARTMENT VALUES(4,'Mech')

                              *

ERROR at line 1:

ORA-12899: value too large for column "SYSTEM"."DEPARTMENT"."DEPT_NAME"

(actual: 4, maximum: 3)




SQL> INSERT INTO DEPARTMENT VALUES(4,'Mec');


1 row created.


SQL> INSERT INTO EMPLOYEE VALUES(101,'Venkata',19,4);


1 row created.


SQL> DELETE FROM DEPARTMENT WHERE DEPT_ID=4;
```

```
DELETE FROM DEPARTMENT WHERE DEPT_ID=4
*
ERROR at line 1:
ORA-02292: integrity constraint (SYSTEM.FKEY) violated - child record found



SQL> ALTER TABLE EMPLOYEE DROP CONSTRAINT FKEY;


Table altered.


SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT FKEY FOREIGN KEY
(DEPT_ID) REFERENCES DEPARTMENT (DEPT_ID) ON DELETE CASCADE;


Table altered.


SQL> select * from employee;


    EMP_ID EMP_NAME                    AGE    DEPT_ID
---------- -------------------- ---------- ----------
        98 DineshReddy                  20          1
        99 Dinesh                       21          2
       100 D                            22          3
       101 Venkata                      19          4


SQL> select * from department;


   DEPT_ID DEP
---------- ---
         1 CSE
         2 ECE

         3 EEE

         4 Mec


SQL> DELETE FROM DEPARTMENT WHERE DEPT_ID=3 OR DEPT_ID=4;


2 rows deleted.


SQL> select * from employee;


    EMP_ID EMP_NAME                    AGE    DEPT_ID

---------- -------------------- ---------- ----------

        98 DineshReddy                  20          1

        99 Dinesh                       21          2


SQL> select * from department;


   DEPT_ID DEP

---------- ---

         1 CSE

         2 ECE


SQL> spool off;
```

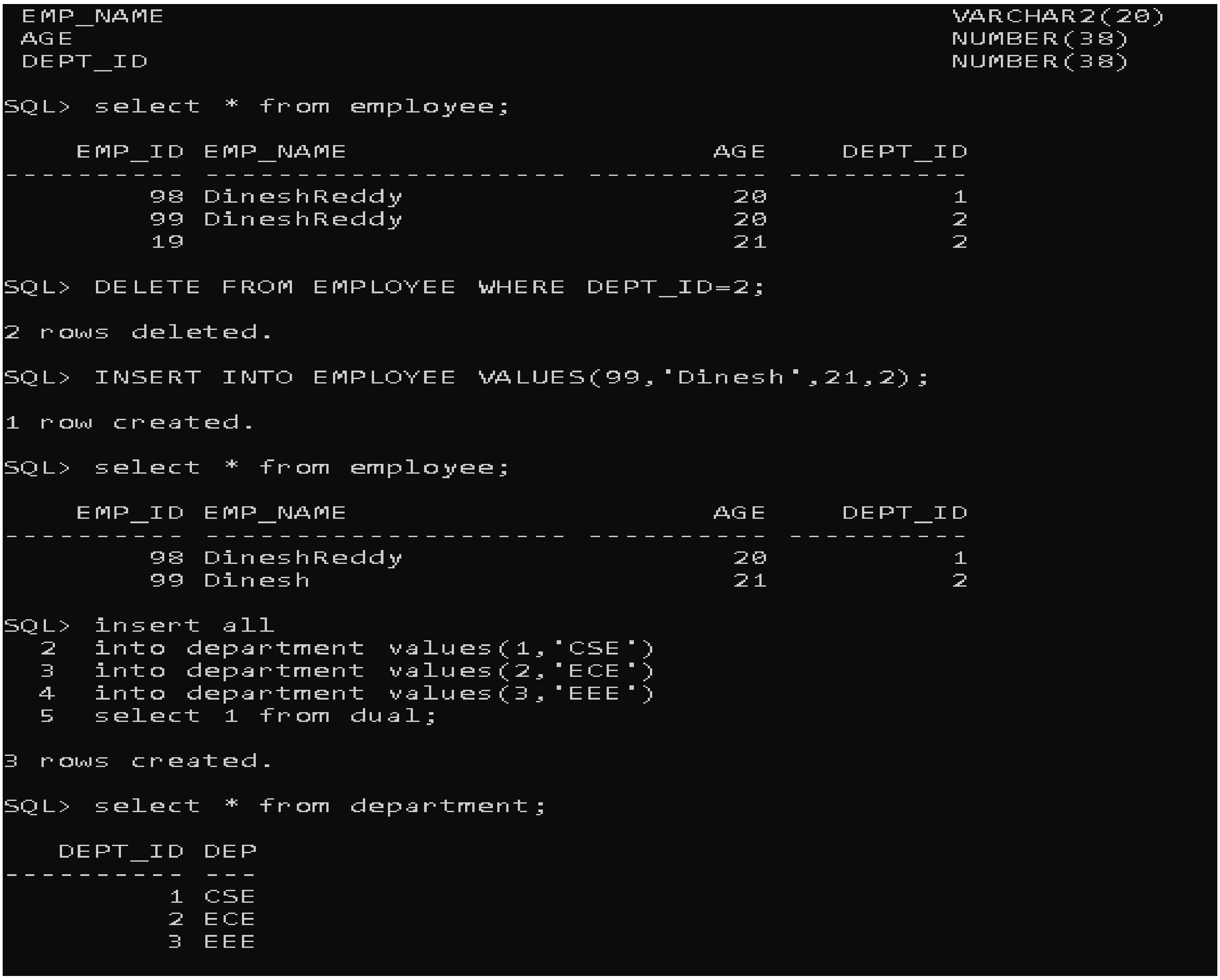
Output:-



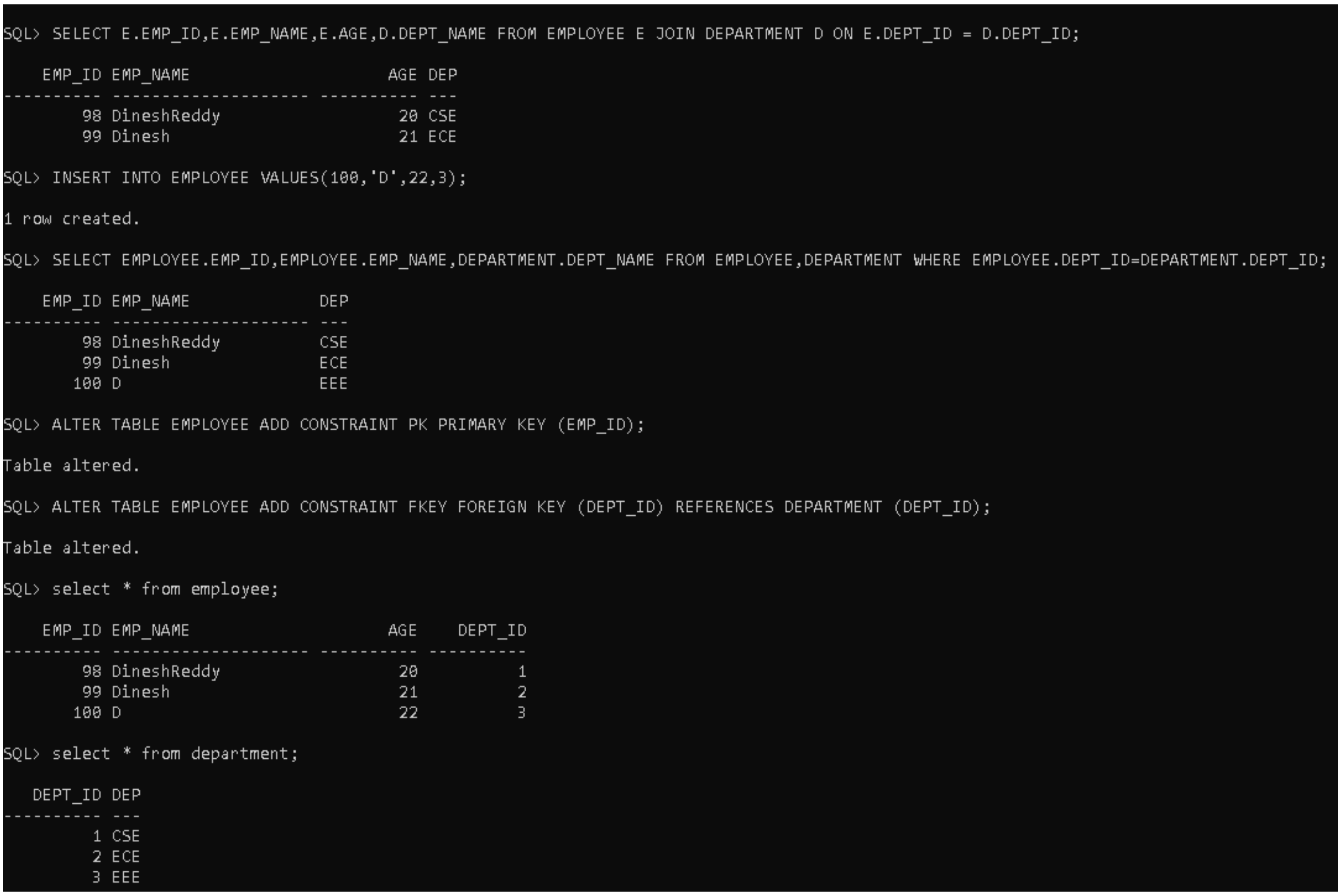
```
SQL> spool on
SQL> CREATE TABLE EMPLOYEE(EMP_ID INT NOT NULL,EMP_NAME VARCHAR(20) ,AGE INT,DEPT_ID INT,CHECK (AGE>=18));

Table created.

SQL> desc employee;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_ID                                    NOT NULL NUMBER(38)
 EMP_NAME                                           VARCHAR2(20)
 AGE                                                NUMBER(38)
 DEPT_ID                                            NUMBER(38)

SQL> INSERT INTO EMPLOYEE VALUES(98,'DineshReddy',20,1);

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES(19,'Dinesh',17,1);
INSERT INTO EMPLOYEE VALUES(19,'Dinesh',17,1)
*
ERROR at line 1:
ORA-02290: check constraint (SYSTEM.SYS_C006998) violated


SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT UNIQUE_NAME UNIQUE(EMP_NAME);

Table altered.

SQL> INSERT INTO EMPLOYEE VALUES(99,'DineshReddy',20,1);
INSERT INTO EMPLOYEE VALUES(99,'DineshReddy',20,1)
*
ERROR at line 1:
ORA-00001: unique constraint (SYSTEM.UNIQUE_NAME) violated
```



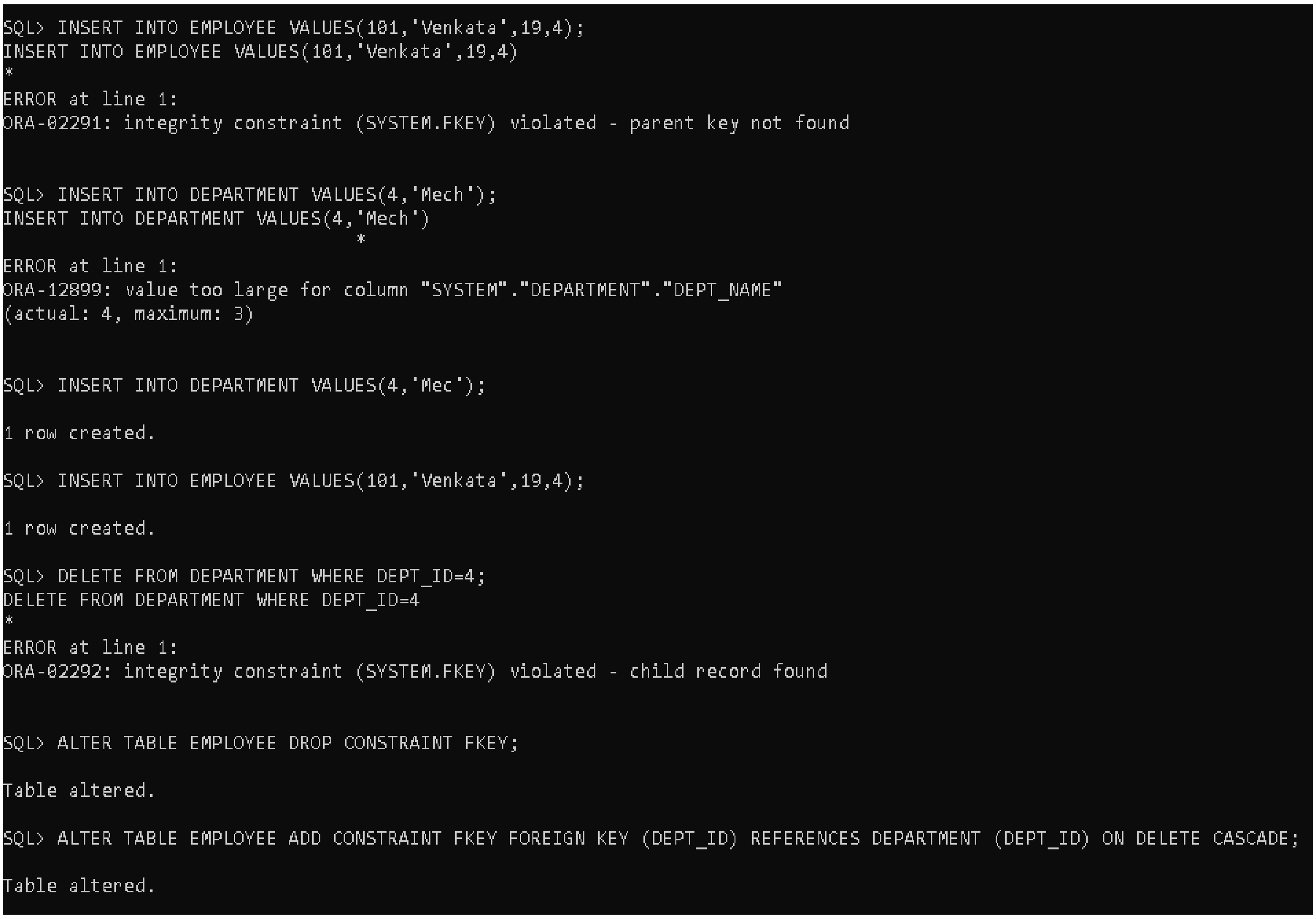
```
SQL> ALTER TABLE EMPLOYEE DROP CONSTRAINT UNIQUE_NAME;

Table altered.

SQL> INSERT INTO EMPLOYEE VALUES(99,'DineshReddy',20,2);

1 row created.

SQL> ALTER TABLE EMPLOYEE MODIFY EMP_NAME NOT NULL;

Table altered.

SQL> INSERT INTO EMPLOYEE VALUES(19,'',21,2);
INSERT INTO EMPLOYEE VALUES(19,'',21,2)
                               *
ERROR at line 1:
ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE"."EMP_NAME")


SQL> ALTER TABLE EMPLOYEE MODIFY EMP_NAME NULL;

Table altered.

SQL> INSERT INTO EMPLOYEE VALUES(19,'',21,2);

1 row created.

SQL> CREATE TABLE DEPARTMENT(DEPT_ID INT,DEPT_NAME VARCHAR(3),PRIMARY KEY(DEPT_ID));

Table created.

SQL> desc department;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPT_ID                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(3)

SQL> desc employee;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_ID                                    NOT NULL NUMBER(38)
 EMP_NAME                                           VARCHAR2(20)
```



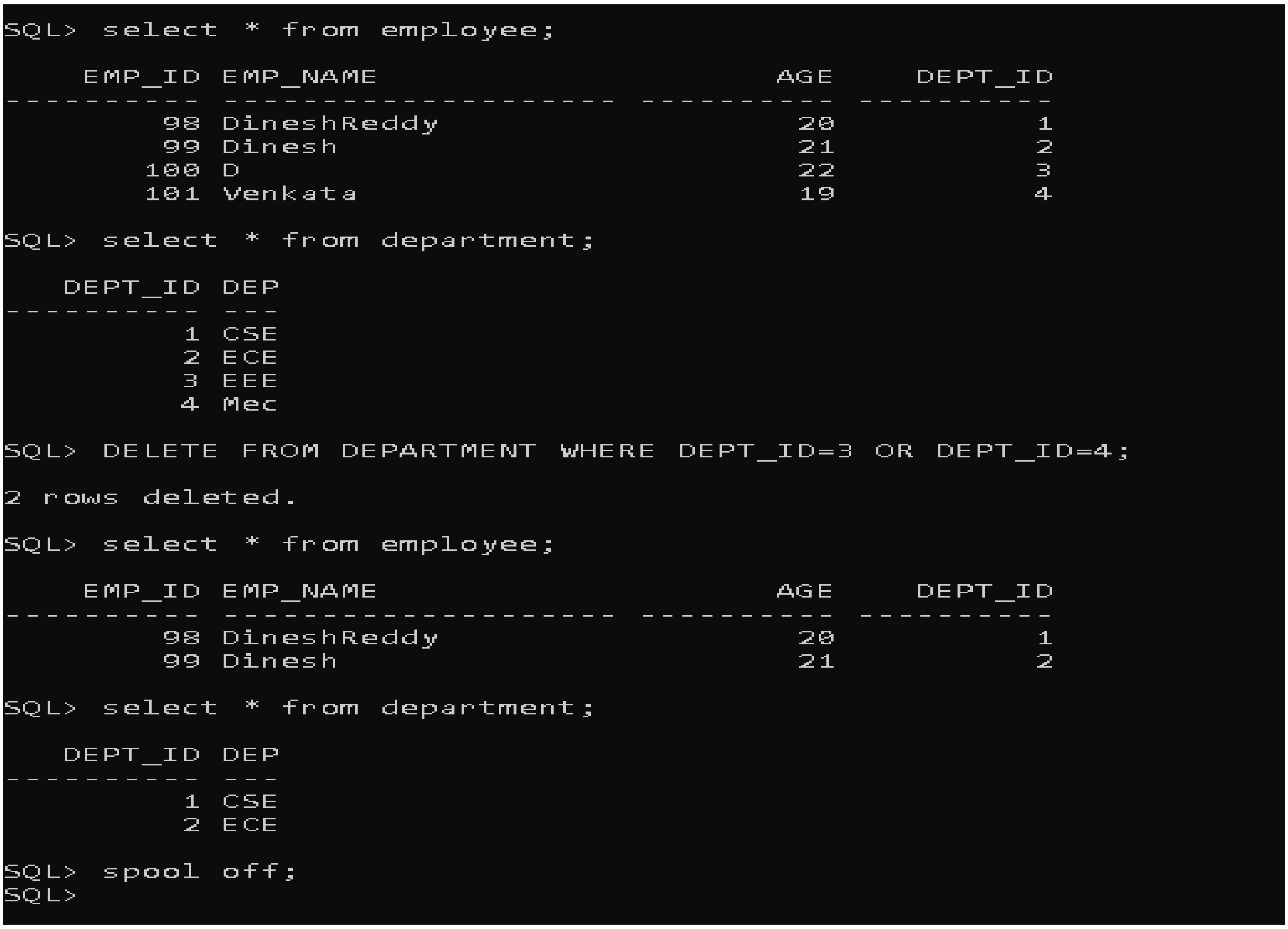
```
 EMP_NAME                                           VARCHAR2(20)
 AGE                                                NUMBER(38)
 DEPT_ID                                            NUMBER(38)

SQL> select * from employee;

    EMP_ID EMP_NAME                    AGE    DEPT_ID
---------- -------------------- ---------- ----------
        98 DineshReddy                  20          1
        99 DineshReddy                  20          2
        19                              21          2

SQL> DELETE FROM EMPLOYEE WHERE DEPT_ID=2;

2 rows deleted.

SQL> INSERT INTO EMPLOYEE VALUES(99,'Dinesh',21,2);

1 row created.

SQL> select * from employee;

    EMP_ID EMP_NAME                    AGE    DEPT_ID
---------- -------------------- ---------- ----------
        98 DineshReddy                  20          1
        99 Dinesh                       21          2

SQL> insert all
  2  into department values(1,'CSE')
  3  into department values(2,'ECE')
  4  into department values(3,'EEE')
  5  select 1 from dual;

3 rows created.

SQL> select * from department;

   DEPT_ID DEP
---------- ---
         1 CSE
         2 ECE
         3 EEE
```



```
SQL> SELECT E.EMP_ID,E.EMP_NAME,E.AGE,D.DEPT_NAME FROM EMPLOYEE E JOIN DEPARTMENT D ON E.DEPT_ID = D.DEPT_ID;

    EMP_ID EMP_NAME                    AGE DEP
---------- -------------------- ---------- ---
        98 DineshReddy                  20 CSE
        99 Dinesh                       21 ECE

SQL> INSERT INTO EMPLOYEE VALUES(100,'D',22,3);

1 row created.

SQL> SELECT EMPLOYEE.EMP_ID,EMPLOYEE.EMP_NAME,DEPARTMENT.DEPT_NAME FROM EMPLOYEE,DEPARTMENT WHERE EMPLOYEE.DEPT_ID=DEPARTMENT.DEPT_ID;

    EMP_ID EMP_NAME             DEP
---------- -------------------- ---
        98 DineshReddy          CSE
        99 Dinesh               ECE
       100 D                    EEE

SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT PK PRIMARY KEY (EMP_ID);

Table altered.

SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT FKEY FOREIGN KEY (DEPT_ID) REFERENCES DEPARTMENT (DEPT_ID);

Table altered.

SQL> select * from employee;

    EMP_ID EMP_NAME                    AGE    DEPT_ID
---------- -------------------- ---------- ----------
        98 DineshReddy                  20          1
        99 Dinesh                       21          2
       100 D                            22          3

SQL> select * from department;

   DEPT_ID DEP
---------- ---
         1 CSE
         2 ECE
         3 EEE
```



```
SQL> INSERT INTO EMPLOYEE VALUES(101,'Venkata',19,4);
INSERT INTO EMPLOYEE VALUES(101,'Venkata',19,4)
*
ERROR at line 1:
ORA-02291: integrity constraint (SYSTEM.FKEY) violated - parent key not found


SQL> INSERT INTO DEPARTMENT VALUES(4,'Mech');
INSERT INTO DEPARTMENT VALUES(4,'Mech')
                                *
ERROR at line 1:
ORA-12899: value too large for column "SYSTEM"."DEPARTMENT"."DEPT_NAME"
(actual: 4, maximum: 3)


SQL> INSERT INTO DEPARTMENT VALUES(4,'Mec');

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES(101,'Venkata',19,4);

1 row created.

SQL> DELETE FROM DEPARTMENT WHERE DEPT_ID=4;
DELETE FROM DEPARTMENT WHERE DEPT_ID=4
*
ERROR at line 1:
ORA-02292: integrity constraint (SYSTEM.FKEY) violated - child record found


SQL> ALTER TABLE EMPLOYEE DROP CONSTRAINT FKEY;

Table altered.

SQL> ALTER TABLE EMPLOYEE ADD CONSTRAINT FKEY FOREIGN KEY (DEPT_ID) REFERENCES DEPARTMENT (DEPT_ID) ON DELETE CASCADE;

Table altered.
```



```
SQL> select * from employee;

    EMP_ID EMP_NAME                             AGE    DEPT_ID
---------- -------------------- ---------- ----------
        98 DineshReddy                           20          1
        99 Dinesh                                21          2
       100 D                                     22          3
       101 Venkata                               19          4

SQL> select * from department;

   DEPT_ID DEP
---------- ---
         1 CSE
         2 ECE
         3 EEE
         4 Mec

SQL> DELETE FROM DEPARTMENT WHERE DEPT_ID=3 OR DEPT_ID=4;

2 rows deleted.

SQL> select * from employee;

    EMP_ID EMP_NAME                             AGE    DEPT_ID
---------- -------------------- ---------- ----------
        98 DineshReddy                           20          1
        99 Dinesh                                21          2

SQL> select * from department;

   DEPT_ID DEP
---------- ---
         1 CSE
         2 ECE

SQL> spool off;
SQL>
```

Result:-

Successfully executed the commands using keys and shown the constraints.

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

Title of Experiment

AIM : To execute commands using the basic select statements.

SQL Command:

```
 SQL> CREATE TABLE MANAGERS(EMP_NO INT,ENAME VARCHAR(15),JOB VARCHAR(15),MGR INT,HIREDATE DATE,SAL INT,COMM INT,DEPTNO INT,PRIMARY KEY (EMP_NO));



 SQL> insert into managers values(7369,'SMITH','CLERK',7902,'17-DEC-80',800,'',20);

 1 row created.

 SQL> insert into managers values(7499,'ALLEN','SALESMAN',7698,'20-FEB-81',1600,300,30);

 1 row created.

 SQL> insert into managers values(7521,'WARD','SALESMAN',7698,'22-FEB-81',1250,500,30);

 1 row created.

 SQL> insert into managers values(7566 , 'JONES' ,'MANAGER' ,7839 ,'02-APR-81' , 2975 ,'' ,20 );

 1 row created.
```

```
SQL> insert into managers values(7654 , 'MARTIN' ,'SALESMAN' ,7698 ,
'28-SEP-81' , 1250 ,1400 ,30 );

1 row created.

SQL> insert into managers values(7698,'BLAKE','MANAGER',7839,'01-MAY-
81',2580,'',30);

1 row created.

SQL> insert into managers values(7782 , 'CLARK' ,'MANAGER' ,7839 ,
'09-JUN-81' , 2450 ,'' ,10 );

1 row created.

SQL> insert into managers values(7788 , 'SCOTT' ,'ANALYST' ,7566 ,
'19-APR-87' , 3000 ,'' ,20 );

1 row created.

SQL> insert into managers values(7839,'KING','PRESIDENT','','17-NOV-
81',5000,'',10);

1 row created.

SQL> insert into managers values(7844,'TURNER','SALESMAN','7698','08-
SEP-81',1500,'0',30);

1 row created.

SQL> insert into managers values(7876,'ADMAS','CLERK',7788,'23-MAY-
87',1100,'',20);

1 row created.
```

```
 SQL> insert into managers values(7900,'JAMES','CLERK',7698,'03-DEC-
81',950,'',30);

 1 row created.

 SQL> insert into managers values(7902 , 'FORD' ,'ANALYST' ,7566 ,
'03-DEC-81' , 3000 ,'' ,20);

 1 row created.

 SQL> insert into managers values(7934 , 'MILLER' ,'CLERK' ,7782 ,
'23-JAN-82' , 1300 ,'' ,10 );

 1 row created.

 SQL> desc managers;
  Name                                      Null?    Type
  ----------------------------------------- -------- -----------------
-----------
  EMP_NO                                    NOT NULL NUMBER(38)
  ENAME                                              VARCHAR2(15)
  JOB                                                VARCHAR2(15)
  MGR                                                NUMBER(38)
  HIREDATE                                           DATE
  SAL                                                NUMBER(38)
  COMM                                               NUMBER(38)
  DEPTNO                                             NUMBER(38)

 SQL> select * from managers;

     EMP_NO ENAME           JOB                        MGR HIREDATE
SAL
```

```
 ---------- --------------- --------------- ---------- --------- -----
-----

      COMM     DEPTNO

 ---------- ----------

      7369 SMITH              CLERK                     7902 17-DEC-80
800

                    20


      7499 ALLEN              SALESMAN                  7698 20-FEB-81
1600

       300         30


      7521 WARD               SALESMAN                  7698 22-FEB-81
1250

       500         30



     EMP_NO ENAME              JOB                         MGR HIREDATE
SAL

 ---------- --------------- --------------- ---------- --------- -----
-----

      COMM     DEPTNO

 ---------- ----------

      7566 JONES              MANAGER                   7839 02-APR-81
2975

                    20


      7654 MARTIN             SALESMAN                  7698 28-SEP-81
1250

      1400         30


      7698 BLAKE              MANAGER                   7839 01-MAY-81
2580

                    30
     EMP_NO ENAME              JOB                          MGR HIREDATE
SAL
 ---------- --------------- --------------- ---------- --------- -----
-----
       COMM     DEPTNO
 ---------- ----------
       7782 CLARK              MANAGER                   7839 09-JUN-81
2450
                    10


       7788 SCOTT              ANALYST                   7566 19-APR-87
3000
                    20


       7839 KING               PRESIDENT                      17-NOV-81
5000
                    10



     EMP_NO ENAME              JOB                          MGR HIREDATE
SAL
 ---------- --------------- --------------- ---------- --------- -----
-----
       COMM     DEPTNO
 ---------- ----------
       7844 TURNER             SALESMAN                  7698 08-SEP-81
1500
          0         30


       7876 ADMAS              CLERK                     7788 23-MAY-87
1100
                    20
```

```
      7900 JAMES          CLERK                    7698 03-DEC-81
950
                  30


    EMP_NO ENAME          JOB                       MGR HIREDATE
SAL
 ---------- -------------- -------------- ---------- --------- -----
-----
      COMM     DEPTNO
 ---------- ----------
      7902 FORD           ANALYST                  7566 03-DEC-81
3000
                  20


      7934 MILLER         CLERK                    7782 23-JAN-82
1300
                  10



 14 rows selected.


 SQL> UPDATE MANAGERS SET SAL=((SAL*0.1)+SAL);


 14 rows updated.


 SQL> select * from managers;


    EMP_NO ENAME          JOB                       MGR HIREDATE
SAL
 ---------- -------------- -------------- ---------- --------- -----
-----
      COMM     DEPTNO
 ---------- ----------

       7369 SMITH             CLERK                      7902 17-DEC-80
880

                    20


       7499 ALLEN             SALESMAN                   7698 20-FEB-81
1760

        300         30


       7521 WARD              SALESMAN                   7698 22-FEB-81
1375

        500         30



     EMP_NO ENAME             JOB                         MGR HIREDATE
SAL

 ---------- --------------- --------------- ---------- --------- -----
-----

       COMM     DEPTNO

 ---------- ----------

       7566 JONES             MANAGER                    7839 02-APR-81
3273

                    20


       7654 MARTIN            SALESMAN                   7698 28-SEP-81
1375

       1400         30


       7698 BLAKE             MANAGER                    7839 01-MAY-81
2838

                    30
```

```
    EMP_NO ENAME              JOB                        MGR HIREDATE
SAL
 ---------- --------------- --------------- ---------- --------- -----
-----
      COMM     DEPTNO
 ---------- ----------
      7782 CLARK              MANAGER                   7839 09-JUN-81
2695
                   10

      7788 SCOTT              ANALYST                   7566 19-APR-87
3300
                   20

      7839 KING               PRESIDENT                      17-NOV-81
5500
                   10


    EMP_NO ENAME              JOB                        MGR HIREDATE
SAL
 ---------- --------------- --------------- ---------- --------- -----
-----
      COMM     DEPTNO
 ---------- ----------
      7844 TURNER             SALESMAN                  7698 08-SEP-81
1650
         0         30

      7876 ADMAS              CLERK                     7788 23-MAY-87
1210
                   20
```

```
       7900 JAMES           CLERK                 7698 03-DEC-81
1045
                    30


     EMP_NO ENAME           JOB                    MGR HIREDATE
SAL
 ---------- --------------- --------------- ---------- --------- -----
-----
       COMM     DEPTNO
 ---------- ----------
       7902 FORD            ANALYST               7566 03-DEC-81
3300
                    20

       7934 MILLER          CLERK                 7782 23-JAN-82
1430
                    10


 14 rows selected.

 SQL> delete from managers where SAL < 2750;

 9 rows deleted.

 SQL> select * from managers;

     EMP_NO ENAME           JOB                    MGR HIREDATE
SAL
 ---------- --------------- --------------- ---------- --------- -----
-----
       COMM     DEPTNO
 ---------- ----------
```

```
       7566 JONES          MANAGER                    7839 02-APR-81
3273

                    20


       7698 BLAKE          MANAGER                    7839 01-MAY-81
2838

                    30


       7788 SCOTT          ANALYST                    7566 19-APR-87
3300

                    20



     EMP_NO ENAME          JOB                          MGR HIREDATE
SAL

 ---------- --------------- --------------- ---------- --------- -----
-----

       COMM     DEPTNO

 ---------- ----------

       7839 KING           PRESIDENT                       17-NOV-81
5500

                    10


       7902 FORD           ANALYST                    7566 03-DEC-81
3300

                    20



 SQL> insert into managers values(7369,'SMITH','CLERK',7902,'17-DEC-
80',800,'',20);


 1 row created.
```

```
SQL> insert into managers values(7499,'ALLEN','SALESMAN',7698,'20-
FEB-81',1600,300,30);

1 row created.

SQL> insert into managers values(7521,'WARD','SALESMAN',7698,'22-FEB-
81',1250,500,30);

1 row created.

SQL> insert into managers values(7654 , 'MARTIN' ,'SALESMAN' ,7698 ,
'28-SEP-81' , 1250 ,1400 ,30 );

1 row created.

SQL> insert into managers values(7782 , 'CLARK' ,'MANAGER' ,7839 ,
'09-JUN-81' , 2450 ,'' ,10 );

1 row created.

SQL> insert into managers values(7844,'TURNER','SALESMAN','7698','08-
SEP-81',1500,'0',30);

1 row created.

SQL> insert into managers values(7876,'ADMAS','CLERK',7788,'23-MAY-
87',1100,'',20);

1 row created.

SQL> insert into managers values(7900,'JAMES','CLERK',7698,'03-DEC-
81',950,'',30);

1 row created.
```

```
 SQL> insert into managers values(7934 , 'MILLER' ,'CLERK' ,7782 ,
'23-JAN-82' , 1300 ,'' ,10 );


 1 row created.


 SQL> select * from managers;


     EMP_NO ENAME           JOB                              MGR HIREDATE
SAL

 ---------- --------------- --------------- ---------- --------- -----
-----

       COMM     DEPTNO

 ---------- ----------

       7566 JONES           MANAGER                         7839 02-APR-81
3273

                    20


       7698 BLAKE           MANAGER                         7839 01-MAY-81
2838

                    30


       7788 SCOTT           ANALYST                         7566 19-APR-87
3300

                    20



     EMP_NO ENAME           JOB                              MGR HIREDATE
SAL

 ---------- --------------- --------------- ---------- --------- -----
-----

       COMM     DEPTNO

 ---------- ----------
```

```
       7839 KING            PRESIDENT                         17-NOV-81
5500
                    10

       7902 FORD            ANALYST               7566 03-DEC-81
3300
                    20

       7369 SMITH           CLERK                 7902 17-DEC-80
800
                    20


     EMP_NO ENAME           JOB                    MGR HIREDATE
SAL
 ---------- --------------- --------------- ---------- --------- -----
-----
       COMM     DEPTNO
 ---------- ----------
       7499 ALLEN           SALESMAN              7698 20-FEB-81
1600
        300         30

       7521 WARD            SALESMAN              7698 22-FEB-81
1250
        500         30

       7654 MARTIN          SALESMAN              7698 28-SEP-81
1250
       1400         30


     EMP_NO ENAME           JOB                    MGR HIREDATE
SAL
```

```
 ---------- --------------- --------------- ---------- --------- -----
-----

      COMM     DEPTNO

 ---------- ----------

       7782 CLARK             MANAGER                   7839 09-JUN-81
2450

                    10


       7844 TURNER            SALESMAN                  7698 08-SEP-81
1500

          0         30


       7876 ADMAS             CLERK                     7788 23-MAY-87
1100

                    20



     EMP_NO ENAME             JOB                        MGR HIREDATE
SAL

 ---------- --------------- --------------- ---------- --------- -----
-----

      COMM     DEPTNO

 ---------- ----------

       7900 JAMES             CLERK                     7698 03-DEC-81
950

                    30


       7934 MILLER            CLERK                     7782 23-JAN-82
1300

                    10



 14 rows selected.
```

```
SQL> SELECT ENAME AS NAME,SAL*12 AS ANNUALSALARY FROM MANAGERS;

NAME            ANNUALSALARY
--------------- ------------
JONES                  39276
BLAKE                  34056
SCOTT                  39600
KING                   66000
FORD                   39600
SMITH                   9600
ALLEN                  19200
WARD                   15000
MARTIN                 15000
CLARK                  29400
TURNER                 18000

NAME            ANNUALSALARY
--------------- ------------
ADMAS                  13200
JAMES                  11400
MILLER                 15600

14 rows selected.

SQL> SELECT CONCAT(ENAME,JOB) AS CONCATENATEDSTRING FROM MANAGERS;

CONCATENATEDSTRING
------------------------------
JONESMANAGER
BLAKEMANAGER
SCOTTANALYST
KINGPRESIDENT
```

```
FORDANALYST
SMITHCLERK
ALLENSALESMAN
WARDSALESMAN
MARTINSALESMAN
CLARKMANAGER
TURNERSALESMAN

CONCATENATEDSTRING
------------------------------
ADMASCLERK
JAMESCLERK
MILLERCLERK

14 rows selected.

SQL> SELECT ENAME FROM MANAGERS WHERE JOB='CLERK';

ENAME
---------------
SMITH
ADMAS
JAMES
MILLER

SQL> SELECT ENAME FROM MANAGERS WHERE HIREDATE > '30-SEP-81';

ENAME
---------------
SCOTT
KING
FORD
```

```
ADMAS

JAMES

MILLER


6 rows selected.


SQL>    SELECT    ENAME    FROM    MANAGERS    WHERE    EMP_NO    IN
(7369,7839,7934,7788);


ENAME

---------------

SMITH

SCOTT

KING

MILLER


SQL> SELECT ENAME FROM MANAGERS WHERE JOB NOT LIKE 'MANAGER';


ENAME

---------------

SCOTT

KING

FORD

SMITH

ALLEN

WARD

MARTIN

TURNER

ADMAS

JAMES

MILLER
```

```
 11 rows selected.

 SQL> SELECT ENAME FROM MANAGERS WHERE DEPTNO NOT IN (30,40,10);

 ENAME
 ---------------
 JONES
 SCOTT
 FORD
 SMITH
 ADMAS

 SQL> SELECT ENAME FROM MANAGERS WHERE HIREDATE BETWEEN '30-JUN-81'
AND '31-DEC-81';

 ENAME
 ---------------
 KING
 FORD
 MARTIN
 TURNER
 JAMES

 SQL> SELECT DISTINCT(JOB) AS DESIGNATIONS FROM MANAGERS;

 DESIGNATIONS
 ---------------
 CLERK
 SALESMAN
 PRESIDENT
 MANAGER
 ANALYST
```

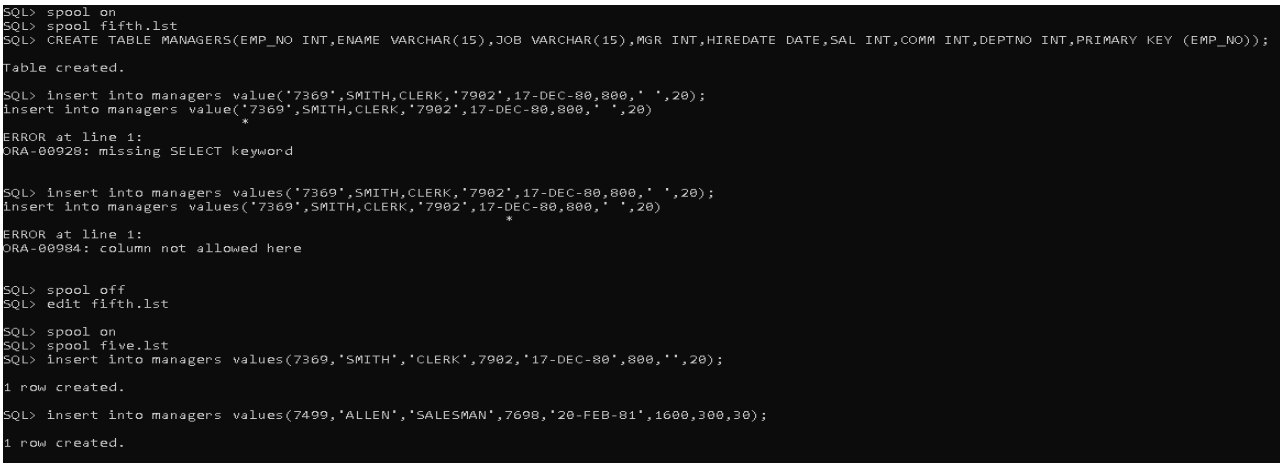
```
SQL> select ename name from managers where comm='False';
select ename name from managers where comm='False'
                                           *
ERROR at line 1:
ORA-01722: invalid number



SQL> select ename name from managers where comm is not null;

NAME
---------------
ALLEN
WARD
MARTIN
TURNER

SQL> SELECT ENAME AS NAME,JOB AS DESIGNATION FROM MANAGERS WHERE
JOB='PRESIDENT';

NAME            DESIGNATION
--------------- ---------------
KING            PRESIDENT

SQL> select * from managers where job is null;

no rows selected

SQL> SELECT ENAME AS NAME FROM MANAGERS WHERE COMM IS NULL;

NAME
---------------
```

```
 JONES
 BLAKE
 SCOTT
 KING
 FORD
 SMITH
 CLARK
 ADMAS
 JAMES
 MILLER

 10 rows selected.

 SQL> SELECT ENAME FROM MANAGERS WHERE ENAME LIKE '%S' OR ENAME LIKE
'S%';

 ENAME
 ---------------
 JONES
 SCOTT
 SMITH
 ADMAS
 JAMES

 SQL>
 SQL> SELECT ENAME AS NAME FROM MANAGERS WHERE ENAME LIKE '_I%';

 NAME
 ---------------
 KING
 MILLER
 SQL> select ename as name, job, deptNo, hireDate from managers order
by hireDate;

 NAME            JOB                 DEPTNO HIREDATE
 --------------- --------------- ---------- ---------
 SMITH           CLERK                   20 17-DEC-80
 ALLEN           SALESMAN                30 20-FEB-81
 WARD            SALESMAN                30 22-FEB-81
 JONES           MANAGER                 20 02-APR-81
 BLAKE           MANAGER                 30 01-MAY-81
 CLARK           MANAGER                 10 09-JUN-81
 TURNER          SALESMAN                30 08-SEP-81
 MARTIN          SALESMAN                30 28-SEP-81
 KING            PRESIDENT               10 17-NOV-81
 FORD            ANALYST                 20 03-DEC-81
 JAMES           CLERK                   30 03-DEC-81

 NAME            JOB                 DEPTNO HIREDATE
 --------------- --------------- ---------- ---------
 MILLER          CLERK                   10 23-JAN-82
 SCOTT           ANALYST                 20 19-APR-87
 ADMAS           CLERK                   20 23-MAY-87

 14 rows selected.

 SQL> select emp_NO,ename as name,job,sal as annualSalary from
managers order by sal;

     EMP_NO NAME            JOB             ANNUALSALARY
 ---------- --------------- --------------- ------------
       7369 SMITH           CLERK                    800
       7900 JAMES           CLERK                    950
```

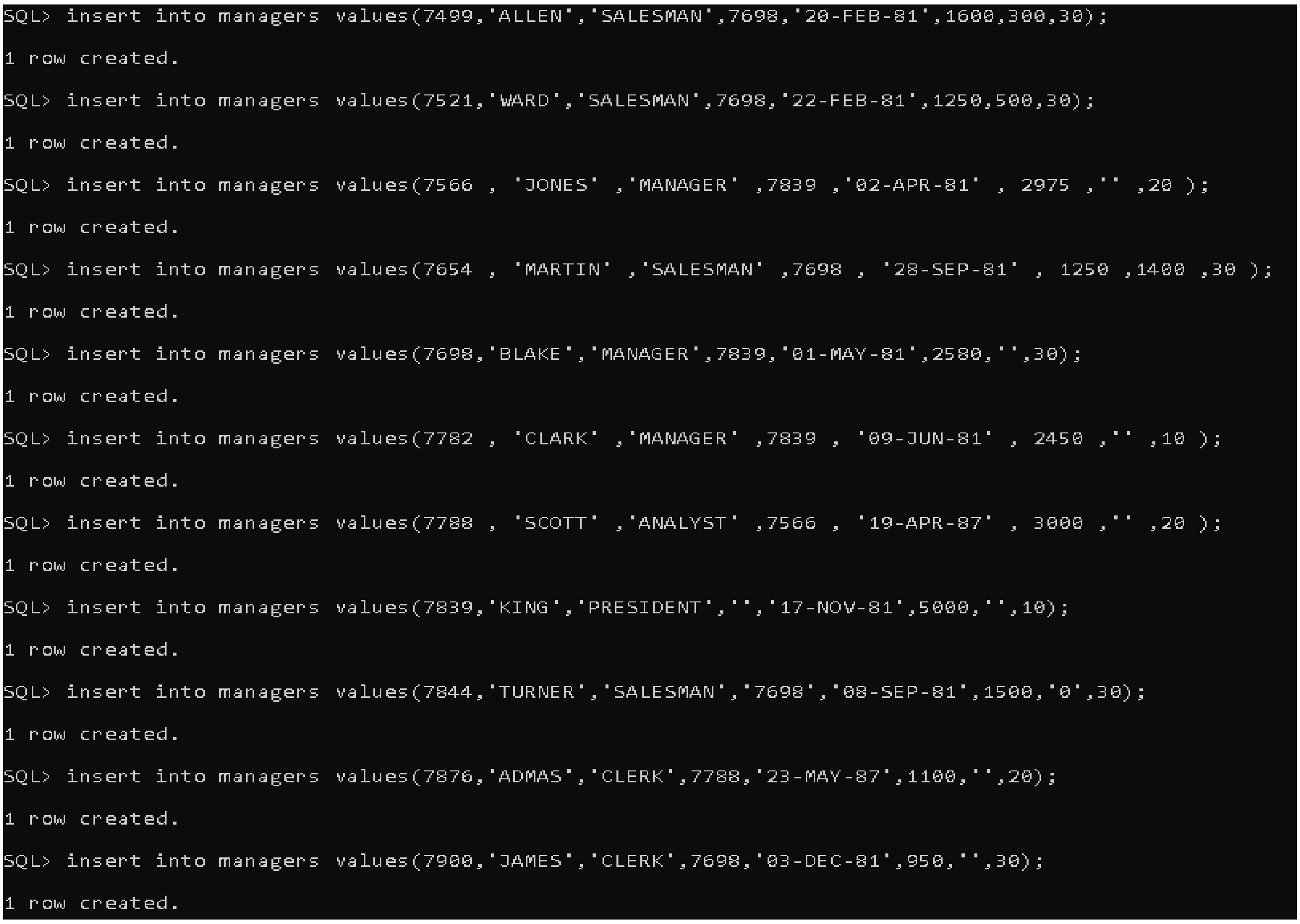
```
      7876 ADMAS           CLERK                   1100

      7654 MARTIN          SALESMAN                1250

      7521 WARD            SALESMAN                1250

      7934 MILLER          CLERK                   1300

      7844 TURNER          SALESMAN                1500

      7499 ALLEN           SALESMAN                1600

      7782 CLARK           MANAGER                 2450

      7698 BLAKE           MANAGER                 2838

      7566 JONES           MANAGER                 3273


    EMP_NO NAME            JOB             ANNUALSALARY

---------- --------------- --------------- ------------

      7788 SCOTT           ANALYST                 3300

      7902 FORD            ANALYST                 3300

      7839 KING            PRESIDENT               5500


14 rows selected.


SQL> select emp_NO,ename as name,job,sal as annualSalary from
managers order by sal desc;


    EMP_NO NAME            JOB             ANNUALSALARY

---------- --------------- --------------- ------------

      7839 KING            PRESIDENT               5500

      7788 SCOTT           ANALYST                 3300

      7902 FORD            ANALYST                 3300

      7566 JONES           MANAGER                 3273

      7698 BLAKE           MANAGER                 2838

      7782 CLARK           MANAGER                 2450

      7499 ALLEN           SALESMAN                1600

      7844 TURNER          SALESMAN                1500

      7934 MILLER          CLERK                   1300
      7521 WARD            SALESMAN                1250
      7654 MARTIN          SALESMAN                1250

    EMP_NO NAME            JOB             ANNUALSALARY
---------- --------------- --------------- ------------
      7876 ADMAS           CLERK                   1100
      7900 JAMES           CLERK                    950
      7369 SMITH           CLERK                    800

14 rows selected.

SQL> select ename,deptNO,sal from(select * from managers order by
deptNO asc,sal desc);

ENAME               DEPTNO        SAL
--------------- ---------- ----------
KING                    10       5500
CLARK                   10       2450
MILLER                  10       1300
SCOTT                   20       3300
FORD                    20       3300
JONES                   20       3273
ADMAS                   20       1100
SMITH                   20        800
BLAKE                   30       2838
ALLEN                   30       1600
TURNER                  30       1500

ENAME               DEPTNO        SAL
--------------- ---------- ----------
WARD                    30       1250
MARTIN                  30       1250
```

```
JAMES                    30        950


14 rows selected.


SQL> spool off
```

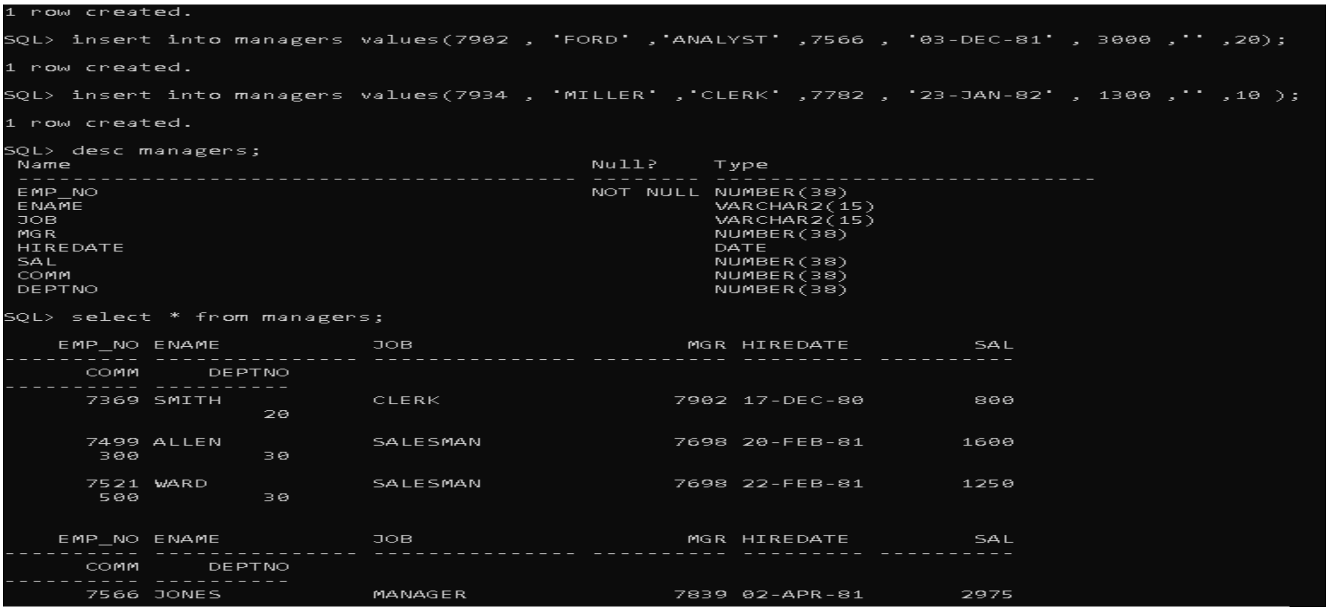
Output:-



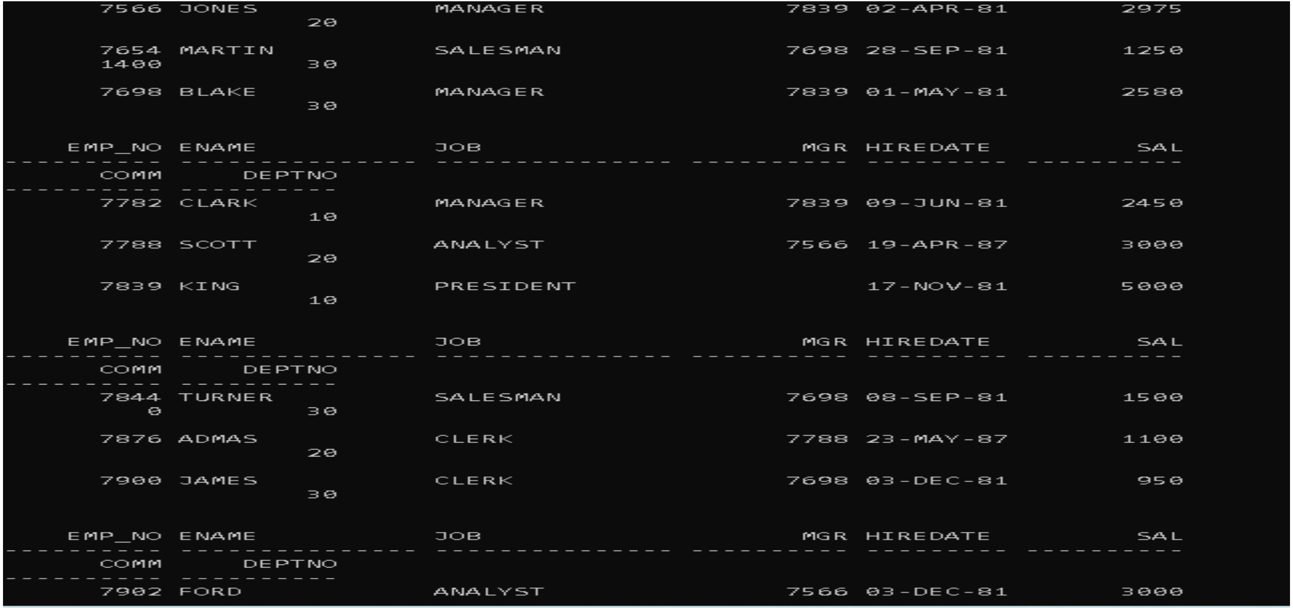
```
SQL> spool on
SQL> spool fifth.lst
SQL> CREATE TABLE MANAGERS(EMP_NO INT,ENAME VARCHAR(15),JOB VARCHAR(15),MGR INT,HIREDATE DATE,SAL INT,COMM INT,DEPTNO INT,PRIMARY KEY (EMP_NO));

Table created.

SQL> insert into managers value('7369',SMITH,CLERK,'7902',17-DEC-80,800,' ',20);
insert into managers value('7369',SMITH,CLERK,'7902',17-DEC-80,800,' ',20)
                           *
ERROR at line 1:
ORA-00928: missing SELECT keyword


SQL> insert into managers values('7369',SMITH,CLERK,'7902',17-DEC-80,800,' ',20);
insert into managers values('7369',SMITH,CLERK,'7902',17-DEC-80,800,' ',20)
                                                         *
ERROR at line 1:
ORA-00984: column not allowed here


SQL> spool off
SQL> edit fifth.lst

SQL> spool on
SQL> spool five.lst
SQL> insert into managers values(7369,'SMITH','CLERK',7902,'17-DEC-80',800,'',20);

1 row created.

SQL> insert into managers values(7499,'ALLEN','SALESMAN',7698,'20-FEB-81',1600,300,30);

1 row created.
```



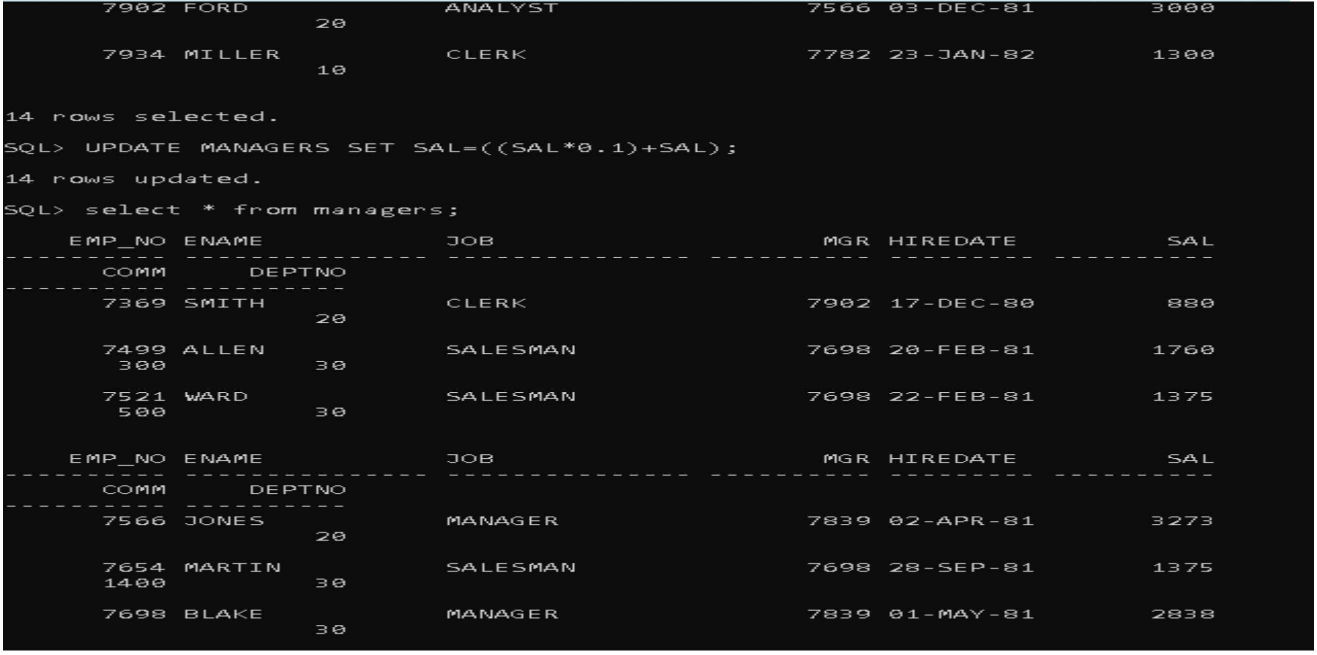
```
SQL> insert into managers values(7499,'ALLEN','SALESMAN',7698,'20-FEB-81',1600,300,30);

1 row created.

SQL> insert into managers values(7521,'WARD','SALESMAN',7698,'22-FEB-81',1250,500,30);

1 row created.

SQL> insert into managers values(7566 , 'JONES' ,'MANAGER' ,7839 ,'02-APR-81' , 2975 ,'' ,20 );

1 row created.

SQL> insert into managers values(7654 , 'MARTIN' ,'SALESMAN' ,7698 , '28-SEP-81' , 1250 ,1400 ,30 );

1 row created.

SQL> insert into managers values(7698,'BLAKE','MANAGER',7839,'01-MAY-81',2580,'',30);

1 row created.

SQL> insert into managers values(7782 , 'CLARK' ,'MANAGER' ,7839 , '09-JUN-81' , 2450 ,'' ,10 );

1 row created.

SQL> insert into managers values(7788 , 'SCOTT' ,'ANALYST' ,7566 , '19-APR-87' , 3000 ,'' ,20 );

1 row created.

SQL> insert into managers values(7839,'KING','PRESIDENT','','17-NOV-81',5000,'',10);

1 row created.

SQL> insert into managers values(7844,'TURNER','SALESMAN','7698','08-SEP-81',1500,'0',30);

1 row created.

SQL> insert into managers values(7876,'ADMAS','CLERK',7788,'23-MAY-87',1100,'',20);

1 row created.

SQL> insert into managers values(7900,'JAMES','CLERK',7698,'03-DEC-81',950,'',30);

1 row created.
```



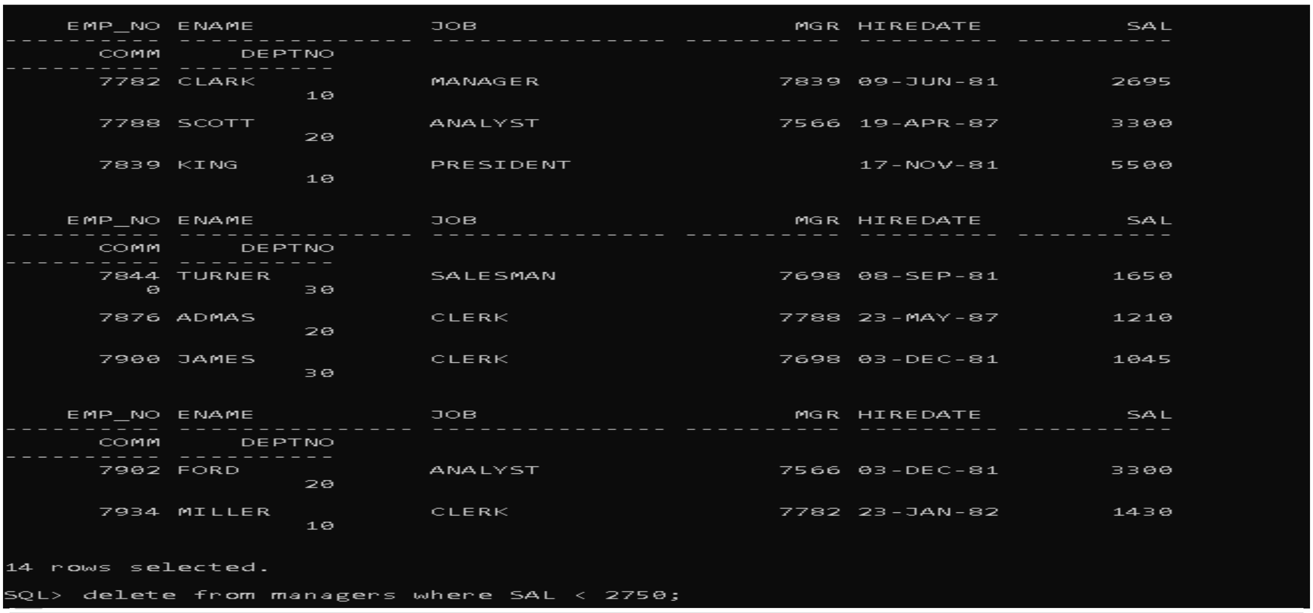
```
1 row created.

SQL> insert into managers values(7902 , 'FORD' ,'ANALYST' ,7566 , '03-DEC-81' , 3000 ,'' ,20);

1 row created.

SQL> insert into managers values(7934 , 'MILLER' ,'CLERK' ,7782 , '23-JAN-82' , 1300 ,'' ,10 );

1 row created.

SQL> desc managers;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_NO                                    NOT NULL NUMBER(38)
 ENAME                                              VARCHAR2(15)
 JOB                                                VARCHAR2(15)
 MGR                                                NUMBER(38)
 HIREDATE                                           DATE
 SAL                                                NUMBER(38)
 COMM                                               NUMBER(38)
 DEPTNO                                             NUMBER(38)

SQL> select * from managers;

    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7369 SMITH           CLERK                 7902 17-DEC-80        800
                   20

      7499 ALLEN           SALESMAN              7698 20-FEB-81       1600
       300         30

      7521 WARD            SALESMAN              7698 22-FEB-81       1250
       500         30


    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7566 JONES           MANAGER               7839 02-APR-81       2975
```



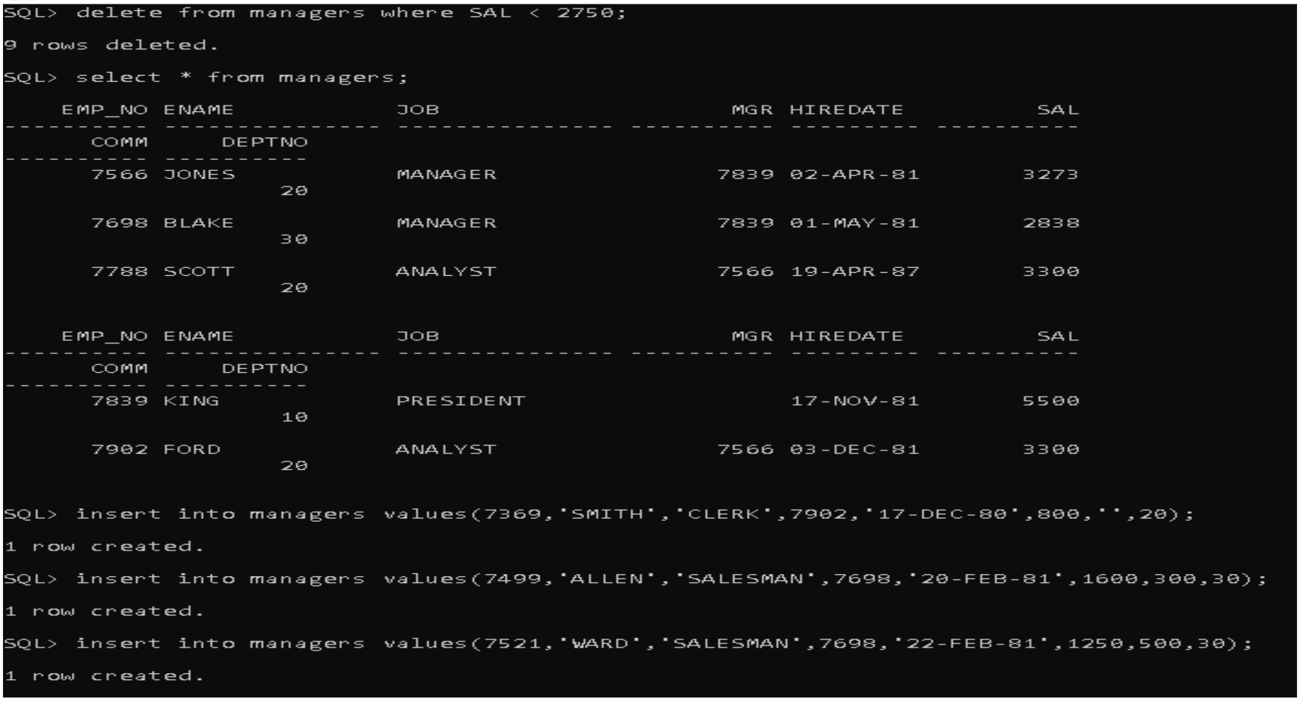
```
      7566 JONES           MANAGER               7839 02-APR-81       2975
                   20

      7654 MARTIN          SALESMAN              7698 28-SEP-81       1250
      1400         30

      7698 BLAKE           MANAGER               7839 01-MAY-81       2580
                   30


    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7782 CLARK           MANAGER               7839 09-JUN-81       2450
                   10

      7788 SCOTT           ANALYST               7566 19-APR-87       3000
                   20

      7839 KING            PRESIDENT                  17-NOV-81       5000
                   10


    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7844 TURNER          SALESMAN              7698 08-SEP-81       1500
         0         30

      7876 ADMAS           CLERK                 7788 23-MAY-87       1100
                   20

      7900 JAMES           CLERK                 7698 03-DEC-81        950
                   30


    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7902 FORD            ANALYST               7566 03-DEC-81       3000
```



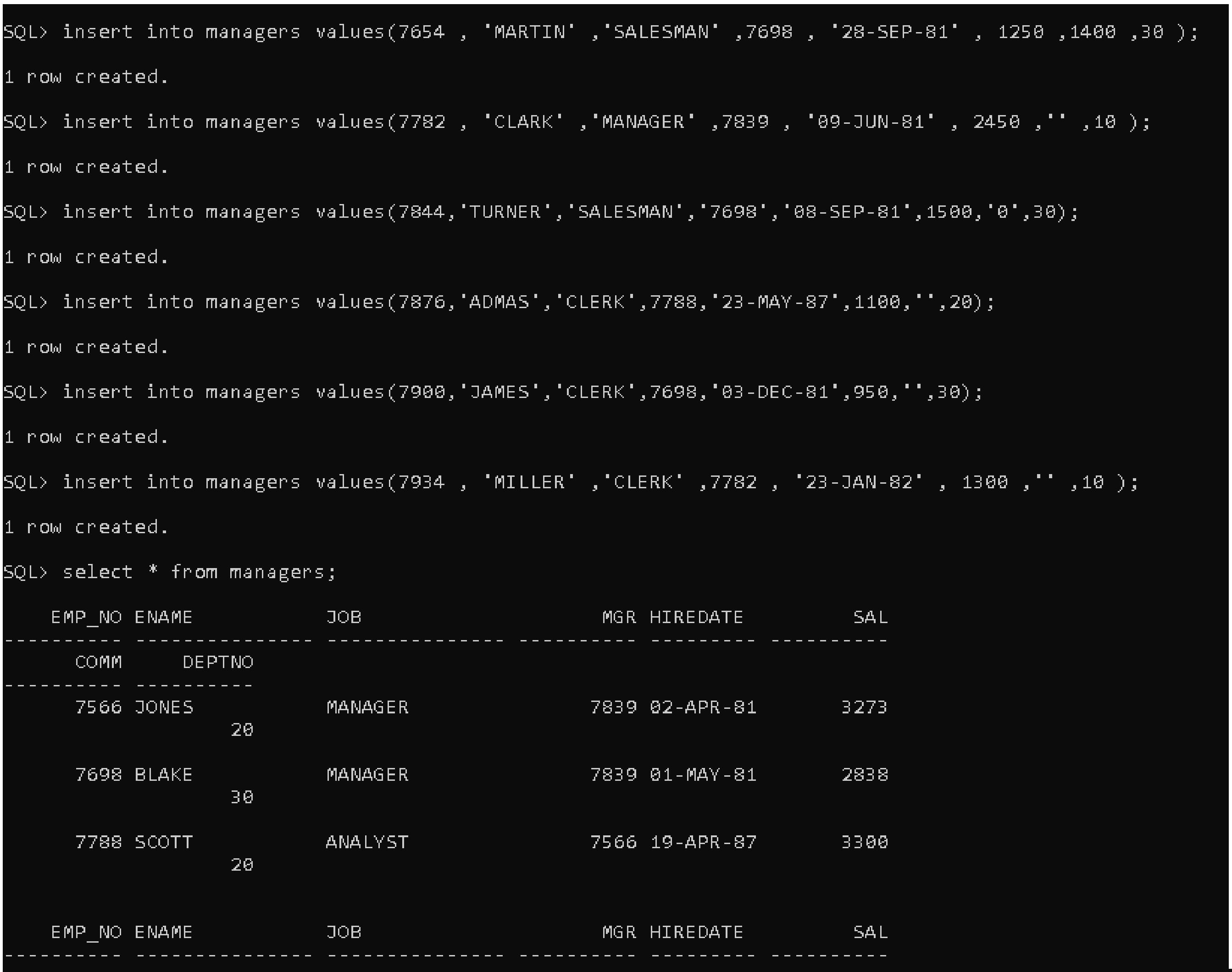
```
      7902 FORD            ANALYST               7566 03-DEC-81       3000
                   20

      7934 MILLER          CLERK                 7782 23-JAN-82       1300
                   10


14 rows selected.

SQL> UPDATE MANAGERS SET SAL=((SAL*0.1)+SAL);

14 rows updated.

SQL> select * from managers;

    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7369 SMITH           CLERK                 7902 17-DEC-80        880
                   20

      7499 ALLEN           SALESMAN              7698 20-FEB-81       1760
       300         30

      7521 WARD            SALESMAN              7698 22-FEB-81       1375
       500         30


    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7566 JONES           MANAGER               7839 02-APR-81       3273
                   20

      7654 MARTIN          SALESMAN              7698 28-SEP-81       1375
      1400         30

      7698 BLAKE           MANAGER               7839 01-MAY-81       2838
                   30
```



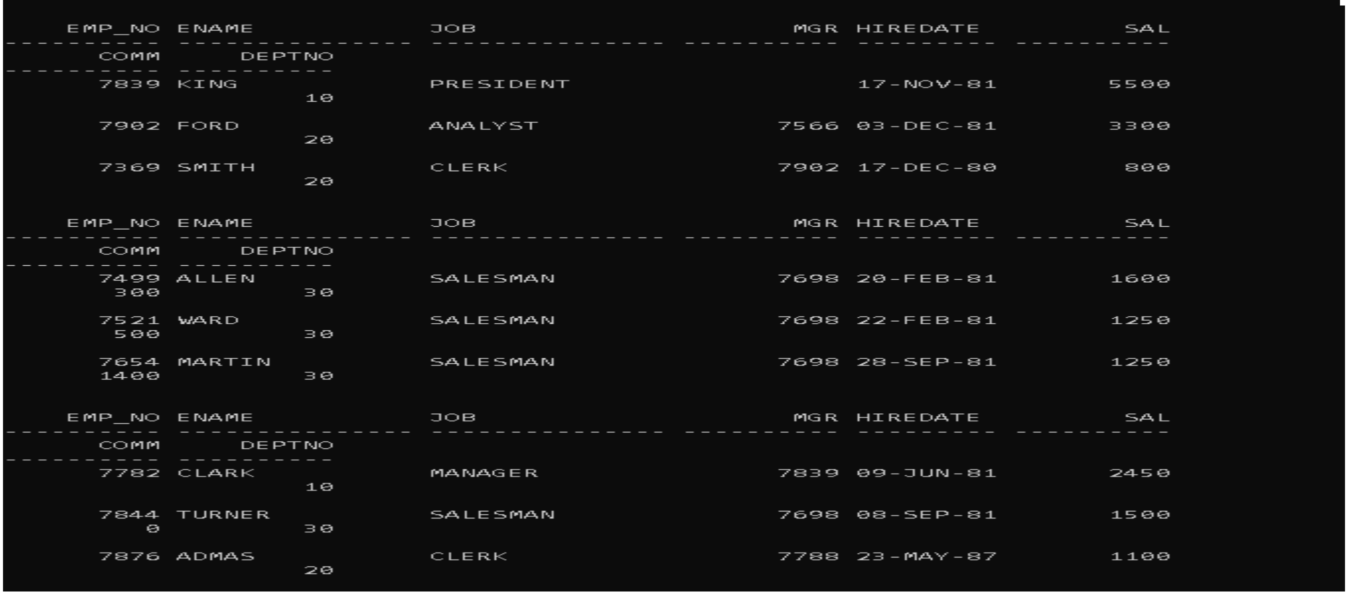
```
    EMP_NO ENAME            JOB                    MGR HIREDATE         SAL
---------- ---------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7782 CLARK            MANAGER               7839 09-JUN-81       2695
                   10

      7788 SCOTT            ANALYST               7566 19-APR-87       3300
                   20

      7839 KING             PRESIDENT                  17-NOV-81       5500
                   10

    EMP_NO ENAME            JOB                    MGR HIREDATE         SAL
---------- ---------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7844 TURNER           SALESMAN              7698 08-SEP-81       1650
         0         30

      7876 ADMAS            CLERK                 7788 23-MAY-87       1210
                   20

      7900 JAMES            CLERK                 7698 03-DEC-81       1045
                   30

    EMP_NO ENAME            JOB                    MGR HIREDATE         SAL
---------- ---------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7902 FORD             ANALYST               7566 03-DEC-81       3300
                   20

      7934 MILLER           CLERK                 7782 23-JAN-82       1430
                   10

14 rows selected.

SQL> delete from managers where SAL < 2750;
```



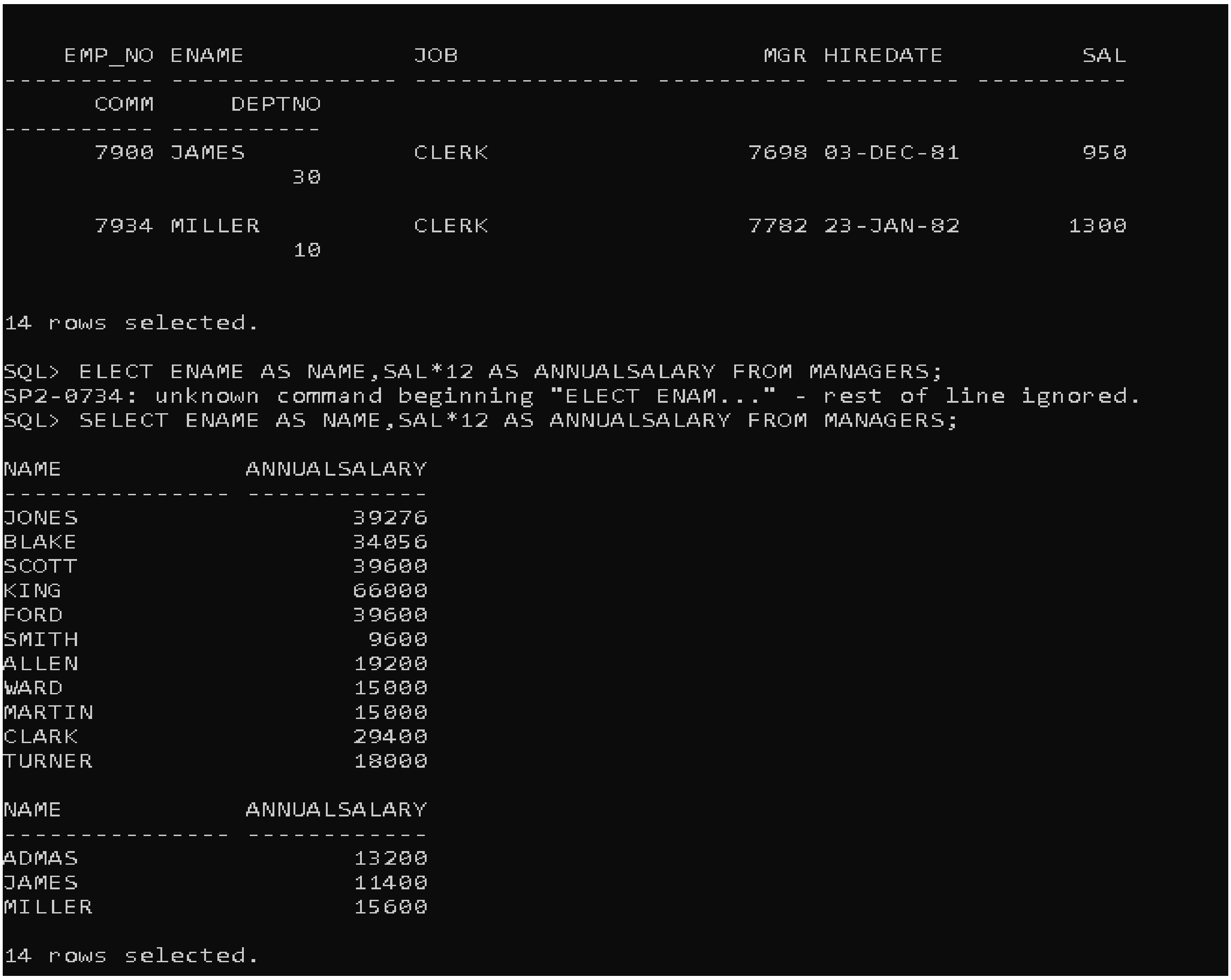
```
SQL> delete from managers where SAL < 2750;

9 rows deleted.

SQL> select * from managers;

    EMP_NO ENAME            JOB                    MGR HIREDATE         SAL
---------- ---------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7566 JONES            MANAGER               7839 02-APR-81       3273
                   20

      7698 BLAKE            MANAGER               7839 01-MAY-81       2838
                   30

      7788 SCOTT            ANALYST               7566 19-APR-87       3300
                   20

    EMP_NO ENAME            JOB                    MGR HIREDATE         SAL
---------- ---------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7839 KING             PRESIDENT                  17-NOV-81       5500
                   10

      7902 FORD             ANALYST               7566 03-DEC-81       3300
                   20

SQL> insert into managers values(7369,'SMITH','CLERK',7902,'17-DEC-80',800,'',20);

1 row created.

SQL> insert into managers values(7499,'ALLEN','SALESMAN',7698,'20-FEB-81',1600,300,30);

1 row created.

SQL> insert into managers values(7521,'WARD','SALESMAN',7698,'22-FEB-81',1250,500,30);

1 row created.
```



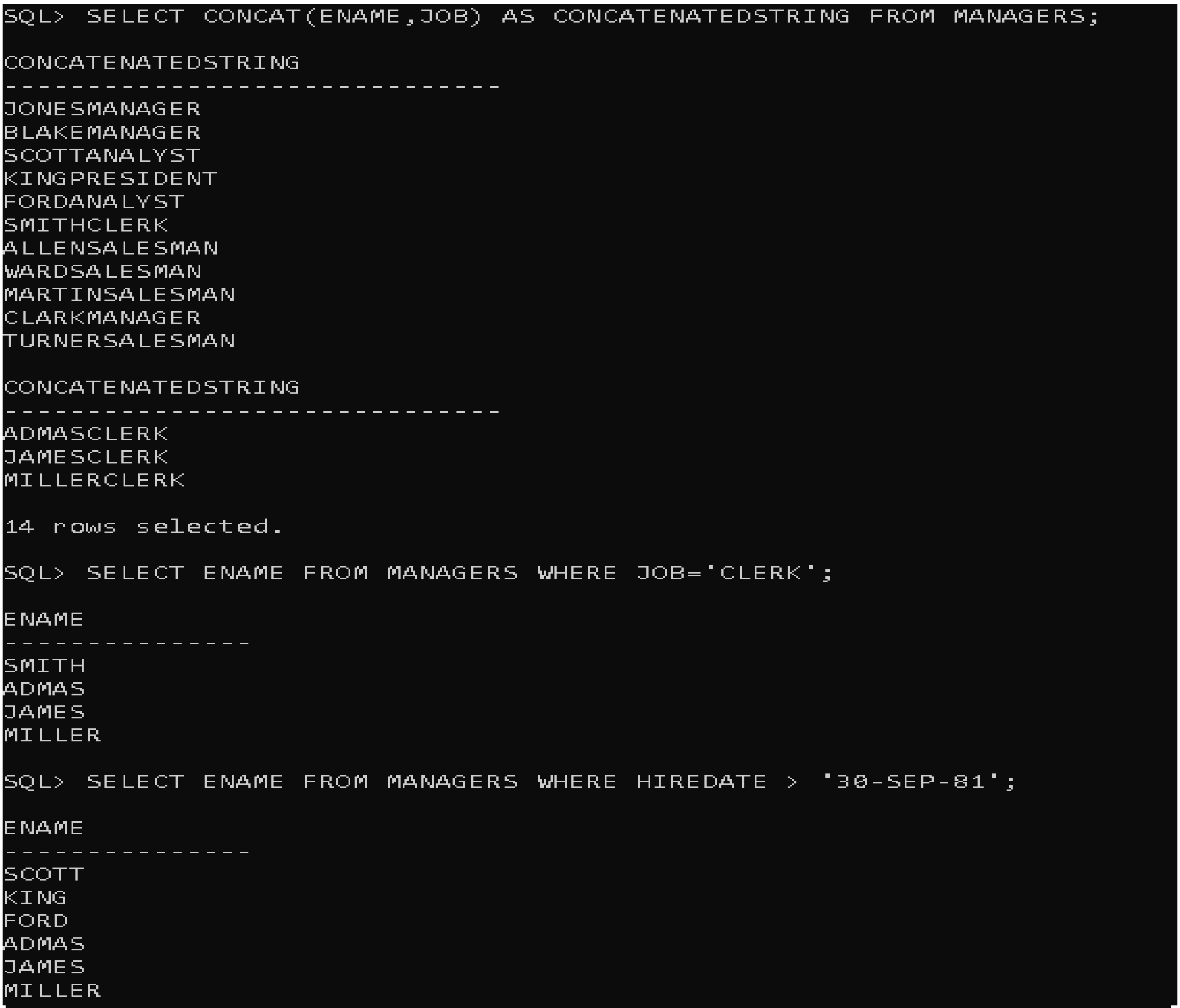
```
SQL> insert into managers values(7654 , 'MARTIN' ,'SALESMAN' ,7698 , '28-SEP-81' , 1250 ,1400 ,30 );

1 row created.

SQL> insert into managers values(7782 , 'CLARK' ,'MANAGER' ,7839 , '09-JUN-81' , 2450 ,'' ,10 );

1 row created.

SQL> insert into managers values(7844,'TURNER','SALESMAN','7698','08-SEP-81',1500,'0',30);

1 row created.

SQL> insert into managers values(7876,'ADMAS','CLERK',7788,'23-MAY-87',1100,'',20);

1 row created.

SQL> insert into managers values(7900,'JAMES','CLERK',7698,'03-DEC-81',950,'',30);

1 row created.

SQL> insert into managers values(7934 , 'MILLER' ,'CLERK' ,7782 , '23-JAN-82' , 1300 ,'' ,10 );

1 row created.

SQL> select * from managers;

    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7566 JONES           MANAGER               7839 02-APR-81       3273
                   20

      7698 BLAKE           MANAGER               7839 01-MAY-81       2838
                   30

      7788 SCOTT           ANALYST               7566 19-APR-87       3300
                   20


    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
```



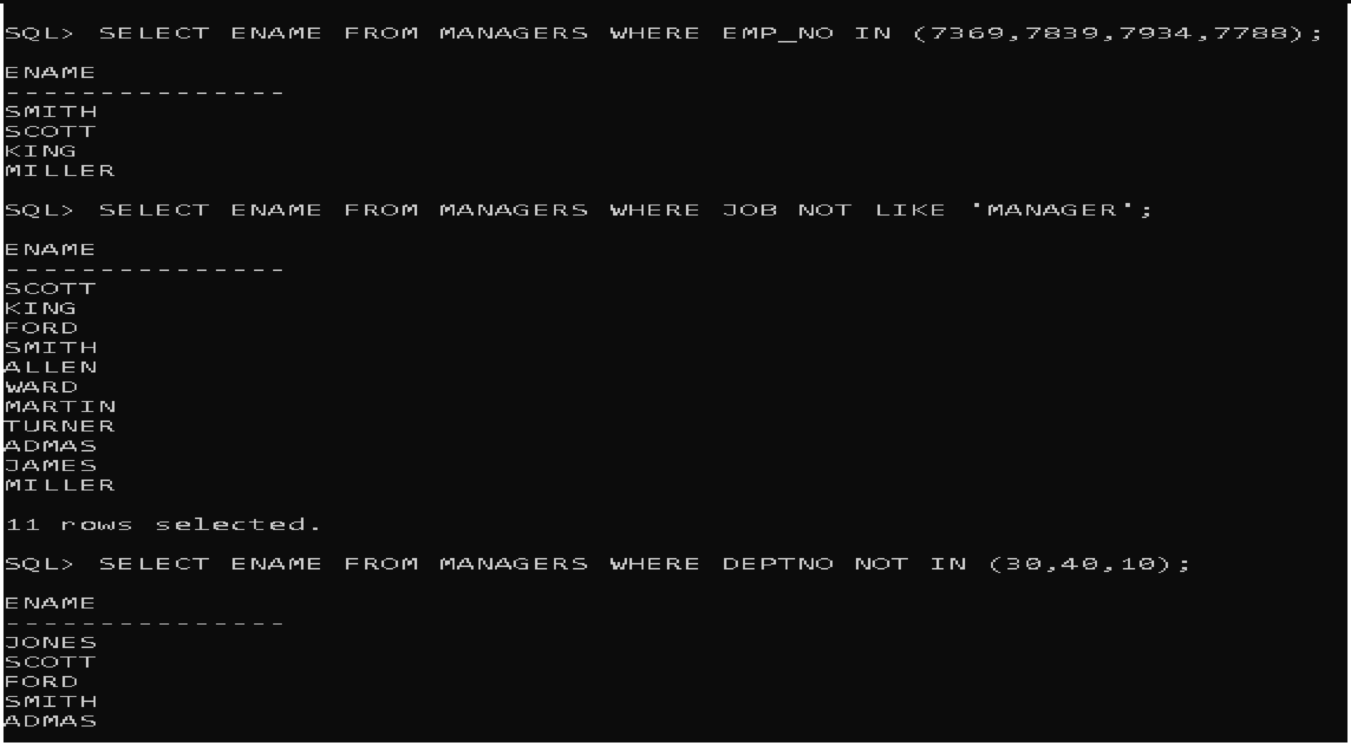
```
    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7839 KING            PRESIDENT                  17-NOV-81       5500
                   10

      7902 FORD            ANALYST               7566 03-DEC-81       3300
                   20

      7369 SMITH           CLERK                 7902 17-DEC-80        800
                   20

    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7499 ALLEN           SALESMAN              7698 20-FEB-81       1600
       300             30

      7521 WARD            SALESMAN              7698 22-FEB-81       1250
       500             30

      7654 MARTIN          SALESMAN              7698 28-SEP-81       1250
      1400             30

    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7782 CLARK           MANAGER               7839 09-JUN-81       2450
                   10

      7844 TURNER          SALESMAN              7698 08-SEP-81       1500
         0             30

      7876 ADMAS           CLERK                 7788 23-MAY-87       1100
                   20
```



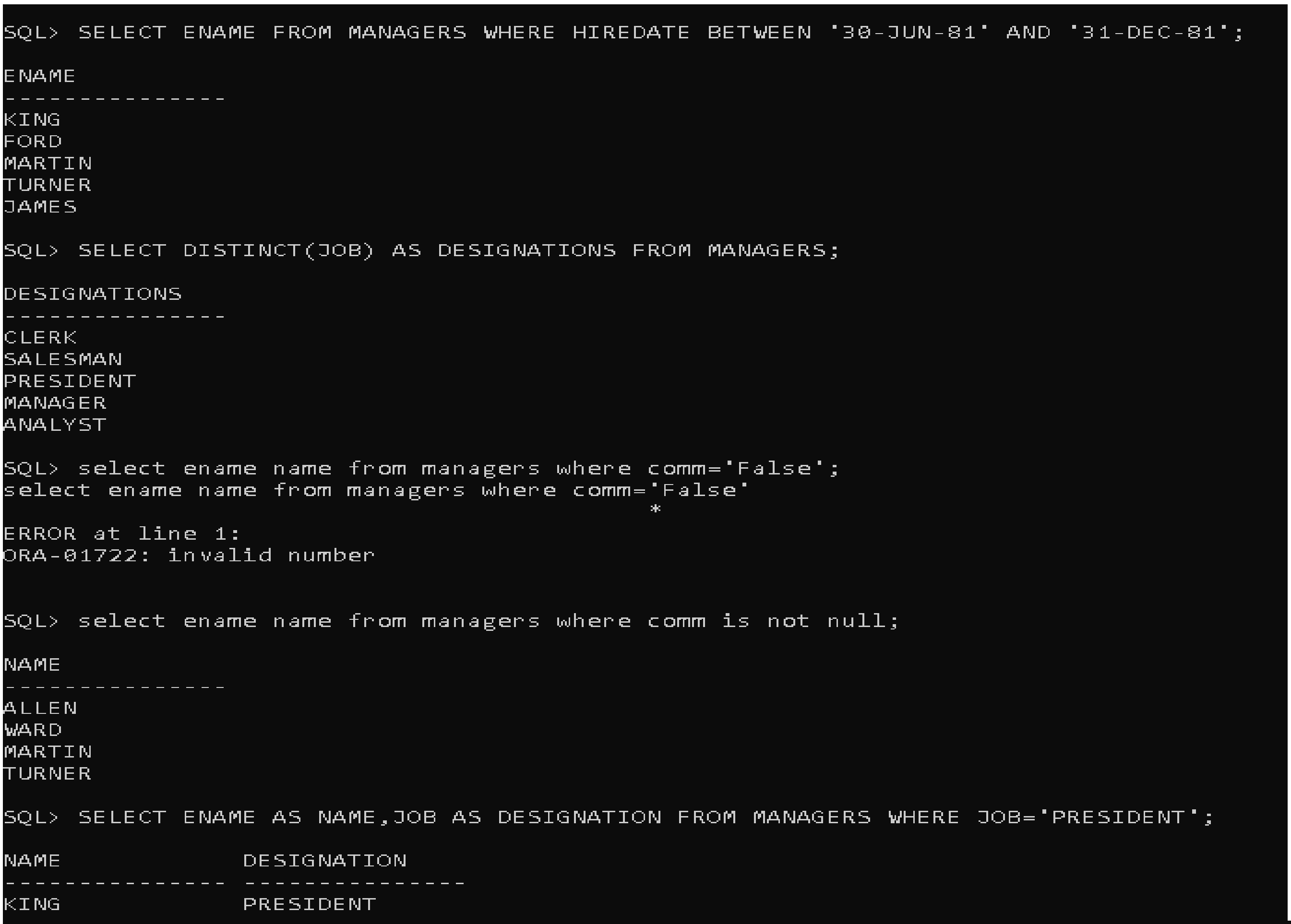
```
    EMP_NO ENAME           JOB                    MGR HIREDATE         SAL
---------- --------------- --------------- ---------- --------- ----------
      COMM     DEPTNO
---------- ----------
      7900 JAMES           CLERK                 7698 03-DEC-81        950
                   30

      7934 MILLER          CLERK                 7782 23-JAN-82       1300
                   10


14 rows selected.

SQL> ELECT ENAME AS NAME,SAL*12 AS ANNUALSALARY FROM MANAGERS;
SP2-0734: unknown command beginning "ELECT ENAM..." - rest of line ignored.
SQL> SELECT ENAME AS NAME,SAL*12 AS ANNUALSALARY FROM MANAGERS;

NAME            ANNUALSALARY
--------------- ------------
JONES                  39276
BLAKE                  34056
SCOTT                  39600
KING                   66000
FORD                   39600
SMITH                   9600
ALLEN                  19200
WARD                   15000
MARTIN                 15000
CLARK                  29400
TURNER                 18000

NAME            ANNUALSALARY
--------------- ------------
ADMAS                  13200
JAMES                  11400
MILLER                 15600

14 rows selected.
```



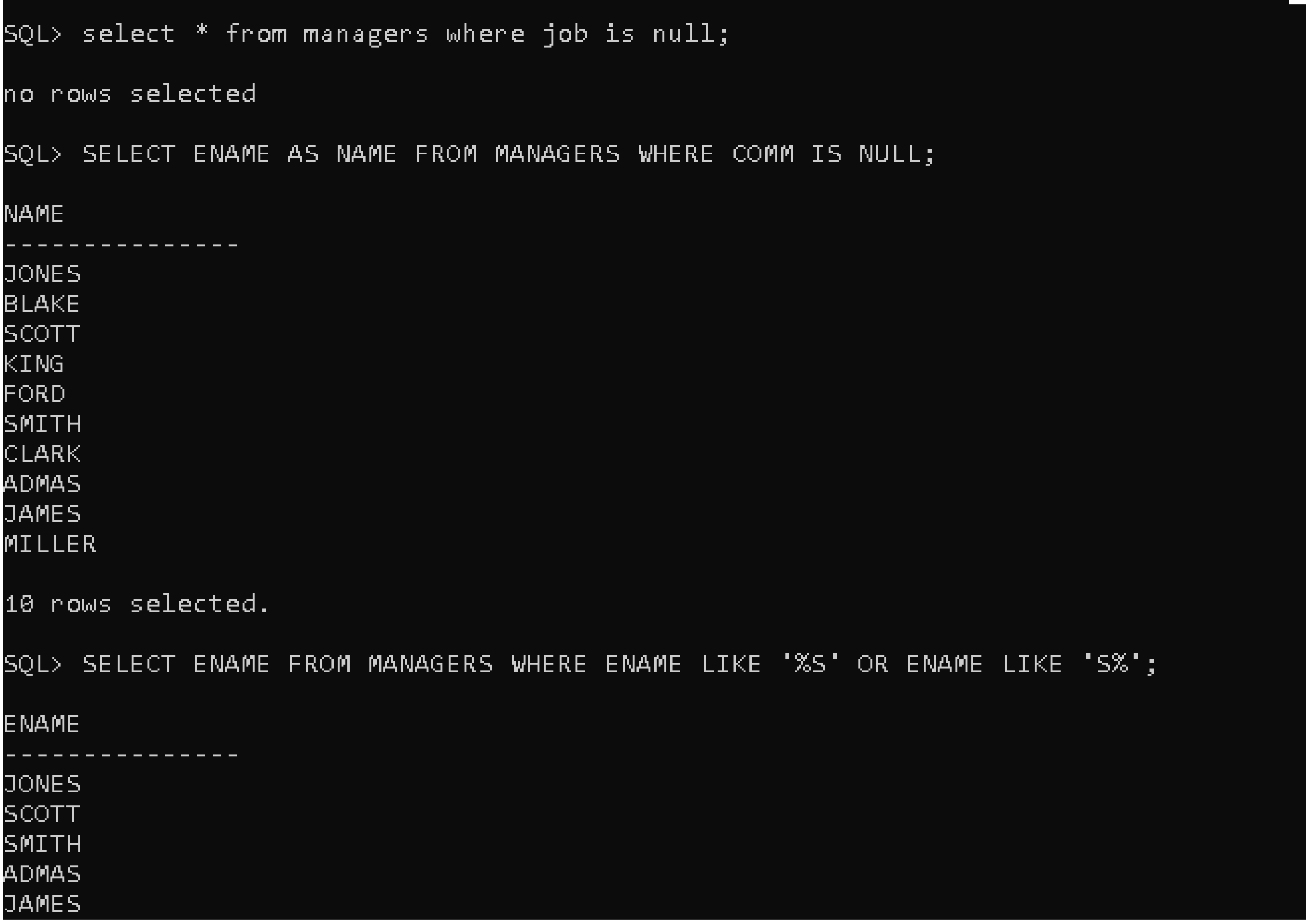
```
SQL> SELECT CONCAT(ENAME,JOB) AS CONCATENATEDSTRING FROM MANAGERS;

CONCATENATEDSTRING
------------------------------
JONESMANAGER
BLAKEMANAGER
SCOTTANALYST
KINGPRESIDENT
FORDANALYST
SMITHCLERK
ALLENSALESMAN
WARDSALESMAN
MARTINSALESMAN
CLARKMANAGER
TURNERSALESMAN

CONCATENATEDSTRING
------------------------------
ADMASCLERK
JAMESCLERK
MILLERCLERK

14 rows selected.

SQL> SELECT ENAME FROM MANAGERS WHERE JOB='CLERK';

ENAME
---------------
SMITH
ADMAS
JAMES
MILLER

SQL> SELECT ENAME FROM MANAGERS WHERE HIREDATE > '30-SEP-81';

ENAME
---------------
SCOTT
KING
FORD
ADMAS
JAMES
MILLER
```



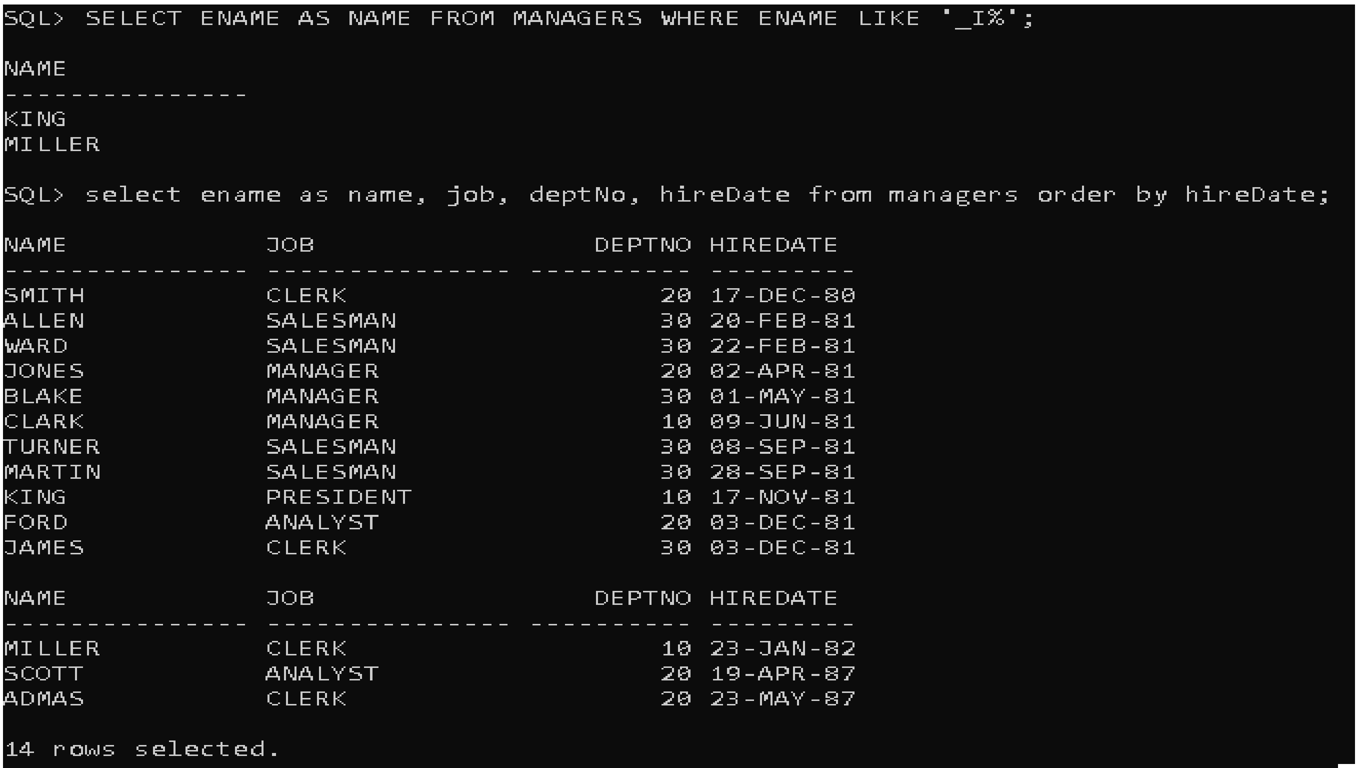
```
SQL> SELECT ENAME FROM MANAGERS WHERE EMP_NO IN (7369,7839,7934,7788);

ENAME
---------------
SMITH
SCOTT
KING
MILLER

SQL> SELECT ENAME FROM MANAGERS WHERE JOB NOT LIKE 'MANAGER';

ENAME
---------------
SCOTT
KING
FORD
SMITH
ALLEN
WARD
MARTIN
TURNER
ADMAS
JAMES
MILLER

11 rows selected.

SQL> SELECT ENAME FROM MANAGERS WHERE DEPTNO NOT IN (30,40,10);

ENAME
---------------
JONES
SCOTT
FORD
SMITH
ADMAS
```



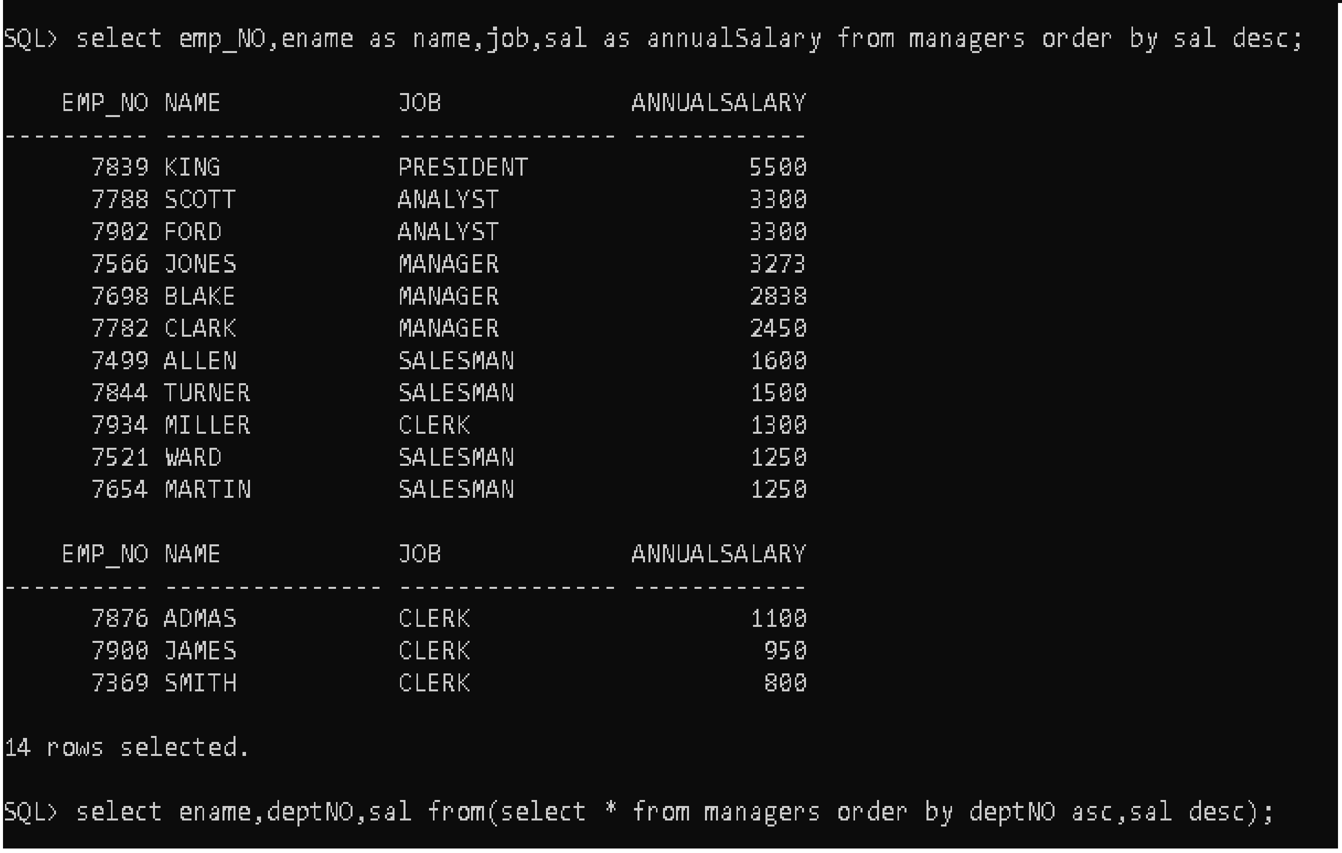
```
SQL> SELECT ENAME FROM MANAGERS WHERE HIREDATE BETWEEN '30-JUN-81' AND '31-DEC-81';

ENAME
---------------
KING
FORD
MARTIN
TURNER
JAMES

SQL> SELECT DISTINCT(JOB) AS DESIGNATIONS FROM MANAGERS;

DESIGNATIONS
---------------
CLERK
SALESMAN
PRESIDENT
MANAGER
ANALYST

SQL> select ename name from managers where comm='False';
select ename name from managers where comm='False'
                                           *
ERROR at line 1:
ORA-01722: invalid number


SQL> select ename name from managers where comm is not null;

NAME
---------------
ALLEN
WARD
MARTIN
TURNER

SQL> SELECT ENAME AS NAME,JOB AS DESIGNATION FROM MANAGERS WHERE JOB='PRESIDENT';

NAME            DESIGNATION
--------------- ---------------
KING            PRESIDENT
```



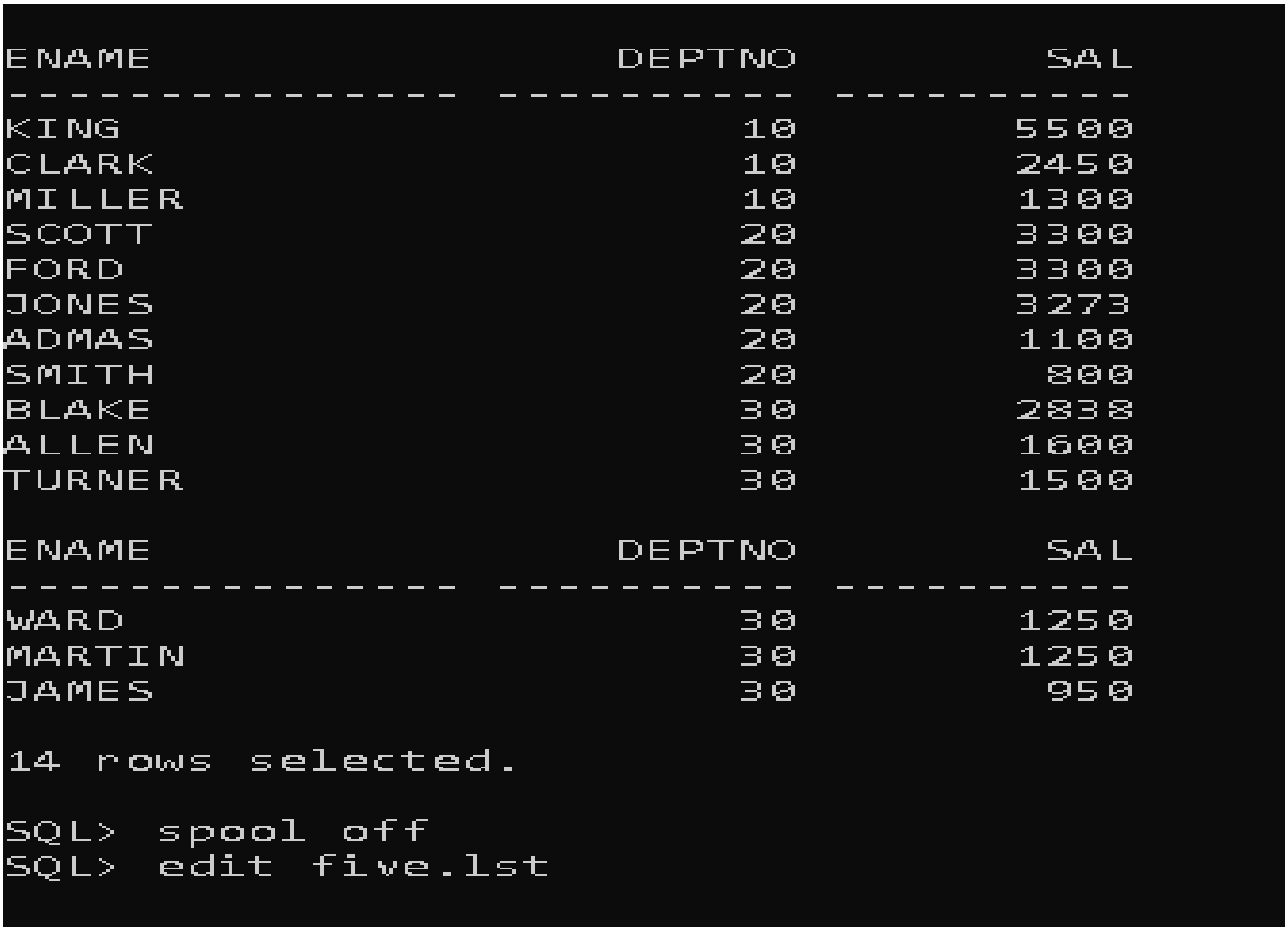
```
SQL> select * from managers where job is null;

no rows selected

SQL> SELECT ENAME AS NAME FROM MANAGERS WHERE COMM IS NULL;

NAME
---------------
JONES
BLAKE
SCOTT
KING
FORD
SMITH
CLARK
ADMAS
JAMES
MILLER

10 rows selected.

SQL> SELECT ENAME FROM MANAGERS WHERE ENAME LIKE '%S' OR ENAME LIKE 'S%';

ENAME
---------------
JONES
SCOTT
SMITH
ADMAS
JAMES
```



```
SQL> SELECT ENAME AS NAME FROM MANAGERS WHERE ENAME LIKE '_I%';

NAME
---------------
KING
MILLER

SQL> select ename as name, job, deptNo, hireDate from managers order by hireDate;

NAME            JOB                 DEPTNO HIREDATE
--------------- --------------- ---------- ---------
SMITH           CLERK                   20 17-DEC-80
ALLEN           SALESMAN                30 20-FEB-81
WARD            SALESMAN                30 22-FEB-81
JONES           MANAGER                 20 02-APR-81
BLAKE           MANAGER                 30 01-MAY-81
CLARK           MANAGER                 10 09-JUN-81
TURNER          SALESMAN                30 08-SEP-81
MARTIN          SALESMAN                30 28-SEP-81
KING            PRESIDENT               10 17-NOV-81
FORD            ANALYST                 20 03-DEC-81
JAMES           CLERK                   30 03-DEC-81

NAME            JOB                 DEPTNO HIREDATE
--------------- --------------- ---------- ---------
MILLER          CLERK                   10 23-JAN-82
SCOTT           ANALYST                 20 19-APR-87
ADMAS           CLERK                   20 23-MAY-87

14 rows selected.
```



```
SQL> select emp_NO,ename as name,job,sal as annualSalary from managers order by sal desc;

    EMP_NO NAME            JOB             ANNUALSALARY
---------- --------------- --------------- ------------
      7839 KING            PRESIDENT               5500
      7788 SCOTT           ANALYST                 3300
      7902 FORD            ANALYST                 3300
      7566 JONES           MANAGER                 3273
      7698 BLAKE           MANAGER                 2838
      7782 CLARK           MANAGER                 2450
      7499 ALLEN           SALESMAN                1600
      7844 TURNER          SALESMAN                1500
      7934 MILLER          CLERK                   1300
      7521 WARD            SALESMAN                1250
      7654 MARTIN          SALESMAN                1250

    EMP_NO NAME            JOB             ANNUALSALARY
---------- --------------- --------------- ------------
      7876 ADMAS           CLERK                   1100
      7900 JAMES           CLERK                    950
      7369 SMITH           CLERK                    800

14 rows selected.

SQL> select ename,deptNO,sal from(select * from managers order by deptNO asc,sal desc);
```



```
ENAME                DEPTNO        SAL
--------------- ---------- ----------
KING                     10       5500
CLARK                    10       2450
MILLER                   10       1300
SCOTT                    20       3300
FORD                     20       3300
JONES                    20       3273
ADMAS                    20       1100
SMITH                    20        800
BLAKE                    30       2838
ALLEN                    30       1600
TURNER                   30       1500

ENAME                DEPTNO        SAL
--------------- ---------- ----------
WARD                     30       1250
MARTIN                   30       1250
JAMES                    30        950

14 rows selected.

SQL> spool off
SQL> edit five.lst
```

Result:-

Successfully executed the commands using the basic select statements.

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

Title of Experiment

AIM : To execute commands using the functions.

SQL Command:

```
SQL> SELECT ADD_MONTHS(SYSDATE,5) FROM DUAL;


ADD_MONTH
---------
22-JUL-22


SQL> select last_day (sysdate) from dual;


LAST_DAY(
---------
28-FEB-22


SQL> select to_date('10-02-09','dd-mm-yy') from dual;


TO_DATE('
---------
10-FEB-09


SQL> select months_between(sysdate,to_date('22-01-22','dd-mm-yy'))from dual;


MONTHS_BETWEEN(SYSDATE,TO_DATE('22-01-22','DD-MM-YY'))
------------------------------------------------------
```

```
SQL> select next_day(sysdate,'wednesday')from dual;

NEXT_DAY(
---------
23-FEB-22

SQL>  select to_char(sysdate,'dy dd mon yyyy') from dual;

TO_CHAR(SYSDATE,'DYDDMONYYYY')
---------------------------------
tue 22 feb 2022

SQL> select round(sysdate,'year')from dual;

ROUND(SYS
---------
01-JAN-22

SQL> select round(sysdate,'month')from dual;

ROUND(SYS
---------
01-MAR-22

SQL> select round(sysdate,'day')from dual;

ROUND(SYS
---------
20-FEB-22
```

```
SQL> select trunc(sysdate,'year')from dual;

TRUNC(SYS
---------
01-JAN-22

SQL> select trunc(sysdate,'month')from dual;

TRUNC(SYS
---------
01-FEB-22

SQL> select trunc(sysdate,'day')from dual;

TRUNC(SYS
---------
20-FEB-22

SQL> select trunc(sysdate)from dual;

TRUNC(SYS
---------
22-FEB-22

SQL>  select greatest(sysdate,to_date('02-10-06','dd-mm-yy'),to_date('12-07-12','dd-mm-yy'))from
dual;

GREATEST(
---------
22-FEB-22
```

```
SQL>  select sysdate+25 from dual;

SYSDATE+2
---------
19-MAR-22

SQL>  select sysdate-25 from dual;

SYSDATE-2
---------
28-JAN-22

SQL> select sysdate - to_date('22-01-22','dd-mm-yy')from dual;

SYSDATE-TO_DATE('22-01-22','DD-MM-YY')
--------------------------------------
                             31.2767708

SQL> select initcap('jesus christ')from dual;

INITCAP('JES
------------
Jesus Christ

SQL> select lower('DIED') from dual;

LOWE
----
died
```

```
SQL> select upper('for Us') from dual;

UPPER(
------
FOR US

SQL> select ltrim('lordourgod','lord')from dual;

LTRIM
-----
urgod

SQL> select rtrim('godlovesyou','you')from dual;

RTRIM('G
--------
godloves

SQL> select translate('jack','j','b')from dual;

TRAN
----
back

SQL> select replace('jack and jue','j','bl')from dual;

REPLACE('JACKA
--------------
black and blue
```

```
SQL> select substr('wages of sin is death',10,3)from dual;

SUB
---
sin

SQL> select to_date('10-02-09','dd-mm-yy')from dual;

TO_DATE('
---------
10-FEB-09

SQL> select to_char(sysdate,'dy dd mon yyyy')from dual;

TO_CHAR(SYSDATE,'DYDDMONYYYY')
---------------------------------
tue 22 feb 2022

SQL> select to_char(12345.5,'L099,999,99')from dual;

TO_CHAR(12345.5,'L099
---------------------
        $000,123,46

SQL> select to_number('123')from dual;

TO_NUMBER('123')
----------------
          123
```

```
SQL> select abs(-15) from dual;

  ABS(-15)
----------
        15

SQL> select ceil(33.645) from dual;

CEIL(33.645)
------------
          34

SQL>
SQL> select cos(180) from dual;

  COS(180)
----------
-.59846007

SQL>  select cosh(0) from dual;

   COSH(0)
----------
         1

SQL> select exp(2) from dual;

    EXP(2)
----------
 7.3890561
```

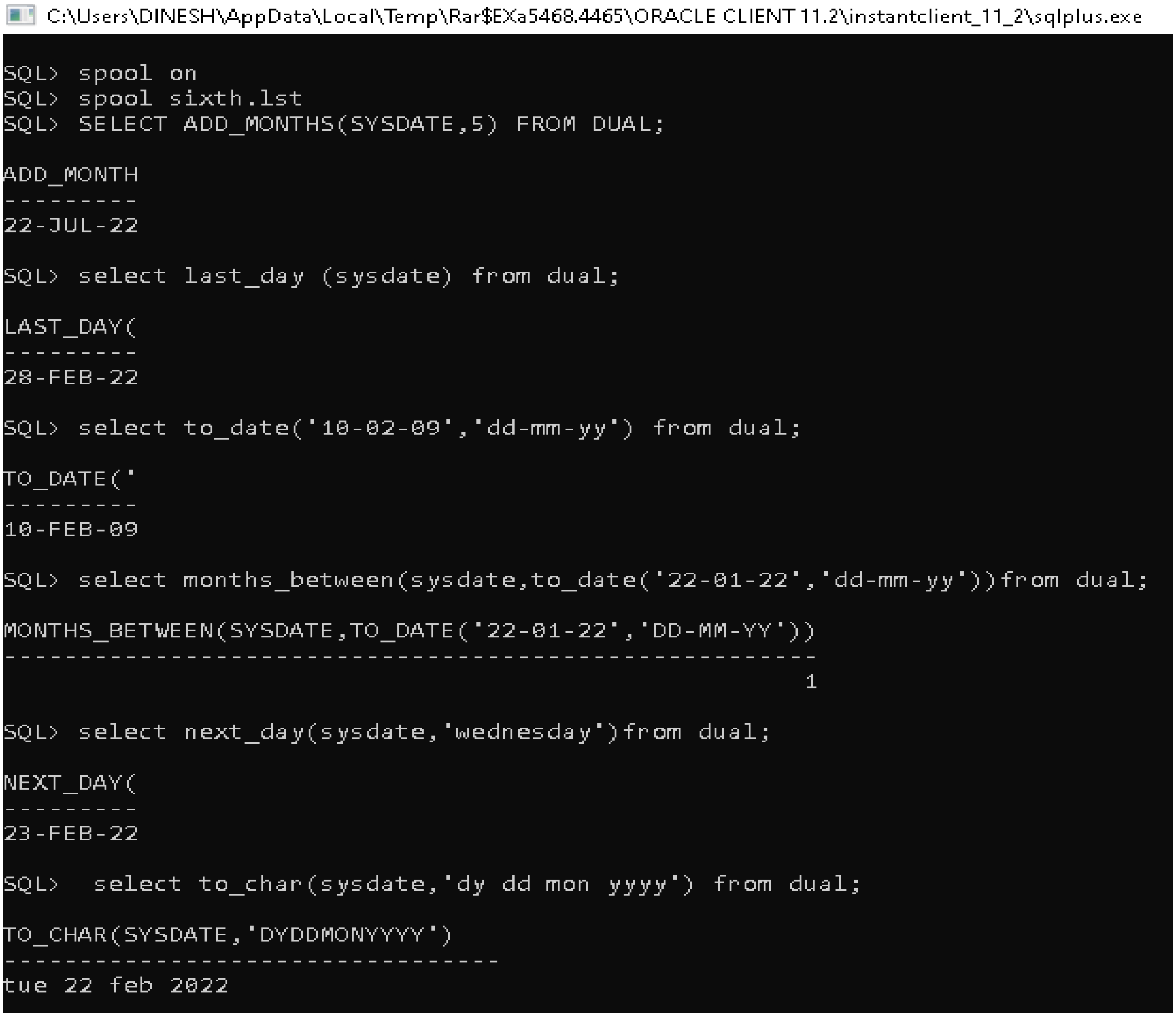
```
SQL> select floor(100.2) from dual;

FLOOR(100.2)
------------
         100

SQL> select ln(5) from dual;

     LN(5)
----------
1.60943791

SQL> select log(2,64) from dual;

 LOG(2,64)
----------
         6

SQL> select mod(17,3) from dual;

 MOD(17,3)
----------
         2

SQL> select power(5,3) from dual;

POWER(5,3)
----------
       125
```

```
SQL> select round(125.67854,2) from dual;

ROUND(125.67854,2)
-----------------
           125.68

SQL> select sin(-19) from dual;

  SIN(-19)
----------
-.14987721

SQL> select sin(90) from dual;

   SIN(90)
----------
.893996664

SQL> select sinh(45) from dual;

  SINH(45)
----------
1.7467E+19

SQL> select sqrt(7) from dual;

   SQRT(7)
----------
2.64575131
```

```
SQL> select tan(45) from dual;

   TAN(45)
----------
1.61977519

SQL> select tanh(60) from dual;

  TANH(60)
----------
         1

SQL> select trunc(125.5764,2) from dual;

TRUNC(125.5764,2)
-----------------
           125.57

SQL> select uid from dual;

       UID
----------
        97

SQL> select user from dual;

USER
--------------------------------------------------------------------------------
RA1911028010098
```

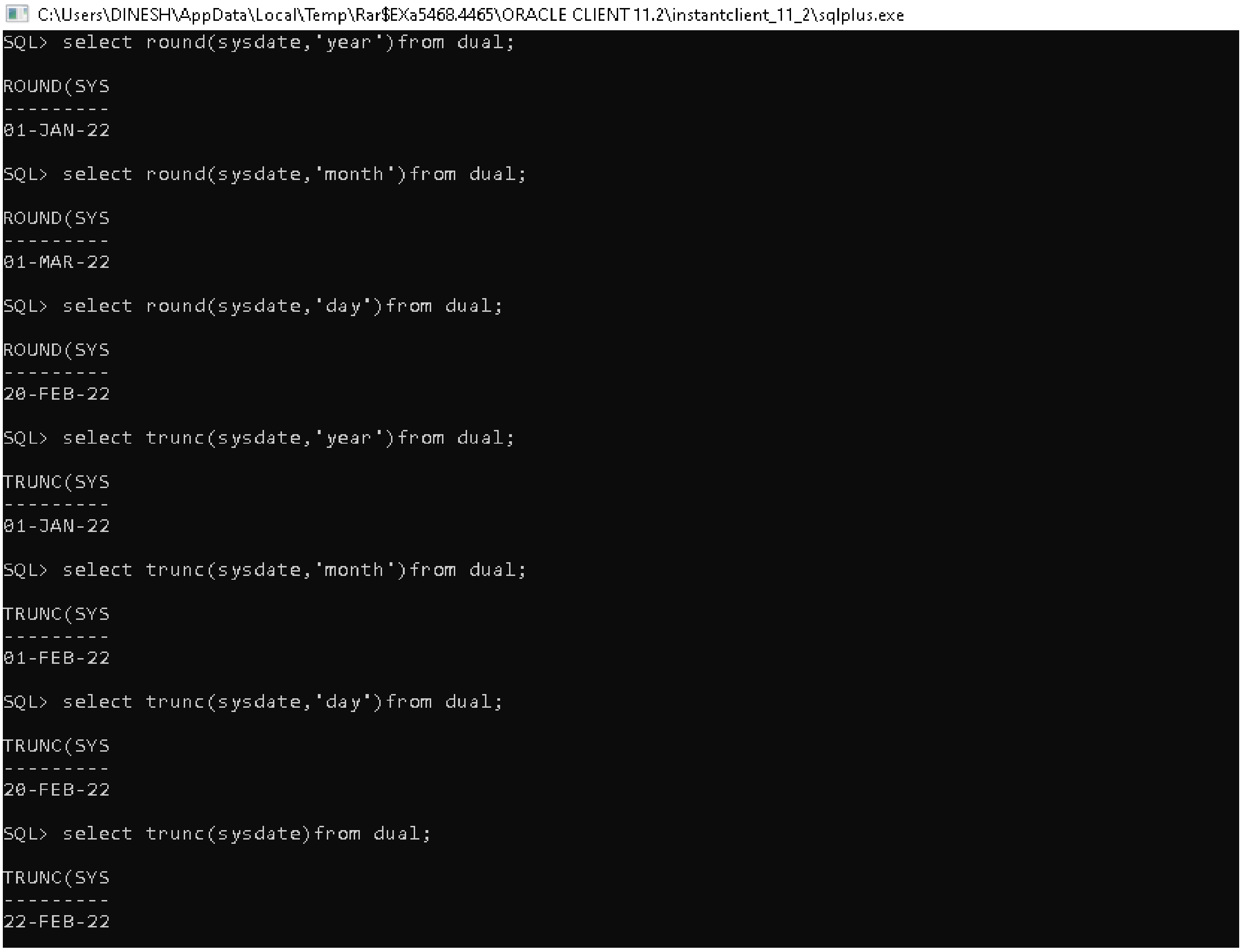
```
SQL> select vsize('hello') from dual;


VSIZE('HELLO')
--------------
            5


SQL> insert into managers values(7369,'SMITH','CLERK',7902,'17-DEC-80',800,'',20);


1 row created.


SQL> select nvl(comm,50)from managers where emp_no=7369;


NVL(COMM,50)
------------
          50
SQL> spool off
```

Output:-

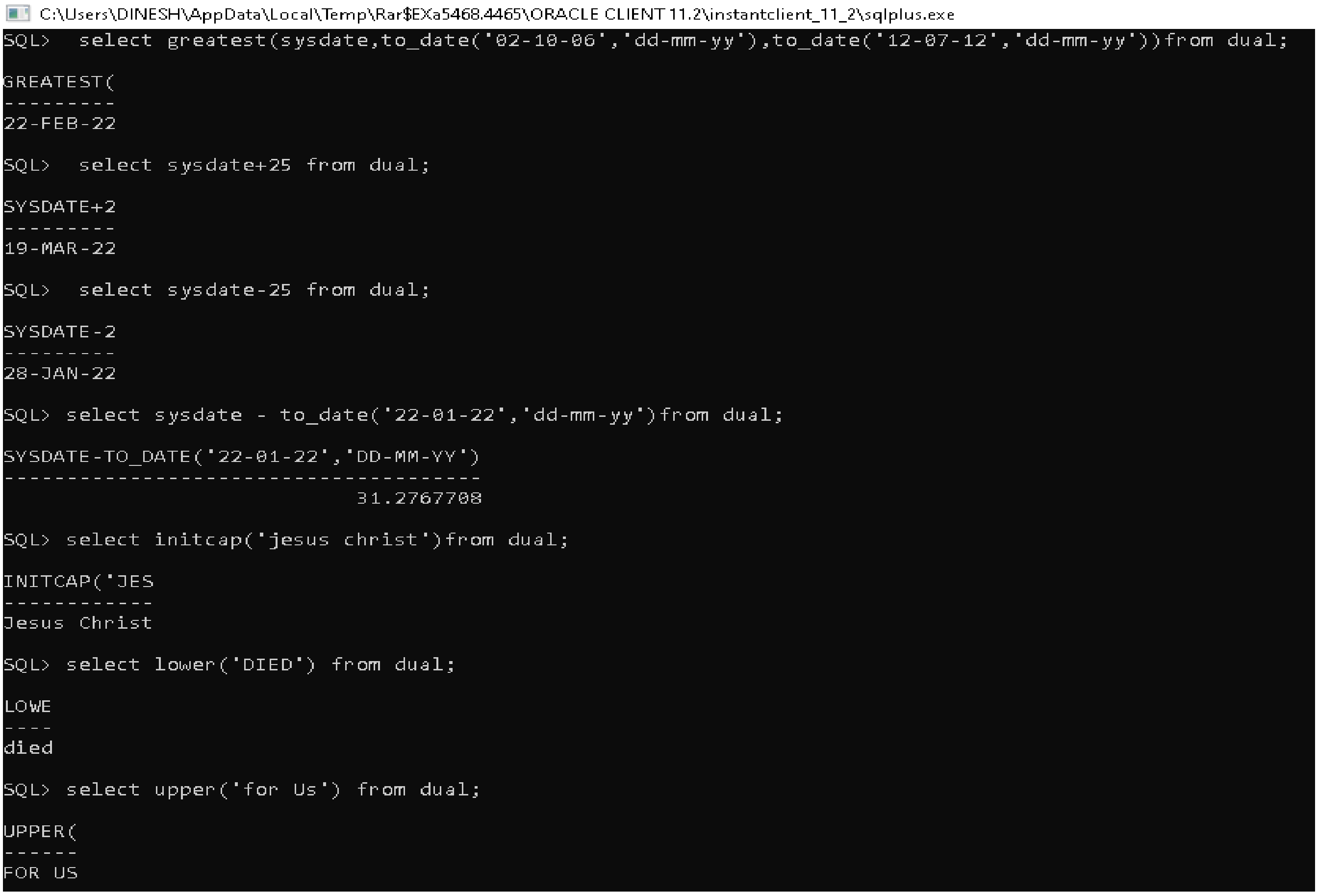


C:\Users\DINESH\AppData\Local\Temp\Rar$EXa5468.4465\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

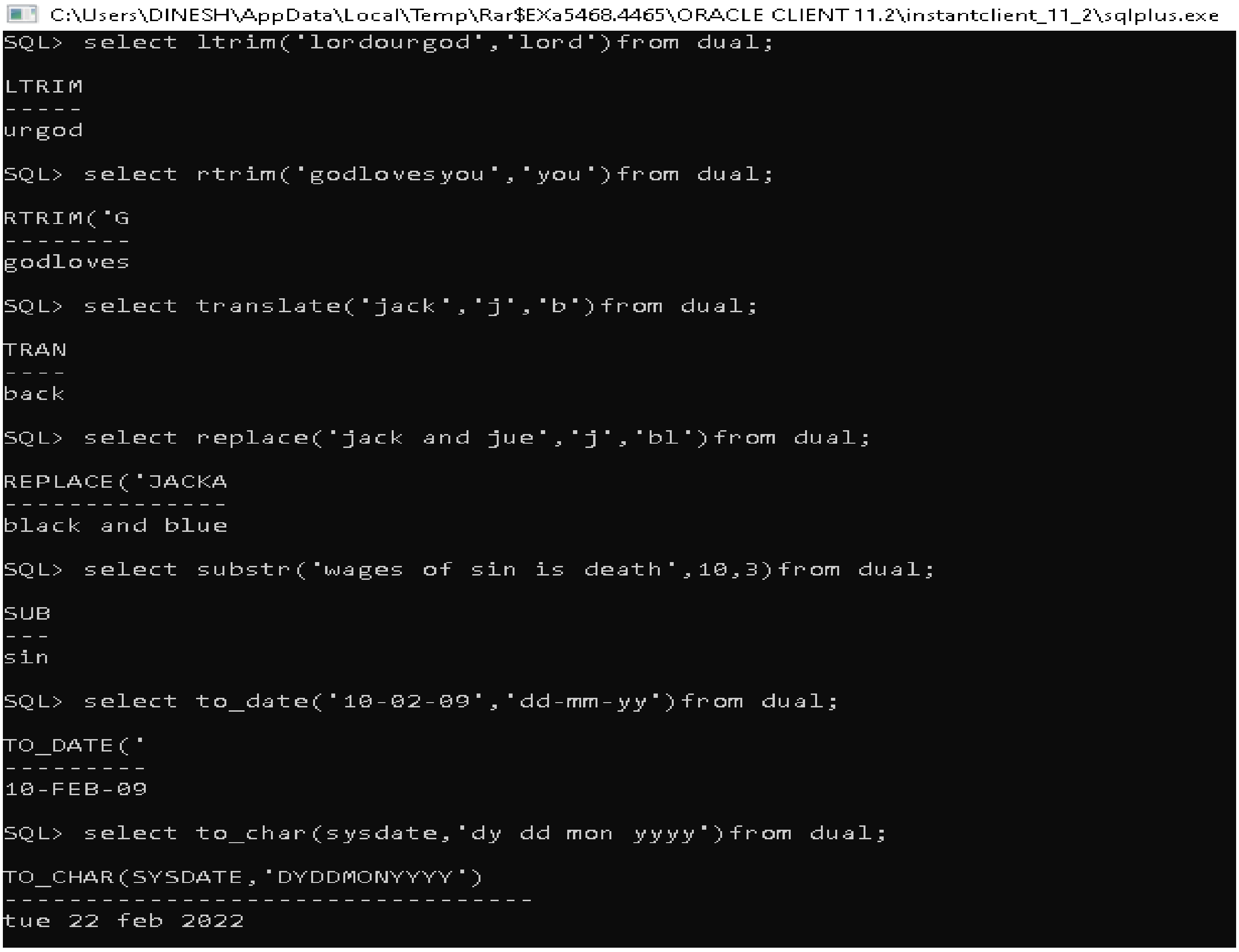
```
SQL> spool on
SQL> spool sixth.lst
SQL> SELECT ADD_MONTHS(SYSDATE,5) FROM DUAL;

ADD_MONTH
---------
22-JUL-22

SQL> select last_day (sysdate) from dual;

LAST_DAY(
---------
28-FEB-22

SQL> select to_date('10-02-09','dd-mm-yy') from dual;

TO_DATE('
---------
10-FEB-09

SQL> select months_between(sysdate,to_date('22-01-22','dd-mm-yy'))from dual;

MONTHS_BETWEEN(SYSDATE,TO_DATE('22-01-22','DD-MM-YY'))
------------------------------------------------------
                                                     1

SQL> select next_day(sysdate,'wednesday')from dual;

NEXT_DAY(
---------
23-FEB-22

SQL>  select to_char(sysdate,'dy dd mon yyyy') from dual;

TO_CHAR(SYSDATE,'DYDDMONYYYY')
---------------------------------
tue 22 feb 2022
```


C:\Users\DINESH\AppData\Local\Temp\Rar$EXa5468.4465\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
SQL> select round(sysdate,'year')from dual;

ROUND(SYS
---------
01-JAN-22

SQL> select round(sysdate,'month')from dual;

ROUND(SYS
---------
01-MAR-22

SQL> select round(sysdate,'day')from dual;

ROUND(SYS
---------
20-FEB-22

SQL> select trunc(sysdate,'year')from dual;

TRUNC(SYS
---------
01-JAN-22

SQL> select trunc(sysdate,'month')from dual;

TRUNC(SYS
---------
01-FEB-22

SQL> select trunc(sysdate,'day')from dual;

TRUNC(SYS
---------
20-FEB-22

SQL> select trunc(sysdate)from dual;

TRUNC(SYS
---------
22-FEB-22
```

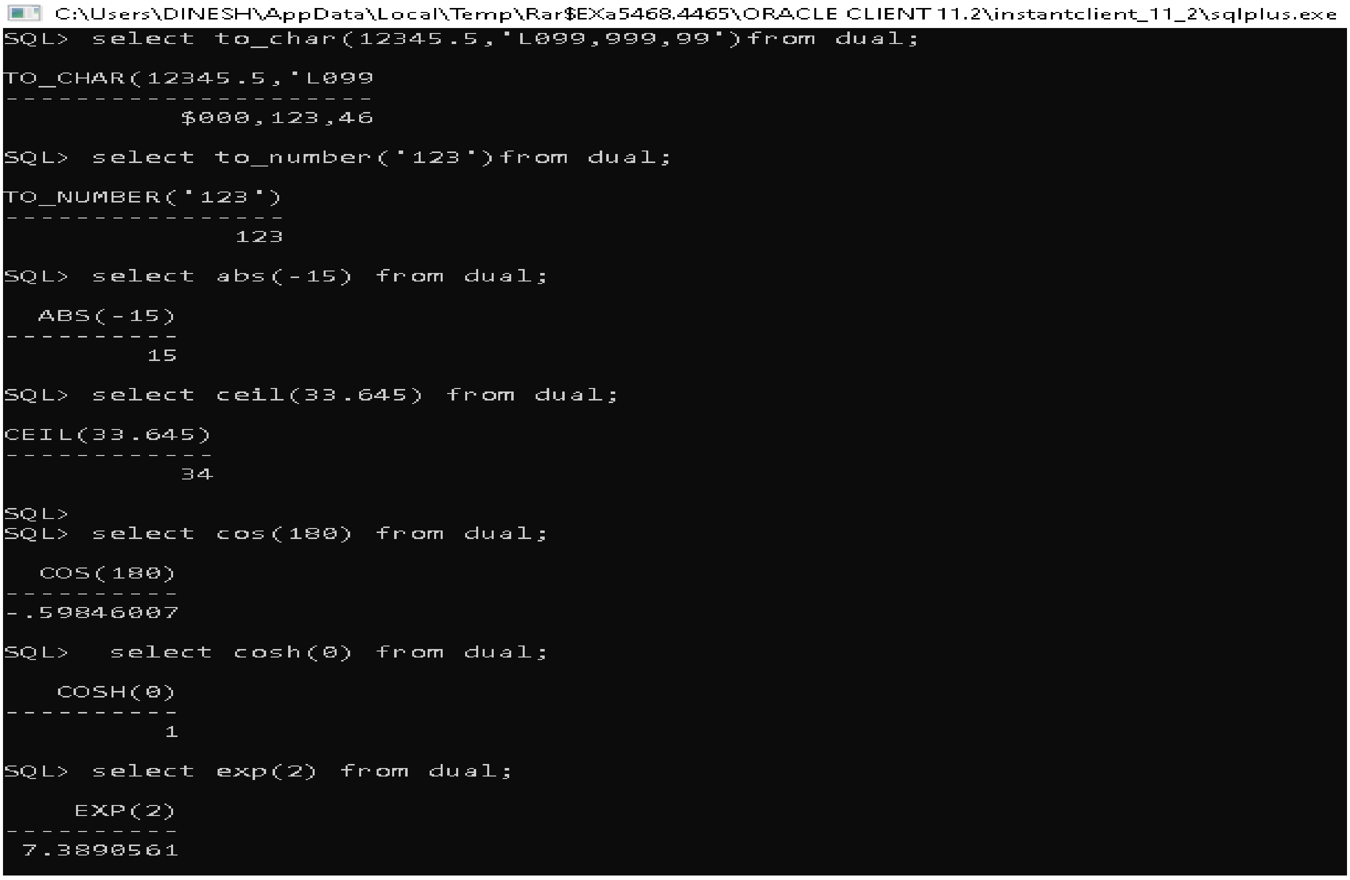

C:\Users\DINESH\AppData\Local\Temp\Rar$EXa5468.4465\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
SQL>  select greatest(sysdate,to_date('02-10-06','dd-mm-yy'),to_date('12-07-12','dd-mm-yy'))from dual;

GREATEST(
---------
22-FEB-22

SQL>  select sysdate+25 from dual;

SYSDATE+2
---------
19-MAR-22

SQL>  select sysdate-25 from dual;

SYSDATE-2
---------
28-JAN-22

SQL> select sysdate - to_date('22-01-22','dd-mm-yy')from dual;

SYSDATE-TO_DATE('22-01-22','DD-MM-YY')
--------------------------------------
                            31.2767708

SQL> select initcap('jesus christ')from dual;

INITCAP('JES
------------
Jesus Christ

SQL> select lower('DIED') from dual;

LOWE
----
died

SQL> select upper('for Us') from dual;

UPPER(
------
FOR US
```



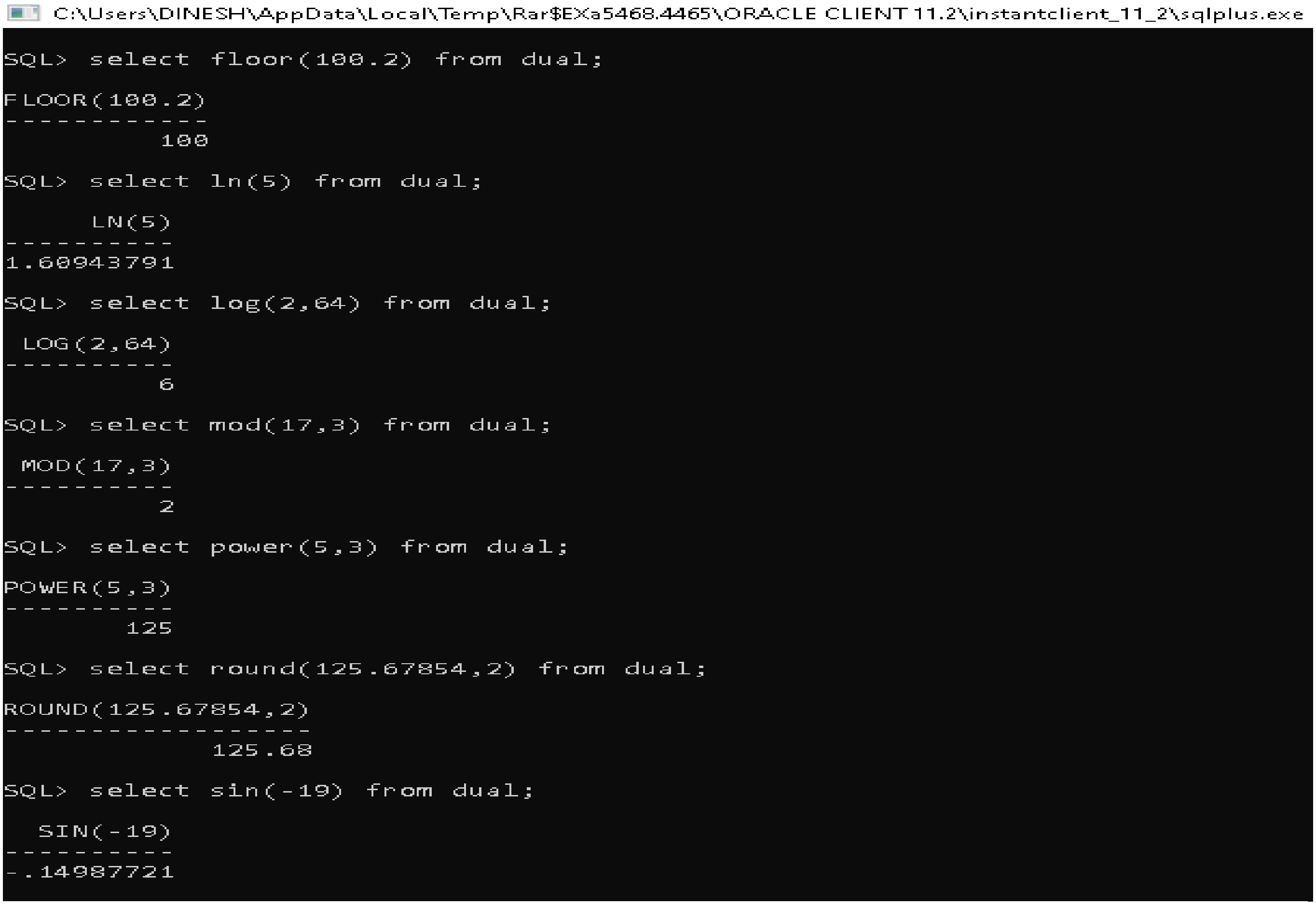
C:\Users\DINESH\AppData\Local\Temp\Rar$EXa5468.4465\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
SQL> select ltrim('lordourgod','lord')from dual;

LTRIM
-----
urgod

SQL> select rtrim('godlovesyou','you')from dual;

RTRIM('G
--------
godloves

SQL> select translate('jack','j','b')from dual;

TRAN
----
back

SQL> select replace('jack and jue','j','bl')from dual;

REPLACE('JACKA
--------------
black and blue

SQL> select substr('wages of sin is death',10,3)from dual;

SUB
---
sin

SQL> select to_date('10-02-09','dd-mm-yy')from dual;

TO_DATE('
---------
10-FEB-09

SQL> select to_char(sysdate,'dy dd mon yyyy')from dual;

TO_CHAR(SYSDATE,'DYDDMONYYYY')
---------------------------------
tue 22 feb 2022
```



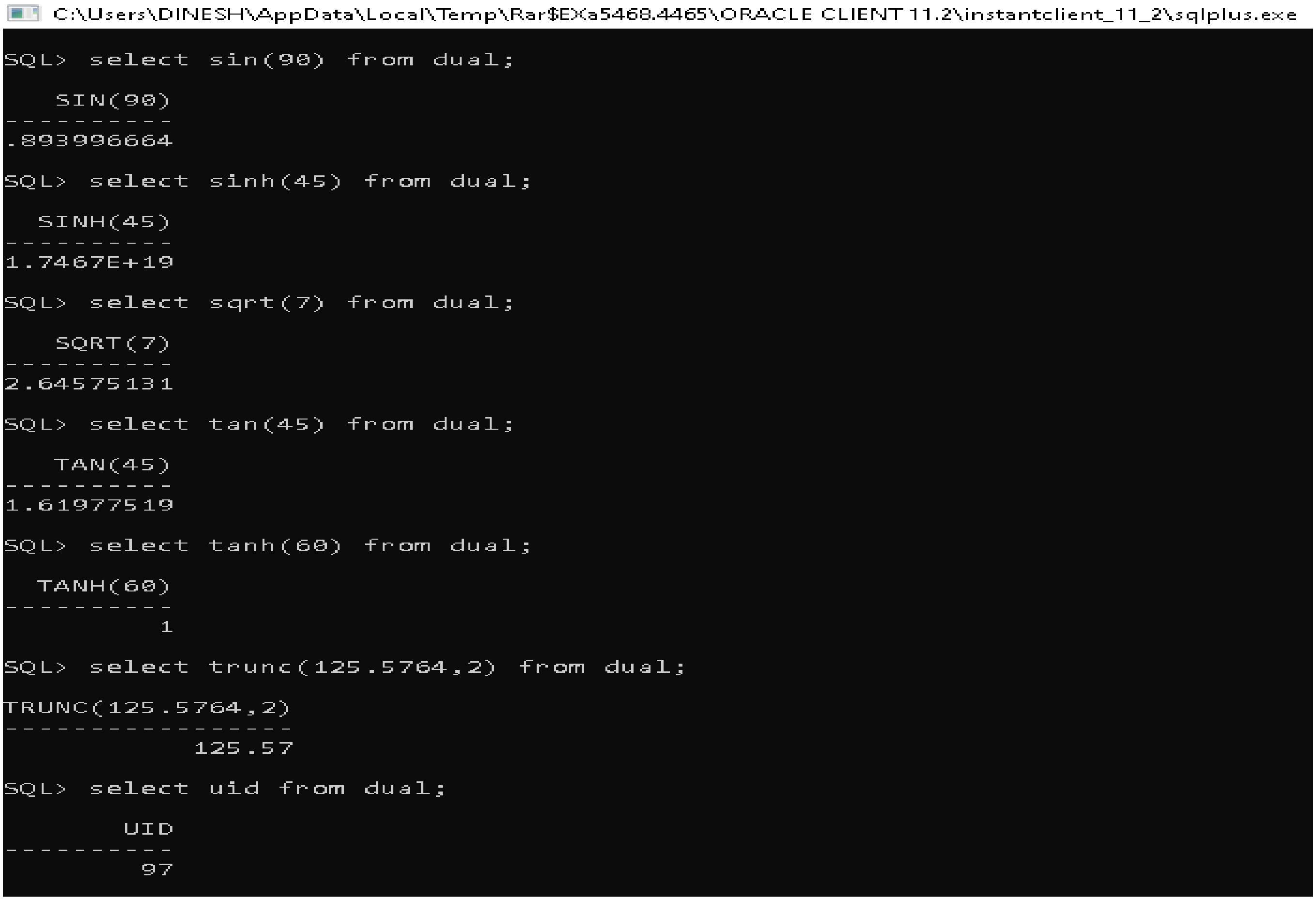
C:\Users\DINESH\AppData\Local\Temp\Rar$EXa5468.4465\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
SQL> select to_char(12345.5,'L099,999,99')from dual;

TO_CHAR(12345.5,'L099
---------------------
          $000,123,46

SQL> select to_number('123')from dual;

TO_NUMBER('123')
----------------
             123

SQL> select abs(-15) from dual;

  ABS(-15)
----------
        15

SQL> select ceil(33.645) from dual;

CEIL(33.645)
------------
          34

SQL>
SQL> select cos(180) from dual;

  COS(180)
----------
-.59846007

SQL>  select cosh(0) from dual;

   COSH(0)
----------
         1

SQL> select exp(2) from dual;

    EXP(2)
----------
 7.3890561
```



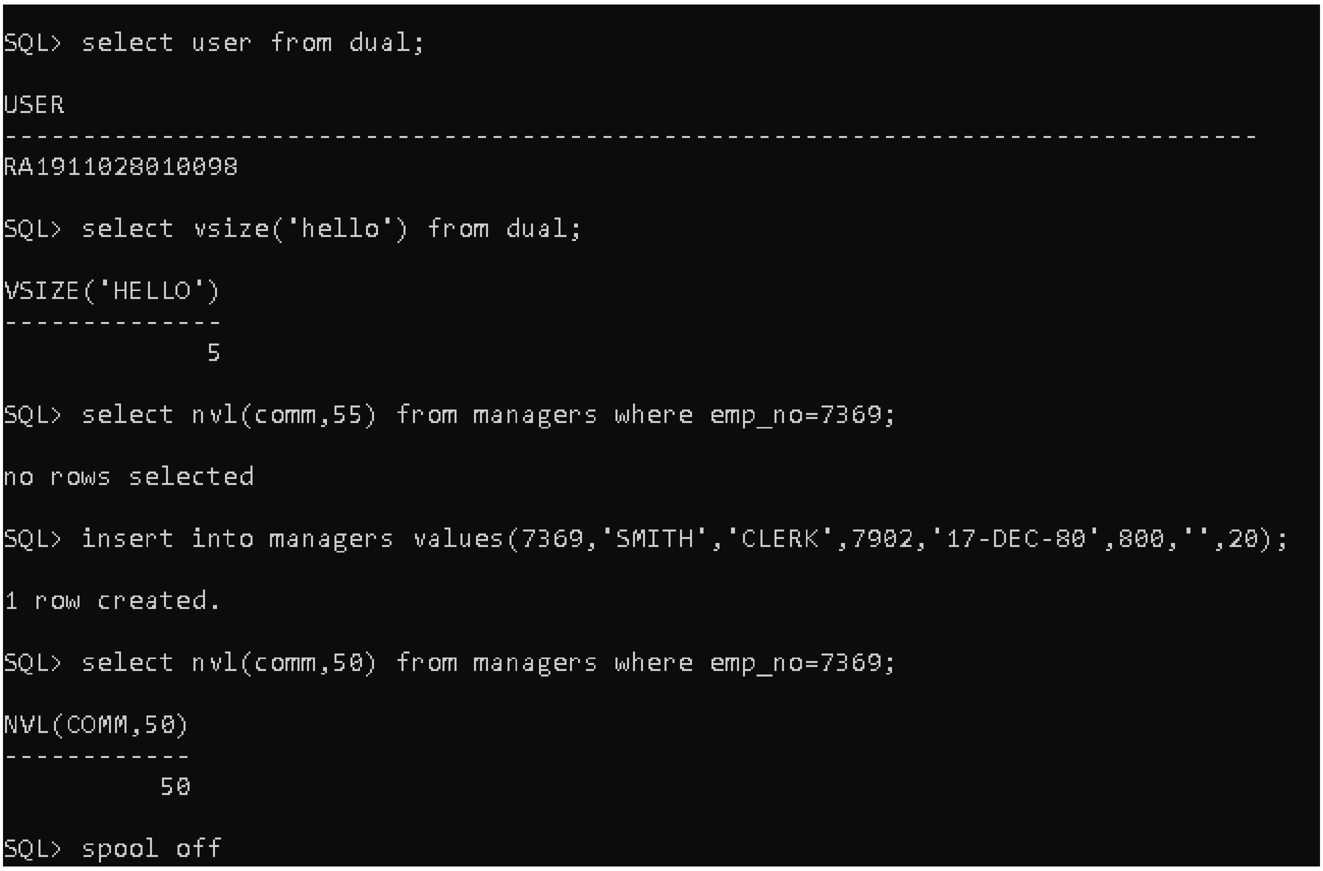
C:\Users\DINESH\AppData\Local\Temp\Rar$EXa5468.4465\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
SQL> select floor(100.2) from dual;

FLOOR(100.2)
------------
         100

SQL> select ln(5) from dual;

     LN(5)
----------
1.60943791

SQL> select log(2,64) from dual;

 LOG(2,64)
----------
         6

SQL> select mod(17,3) from dual;

 MOD(17,3)
----------
         2

SQL> select power(5,3) from dual;

POWER(5,3)
----------
       125

SQL> select round(125.67854,2) from dual;

ROUND(125.67854,2)
------------------
            125.68

SQL> select sin(-19) from dual;

  SIN(-19)
----------
-.14987721
```



C:\Users\DINESH\AppData\Local\Temp\Rar$EXa5468.4465\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe

```
SQL> select sin(90) from dual;

   SIN(90)
----------
.893996664

SQL> select sinh(45) from dual;

  SINH(45)
----------
1.7467E+19

SQL> select sqrt(7) from dual;

   SQRT(7)
----------
2.64575131

SQL> select tan(45) from dual;

   TAN(45)
----------
1.61977519

SQL> select tanh(60) from dual;

  TANH(60)
----------
         1

SQL> select trunc(125.5764,2) from dual;

TRUNC(125.5764,2)
-----------------
           125.57

SQL> select uid from dual;

       UID
----------
        97
```



```
SQL> select user from dual;

USER
--------------------------------------------------------------------------------
RA1911028010098

SQL> select vsize('hello') from dual;

VSIZE('HELLO')
--------------
             5

SQL> select nvl(comm,55) from managers where emp_no=7369;

no rows selected

SQL> insert into managers values(7369,'SMITH','CLERK',7902,'17-DEC-80',800,'',20);

1 row created.

SQL> select nvl(comm,50) from managers where emp_no=7369;

NVL(COMM,50)
------------
          50

SQL> spool off
```

Result:-

Successfully executed the commands related to sql functions.

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

Title of Experiment

AIM : To execute commands using the group functions.

SQL Command:

```
  SQL> CREATE TABLE EMP(EMPNO INT,ENAME VARCHAR(20),JOB CHAR(10), MGR
INT,HIREDATE DATE,SAL INT,COMM INT,DEPTNO INT);


 Table created.


 SQL> CREATE TABLE DEPT(DEPTNO INT,DNAME VARCHAR(20),LOC VARCHAR(20));


 Table created.


 SQL> INSERT INTO DEPT VALUES(10,'CSE','TECHPARK');


 1 row created.


 SQL> INSERT INTO DEPT VALUES(20,'ECE','MAIN BLOCK');


 1 row created.


 SQL> INSERT INTO DEPT VALUES(30,'IT','UB');


 1 row created.


 SQL> INSERT INTO DEPT VALUES(40,'MECH','KTR');


 1 row created.


 SQL> ALTER TABLE EMP ADD CONSTRAINT P_KEY PRIMARY KEY(EMPNO);
 Table altered.

 SQL> INSERT INTO EMP VALUES(1,'DineshReddy','MANAGER',98,'15-OCT-
2001',75000,250,1);

 1 row created.

 SQL> INSERT INTO EMP VALUES(2,'A','MANAGER',98,'15-NOV-
2003',58600,504,30);

 1 row created.

 SQL> INSERT INTO EMP VALUES(3,'B','TECH LEAD',99,'15-JAN-
2004',64600,246,20);

 1 row created.

 SQL> INSERT INTO EMP VALUES(4,'C','CONSULTANT',99,'15-JAN-
2004',86600,246,20);

 1 row created.

 SQL> INSERT INTO EMP VALUES(5,'D','CLERK',7,'12-JUL-
2005',19800,463,10);

 1 row created.

 SQL> SELECT COUNT(*) FROM EMP;

   COUNT(*)
 ----------
          5
```

```
SQL> SELECT COUNT(DISTINCT JOB) FROM EMP;

COUNT(DISTINCTJOB)
------------------
                 4

SQL> SELECT COUNT(COMM) FROM EMP WHERE COMM IS NOT NULL;

COUNT(COMM)
-----------
          5

SQL> SELECT COUNT(COMM) FROM EMP;

COUNT(COMM)
-----------
          5

SQL> SELECT COUNT(NVL(COMM,0)) FROM EMP;

COUNT(NVL(COMM,0))
------------------
                 5

SQL> SELECT SUM(SAL) FROM EMP;

  SUM(SAL)
----------
    304600
```

```
 SQL>  SELECT  MAX(SAL)  AS  MAXIMUM,MIN(SAL)  AS  MINIMUM,AVG(SAL)  AS
AVERAGE FROM EMP;

    MAXIMUM    MINIMUM    AVERAGE
 ---------- ---------- ----------
      86600      19800      60920

 SQL> SELECT COUNT(*) FROM EMP WHERE DEPTNO=30;

   COUNT(*)
 ----------
          1

 SQL> SELECT MAX(SAL) FROM EMP WHERE JOB='CLERK';

   MAX(SAL)
 ----------
      19800

 SQL> SELECT DEPTNO,COUNT(*) FROM EMP GROUP BY DEPTNO;

     DEPTNO   COUNT(*)
 ---------- ----------
          1          1
         30          1
         20          2
         10          1

 SQL>  SELECT  JOB,COUNT(*)  FROM  EMP  GROUP  BY  JOB  ORDER  BY  COUNT(*)
DESC;

 JOB            COUNT(*)
```

```
---------- ----------
MANAGER             2
TECH LEAD           1
CONSULTANT          1
CLERK               1
```

```
SQL>  SELECT  SUM(SAL),MAX(SAL),MIN(SAL),AVG(SAL)  FROM  EMP  ORDER  BY
JOB;

  SUM(SAL)   MAX(SAL)   MIN(SAL)   AVG(SAL)
---------- ---------- ---------- ----------
    304600      86600      19800      60920
```

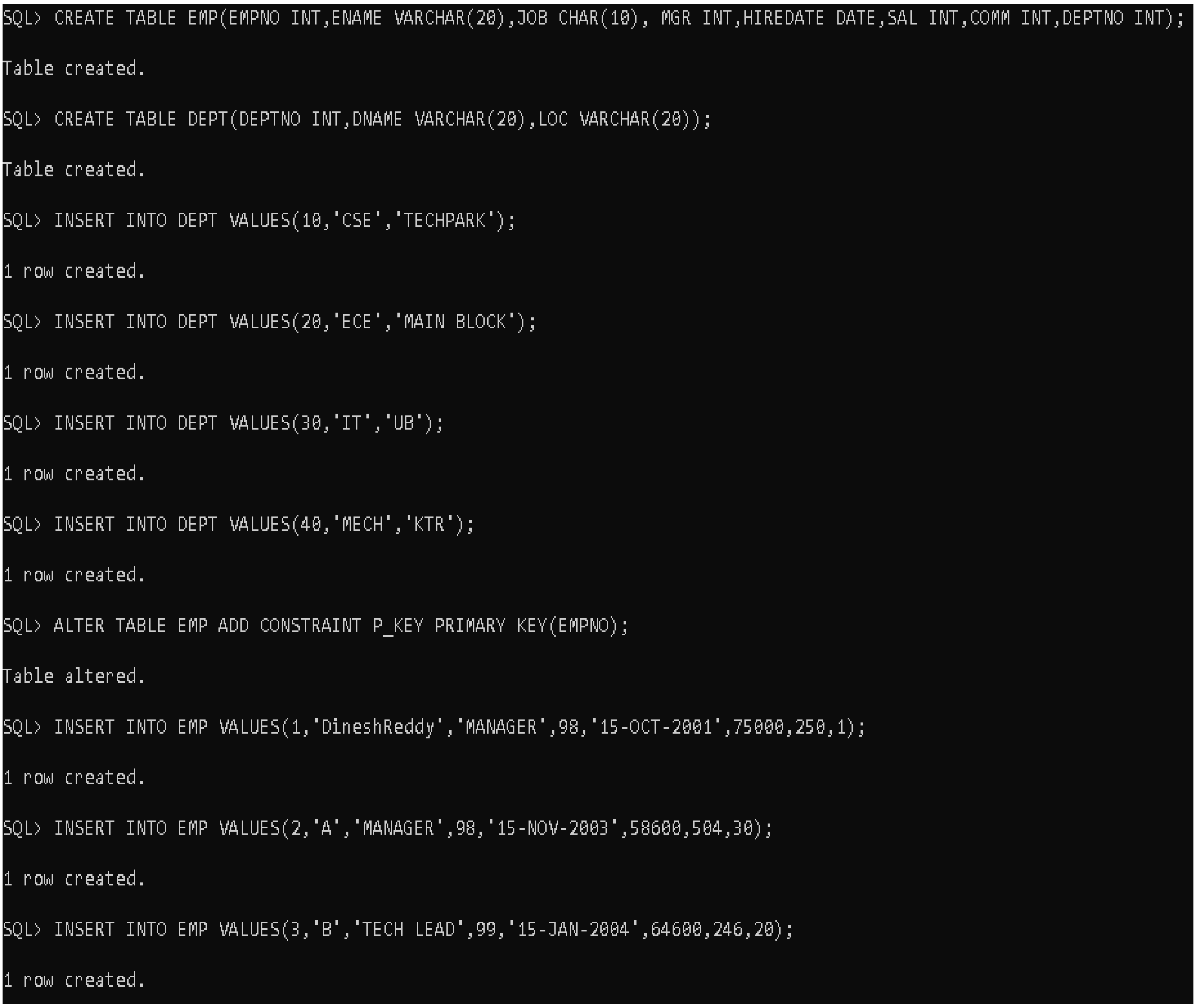
```
SQL> SELECT JOB,SUM(SAL),MAX(SAL),MIN(SAL),AVG(SAL) FROM EMP GROUP BY
JOB;

JOB          SUM(SAL)   MAX(SAL)   MIN(SAL)   AVG(SAL)
---------- ---------- ---------- ---------- ----------
CONSULTANT      86600      86600      86600      86600
CLERK           19800      19800      19800      19800
MANAGER        133600      75000      58600      66800
TECH LEAD       64600      64600      64600      64600
```

```
SQL> SELECT JOB,SUM(SAL),MAX(SAL),MIN(SAL),AVG(SAL) FROM EMP GROUP BY
JOB,DEPTNO HAVING DEPTNO=20 AND AVG(SAL)>1000;

JOB          SUM(SAL)   MAX(SAL)   MIN(SAL)   AVG(SAL)
---------- ---------- ---------- ---------- ----------
TECH LEAD       64600      64600      64600      64600
CONSULTANT      86600      86600      86600      86600
```

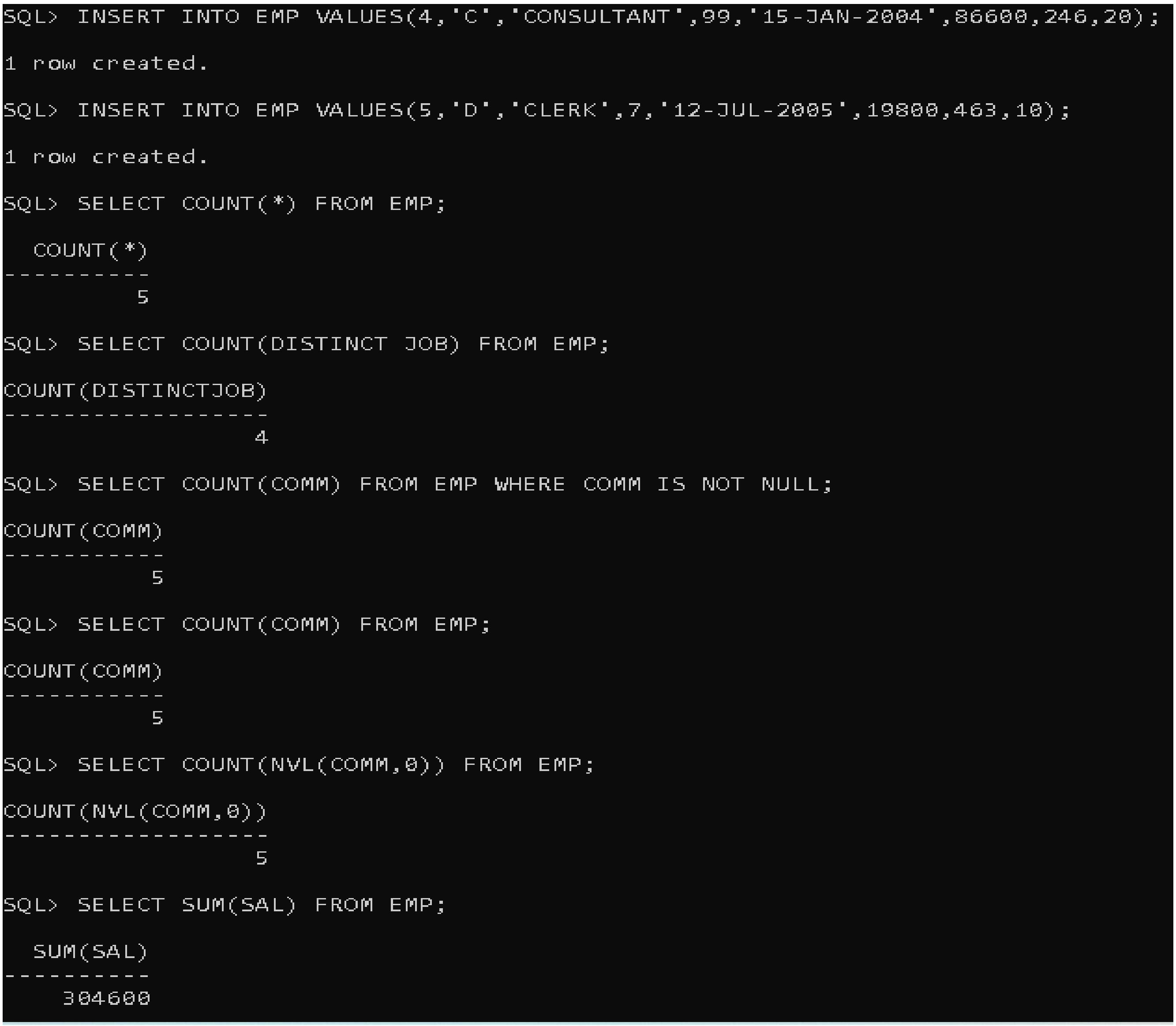
```
SQL>  SELECT JOB,SUM(SAL) FROM EMP GROUP BY JOB HAVING JOB NOT LIKE
'PRESIDENT' AND SUM(SAL)>5000;
```

```
 JOB          SUM(SAL)
 ---------- ----------
 CONSULTANT      86600
 CLERK           19800
 MANAGER        133600
 TECH LEAD       64600

 SQL>  SELECT  JOB,COUNT(*),AVG(SAL)  FROM  EMP  GROUP  BY  JOB  HAVING
COUNT(*)>=2;

 JOB          COUNT(*)   AVG(SAL)
 ---------- ---------- ----------
 MANAGER             2      66800

 SQL> spool off
```

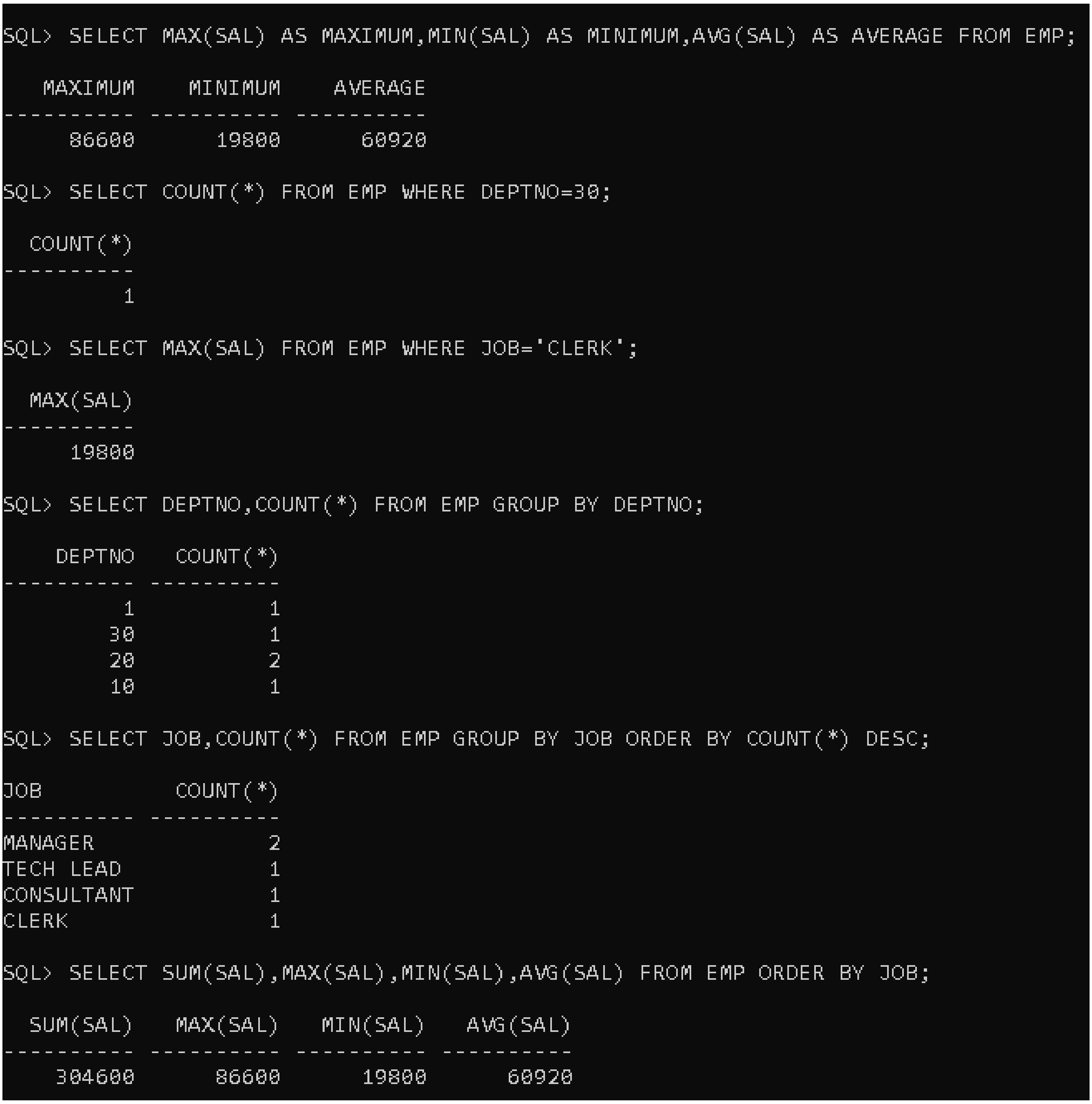
Output:-



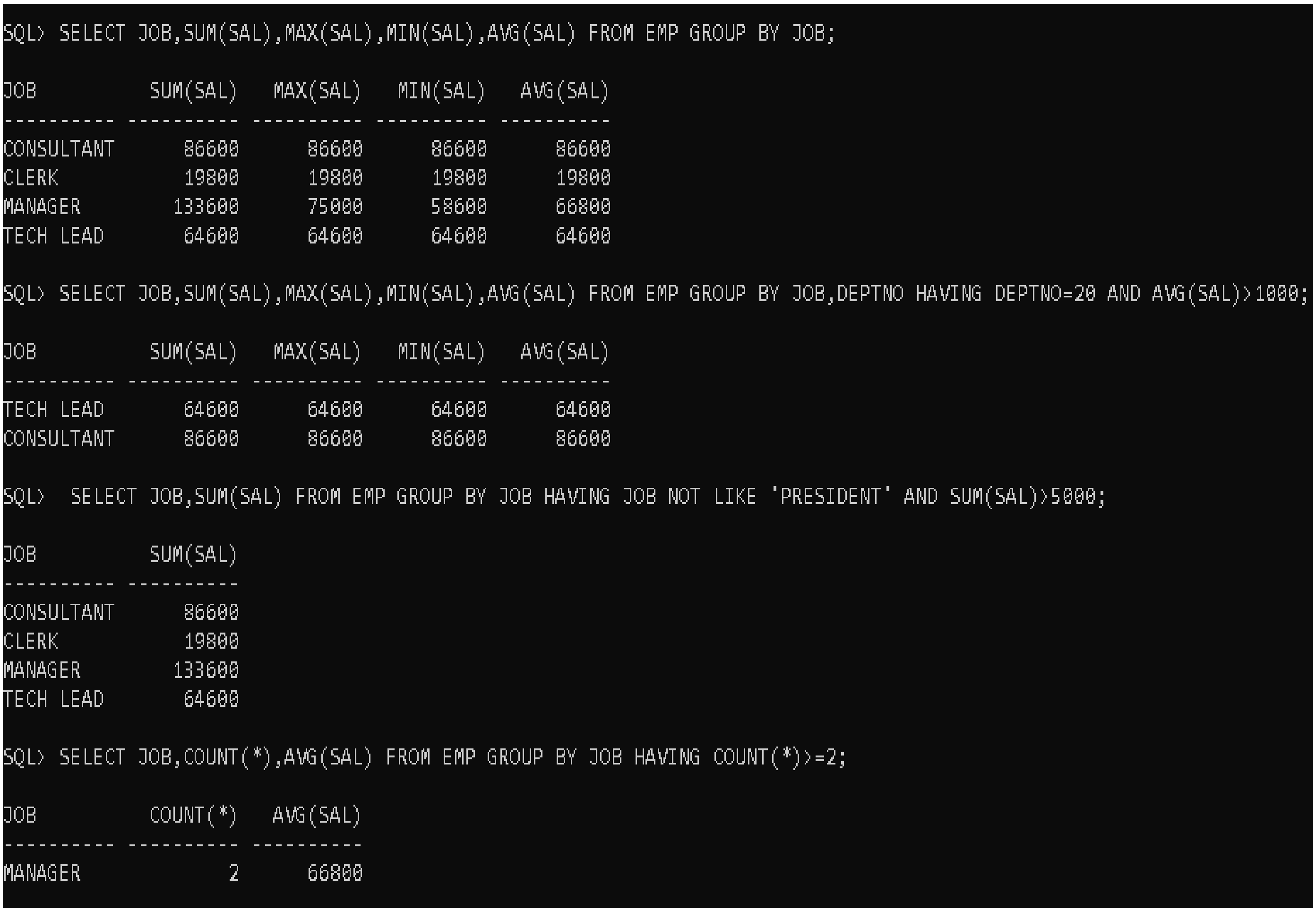
```
SQL> CREATE TABLE EMP(EMPNO INT,ENAME VARCHAR(20),JOB CHAR(10), MGR INT,HIREDATE DATE,SAL INT,COMM INT,DEPTNO INT);

Table created.

SQL> CREATE TABLE DEPT(DEPTNO INT,DNAME VARCHAR(20),LOC VARCHAR(20));

Table created.

SQL> INSERT INTO DEPT VALUES(10,'CSE','TECHPARK');

1 row created.

SQL> INSERT INTO DEPT VALUES(20,'ECE','MAIN BLOCK');

1 row created.

SQL> INSERT INTO DEPT VALUES(30,'IT','UB');

1 row created.

SQL> INSERT INTO DEPT VALUES(40,'MECH','KTR');

1 row created.

SQL> ALTER TABLE EMP ADD CONSTRAINT P_KEY PRIMARY KEY(EMPNO);

Table altered.

SQL> INSERT INTO EMP VALUES(1,'DineshReddy','MANAGER',98,'15-OCT-2001',75000,250,1);

1 row created.

SQL> INSERT INTO EMP VALUES(2,'A','MANAGER',98,'15-NOV-2003',58600,504,30);

1 row created.

SQL> INSERT INTO EMP VALUES(3,'B','TECH LEAD',99,'15-JAN-2004',64600,246,20);

1 row created.
```



```
SQL> INSERT INTO EMP VALUES(4,'C','CONSULTANT',99,'15-JAN-2004',86600,246,20);

1 row created.

SQL> INSERT INTO EMP VALUES(5,'D','CLERK',7,'12-JUL-2005',19800,463,10);

1 row created.

SQL> SELECT COUNT(*) FROM EMP;

  COUNT(*)
----------
         5

SQL> SELECT COUNT(DISTINCT JOB) FROM EMP;

COUNT(DISTINCTJOB)
------------------
                 4

SQL> SELECT COUNT(COMM) FROM EMP WHERE COMM IS NOT NULL;

COUNT(COMM)
-----------
          5

SQL> SELECT COUNT(COMM) FROM EMP;

COUNT(COMM)
----------
          5

SQL> SELECT COUNT(NVL(COMM,0)) FROM EMP;

COUNT(NVL(COMM,0))
------------------
                 5

SQL> SELECT SUM(SAL) FROM EMP;

  SUM(SAL)
----------
    304600
```



```
SQL> SELECT MAX(SAL) AS MAXIMUM,MIN(SAL) AS MINIMUM,AVG(SAL) AS AVERAGE FROM EMP;

   MAXIMUM    MINIMUM    AVERAGE
---------- ---------- ----------
     86600      19800      60920

SQL> SELECT COUNT(*) FROM EMP WHERE DEPTNO=30;

  COUNT(*)
----------
         1

SQL> SELECT MAX(SAL) FROM EMP WHERE JOB='CLERK';

  MAX(SAL)
----------
     19800

SQL> SELECT DEPTNO,COUNT(*) FROM EMP GROUP BY DEPTNO;

    DEPTNO   COUNT(*)
---------- ----------
         1          1
        30          1
        20          2
        10          1

SQL> SELECT JOB,COUNT(*) FROM EMP GROUP BY JOB ORDER BY COUNT(*) DESC;

JOB          COUNT(*)
---------- ----------
MANAGER             2
TECH LEAD           1
CONSULTANT          1
CLERK               1

SQL> SELECT SUM(SAL),MAX(SAL),MIN(SAL),AVG(SAL) FROM EMP ORDER BY JOB;

  SUM(SAL)   MAX(SAL)   MIN(SAL)   AVG(SAL)
---------- ---------- ---------- ----------
    304600      86600      19800      60920
```



```
SQL> SELECT JOB,SUM(SAL),MAX(SAL),MIN(SAL),AVG(SAL) FROM EMP GROUP BY JOB;

JOB          SUM(SAL)   MAX(SAL)   MIN(SAL)   AVG(SAL)
---------- ---------- ---------- ---------- ----------
CONSULTANT      86600      86600      86600      86600
CLERK           19800      19800      19800      19800
MANAGER        133600      75000      58600      66800
TECH LEAD       64600      64600      64600      64600

SQL> SELECT JOB,SUM(SAL),MAX(SAL),MIN(SAL),AVG(SAL) FROM EMP GROUP BY JOB,DEPTNO HAVING DEPTNO=20 AND AVG(SAL)>1000;

JOB          SUM(SAL)   MAX(SAL)   MIN(SAL)   AVG(SAL)
---------- ---------- ---------- ---------- ----------
TECH LEAD       64600      64600      64600      64600
CONSULTANT      86600      86600      86600      86600

SQL>  SELECT JOB,SUM(SAL) FROM EMP GROUP BY JOB HAVING JOB NOT LIKE 'PRESIDENT' AND SUM(SAL)>5000;

JOB          SUM(SAL)
---------- ----------
CONSULTANT      86600
CLERK           19800
MANAGER        133600
TECH LEAD       64600

SQL> SELECT JOB,COUNT(*),AVG(SAL) FROM EMP GROUP BY JOB HAVING COUNT(*)>=2;

JOB          COUNT(*)   AVG(SAL)
---------- ---------- ----------
MANAGER             2      66800
```

Result:-

Successfully executed the commands related to group functions.

RA1911028

Database Manageme

-18CSC303J

- Computer Scienc

And Engineeri

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

LEARN · LEAP · LEAD

ADVANCED SELECT STATEMENTS

AIM:

TO WRITE SQL QUERIES TO EXECUTE DIFFERENT ADVANCED SELECT STATEMENTS

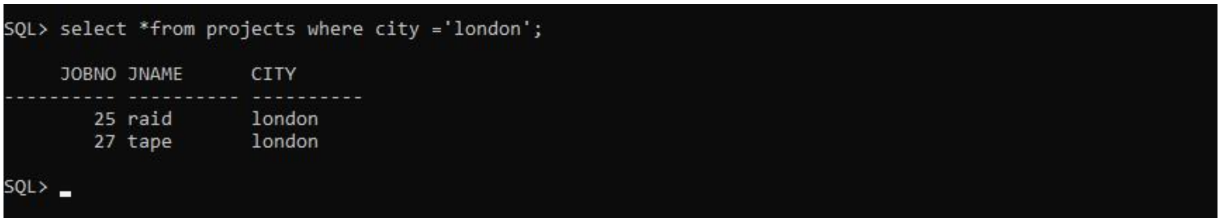
SQL COMMANDS:

QUESTIONS Q1 TO Q18 PERTAIN TO A DATABASE WITH THE FOLLOWING TABLES.
SUPPLIERS - S **(SUPPLYNO, NAME, STATUS, CITY)**
PARTS - P **(PARTNO, PNAME, COLOUR, WEIGHT,** CITY) PROJECTS - J **(JOBNO, JNAME, CITY)**

SHIPMENT - SPJ **(SUPPLYNO, PARTNO, JOBNO, QTY)**

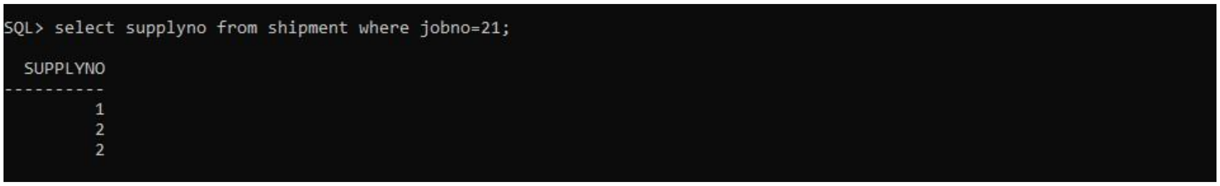
THE SIGNIFICANCE OF AN SPJ RECORD IS THAT THE SPECIFIED SUPPLIER SUPPLIES THE SPECIFIED PART TO THE SPECIFIED PROJECT IN THE SPECIFIED QUANTITY (AND THE COMBINATION SUPPLYNO-PARTNO- JOBNO UNIQUELY IDENTIFIES SUCH A RECORD).

Q1) GET FULL DETAILS OF ALL PROJECTS IN LONDON.
SQL> SELECT *FROM PROJECTS WHERE CITY ='LONDON';



```
SQL> select *from projects where city ='london';

     JOBNO JNAME      CITY
---------- ---------- ----------
        25 raid       london
        27 tape       london

SQL>
```

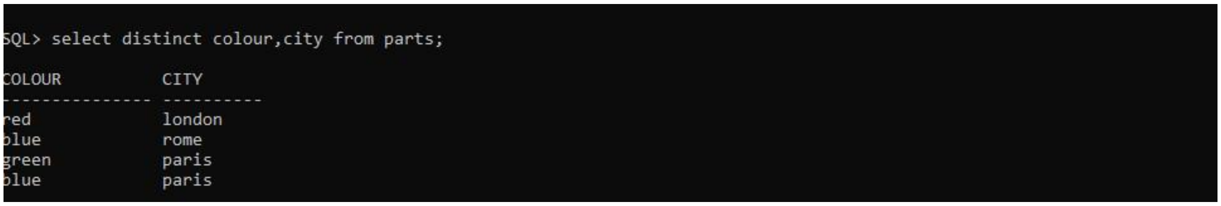
Q2) GET SUPPLYNO FOR SUPPLIERS WHO SUPPLY PROJECT J1.
SQL> **SELECT SUPPLYNO FROM SHIPMENT WHERE JOBNO=21;**



```
SQL> select supplyno from shipment where jobno=21;

  SUPPLYNO
----------
         1
         2
         2
```

Q3) GET ALL PART-COLOR/PART-CITY COMBINATIONS.

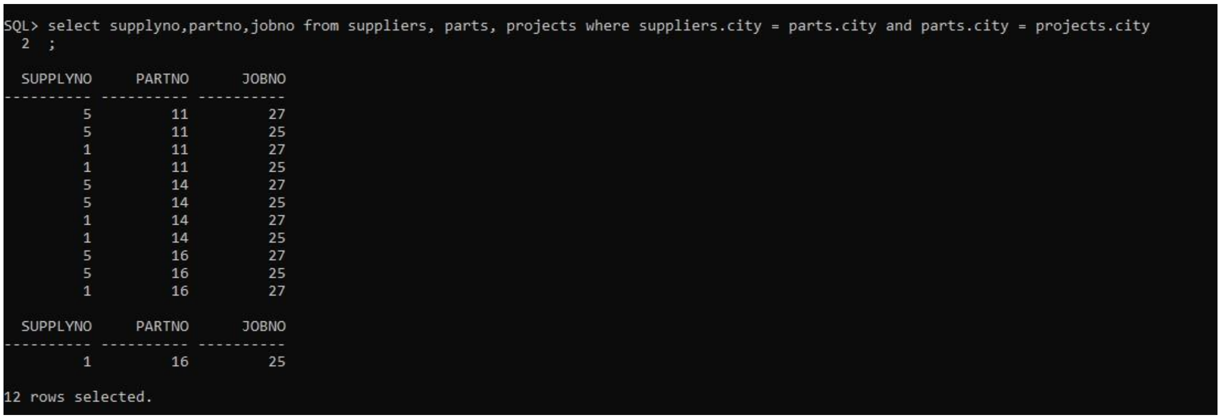
SQL> **SELECT DISTINCT COLOUR,CITY FROM PARTS;**



```
SQL> select distinct colour,city from parts;

COLOUR         CITY
-------------- ----------
red            london
blue           rome
green          paris
blue           paris
```

Q4) GET ALL SUPPLYNO/PARTNO/JOBNO TRIPLES SUCH THAT ALL ARE CO-LOCATED.

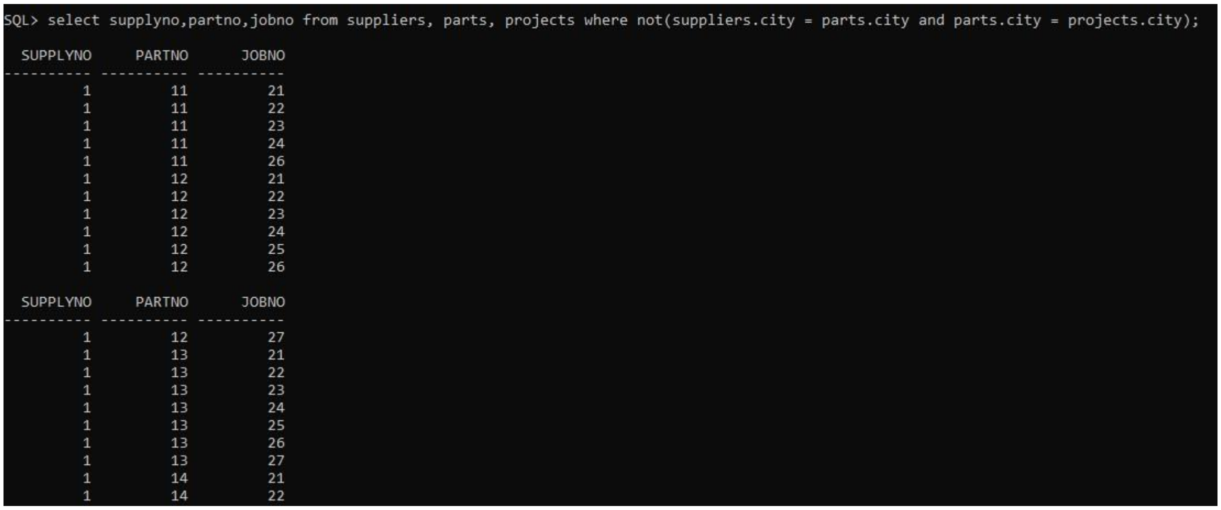
SQL> **SELECT SUPPLYNO,PARTNO,JOBNO FROM SUPPLIERS, PARTS, PROJECTS WHERE SUPPLIERS.CITY = PARTS.CITY AND PARTS.CITY = PROJECTS.CITY;**



```
SQL> select supplyno,partno,jobno from suppliers, parts, projects where suppliers.city = parts.city and parts.city = projects.city
  2  ;

  SUPPLYNO     PARTNO      JOBNO
---------- ---------- ----------
         5         11         27
         5         11         25
         1         11         27
         1         11         25
         5         14         27
         5         14         25
         1         14         27
         1         14         25
         5         16         27
         5         16         25
         1         16         27

  SUPPLYNO     PARTNO      JOBNO
---------- ---------- ----------
         1         16         25

12 rows selected.
```

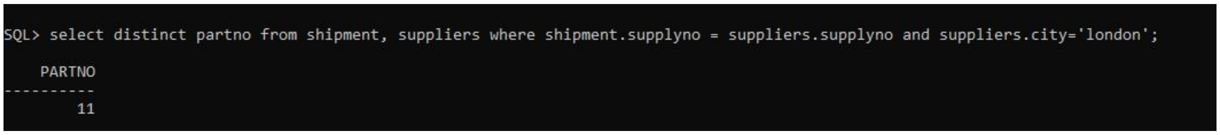
Q5) GET AL SUPPLYNO, PARTNO, JOBNO TRIPLES SUCH THAT THEY ARE NOT ALL COLOCATED.

SQL> SELECT SUPPLYNO,PARTNO,JOBNO FROM SUPPLIERS, PARTS, PROJECTS WHERE NOT(SUPPLIERS.CITY = PARTS.CITY AND PARTS.CITY = PROJECTS.CITY);



```
SQL> select supplyno,partno,jobno from suppliers, parts, projects where not(suppliers.city = parts.city and parts.city = projects.city);

  SUPPLYNO     PARTNO      JOBNO
---------- ---------- ----------
         1         11         21
         1         11         22
         1         11         23
         1         11         24
         1         11         26
         1         12         21
         1         12         22
         1         12         23
         1         12         24
         1         12         25
         1         12         26

  SUPPLYNO     PARTNO      JOBNO
---------- ---------- ----------
         1         12         27
         1         13         21
         1         13         22
         1         13         23
         1         13         24
         1         13         25
         1         13         26
         1         13         27
         1         14         21
         1         14         22
```

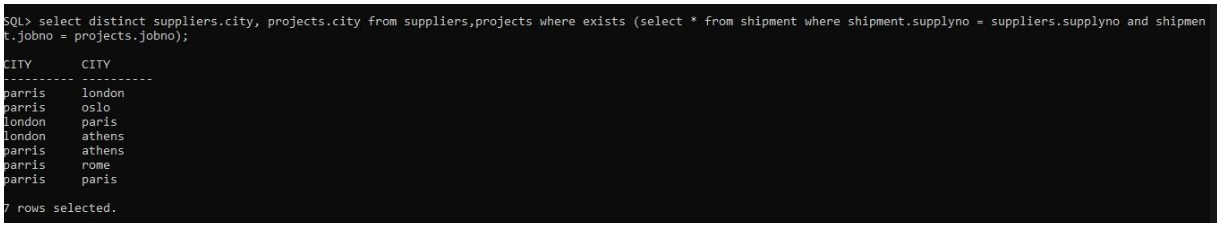
Q6) GET PARTNO FOR PARTS SUPPLIED BY A SUPPLIER IN LONDON.
SQL> **SELECT DISTINCT PARTNO FROM SHIPMENT, SUPPLIERS WHERE SHIPMENT.SUPPLYNO = SUPPLIERS.SUPPLYNO AND SUPPLIERS.CITY='LONDON';**



```
SQL> select distinct partno from shipment, suppliers where shipment.supplyno = suppliers.supplyno and suppliers.city='london';

    PARTNO
----------
        11
```

Q7) GET ALL PAIRS OF CITIES SUCH THAT A SUPPLIER IN THE FIRST CITY SUPPLIES TO A PROJECT IN THE SECOND CITY.

SQL> **SELECT DISTINCT SUPPLIERS.CITY, PROJECTS.CITY FROM SUPPLIERS,PROJECTS WHERE EXISTS (SELECT * FROM SHIPMENT WHERE SHIPMENT.SUPPLYNO = SUPPLIERS.SUPPLYNO AND SHIPMENT.JOBNO = PROJECTS.JOBNO);**



```
SQL> select distinct suppliers.city, projects.city from suppliers,projects where exists (select * from shipment where shipment.supplyno = suppliers.supplyno and shipmen
t.jobno = projects.jobno);

CITY       CITY
---------- ----------
parris     london
parris     oslo
london     paris
london     athens
parris     athens
parris     rome
parris     paris

7 rows selected.
```

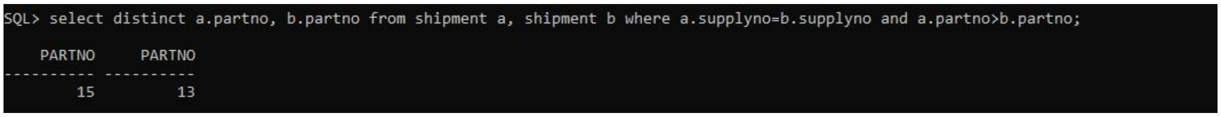
Q8) GET JOBNO FOR PROJECTS SUPPLIED BY AT LEAST ONE SUPPLIER NOT IN THE SAME CITY.

SQL> **SELECT DISTINCT SHIPMENT.JOBNO FROM SHIPMENT, PROJECTS, SUPPLIERS WHERE SHIPMENT.JOBNO=PROJECTS.JOBNO AND SHIPMENT.SUPPLYNO = SUPPLIERS.SUPPLYNO AND**

PROJECTS.CITY<>SUPPLIERS.CITY;

Q9) GET ALL PAIRS OF PART NUMBERS SUCH THAT SOME SUPPLIER SUPPLIES BOTH THE INDICATED PARTS.

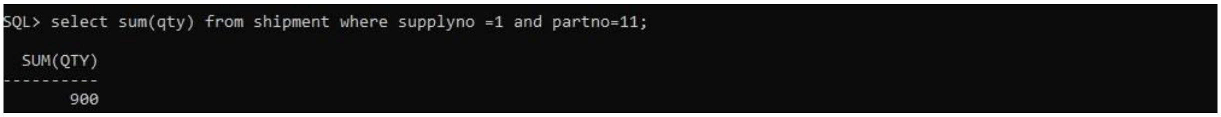
SQL> **SELECT DISTINCT A.PARTNO, B.PARTNO FROM SHIPMENT A, SHIPMENT B WHERE A.SUPPLYNO=B.SUPPLYNO AND A.PARTNO>B.PARTNO;**



```
SQL> select distinct a.partno, b.partno from shipment a, shipment b where a.supplyno=b.supplyno and a.partno>b.partno;

    PARTNO     PARTNO
---------- ----------
        15         13
```

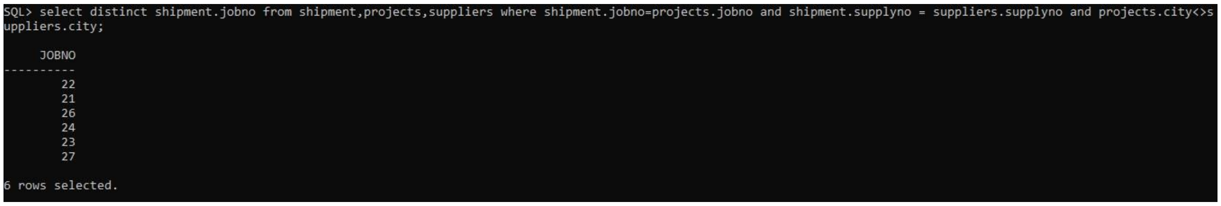
Q10) GET THE TOTAL QUANTITY OF PART P1 SUPPLIED BY S1.

SQL> **SELECT SUM(QTY) FROM SHIPMENT WHERE SUPPLYNO =1 AND PARTNO=11;**



```
SQL> select sum(qty) from shipment where supplyno =1 and partno=11;

  SUM(QTY)
----------
       900
```

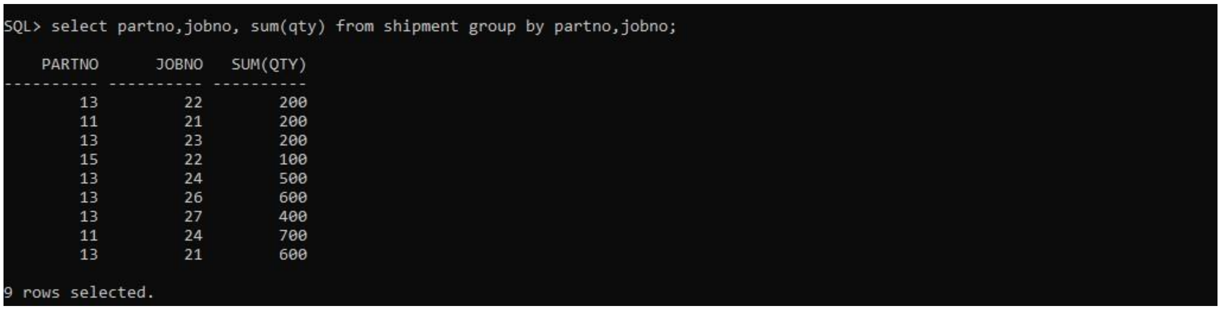
Q11) FOR EACH PART SUPPLIED TO A PROJECT, GET THE PARTNO, JOBNO AND



```
SQL> select distinct shipment.jobno from shipment,projects,suppliers where shipment.jobno=projects.jobno and shipment.supplyno = suppliers.supplyno and projects.city<>s
uppliers.city;

     JOBNO
----------
        22
        21
        26
        24
        23
        27

6 rows selected.
```

CORRESPONDING TOTAL QUANTITY.

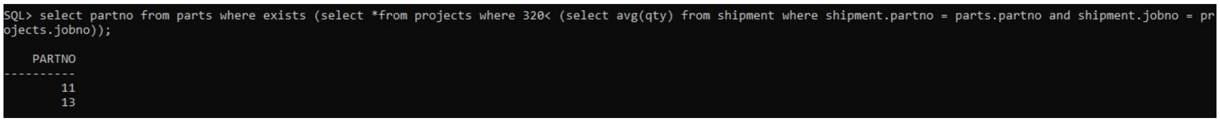
SQL> **SELECT PARTNO,JOBNO,
SUM(QTY) FROM SHIPMENT
GROUP BY PARTNO,JOBNO;**



```
SQL> select partno,jobno, sum(qty) from shipment group by partno,jobno;

    PARTNO      JOBNO   SUM(QTY)
---------- ---------- ----------
        13         22        200
        11         21        200
        13         23        200
        15         22        100
        13         24        500
        13         26        600
        13         27        400
        11         24        700
        13         21        600

9 rows selected.
```

Q12) GET PARTNO OF PARTS SUPPLIED TO SOME PROJECT IN AN AVERAGE QUANTITY > 320.

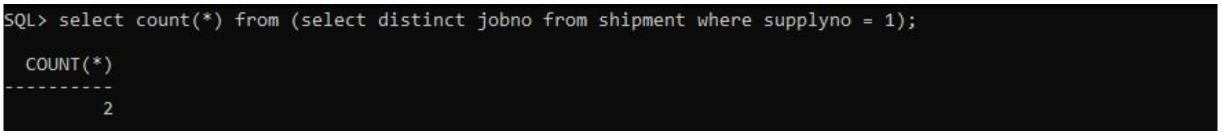
SQL> **SELECT PARTNO FROM PARTS WHERE EXISTS (SELECT *FROM PROJECTS WHERE 320< (SELECT AVG(QTY) FROM SHIPMENT WHERE SHIPMENT.PARTNO = PARTS.PARTNO AND SHIPMENT.JOBNO = PROJECTS.JOBNO));**



```
SQL> select partno from parts where exists (select *from projects where 320< (select avg(qty) from shipment where shipment.partno = parts.partno and shipment.jobno = pr
ojects.jobno));

    PARTNO
----------
        11
        13
```

Q13) GET PROJECT NAMES FOR PROJECTS SUPPLIED BY SUPPLIER S1.

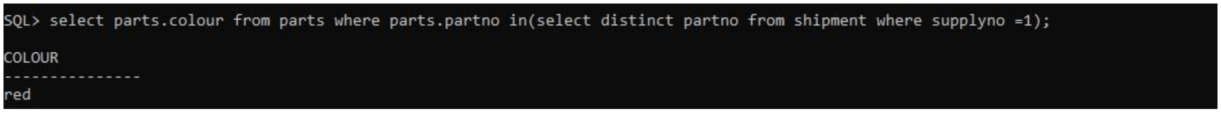
SQL> **SELECT COUNT(*) FROM (SELECT DISTINCT JOBNO FROM SHIPMENT WHERE SUPPLYNO = 1);**



```
SQL> select count(*) from (select distinct jobno from shipment where supplyno = 1);

  COUNT(*)
----------
         2
```

Q14) GET COLORS OF PARTS SUPPLIED BY S1.

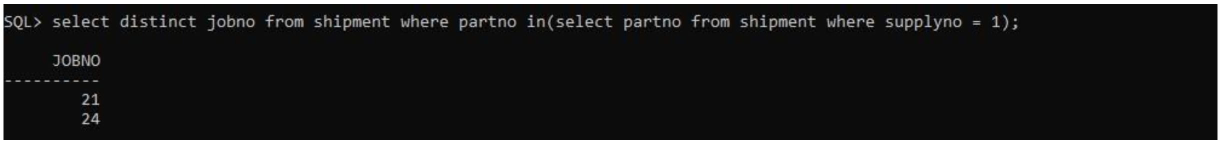
SQL> SELECT PARTS.COLOUR FROM PARTS WHERE PARTS.PARTNO IN(SELECT DISTINCT PARTNO FROM SHIPMENT WHERE SUPPLYNO =1);



```
SQL> select parts.colour from parts where parts.partno in(select distinct partno from shipment where supplyno =1);

COLOUR
---------------
red
```

Q15) GET JOBNO FOR PROJECTS USING AT LEAST ONE PART AVAILABLE FROM SUPPLIER S1.

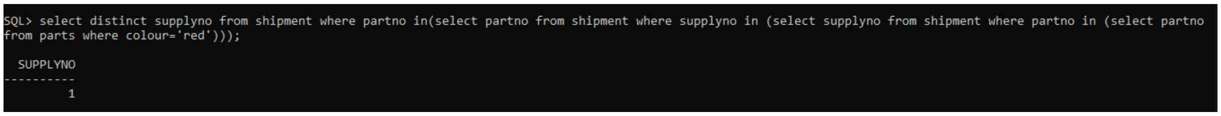
SQL> SELECT DISTINCT JOBNO FROM SHIPMENT WHERE PARTNO IN(SELECT PARTNO FROM SHIPMENT WHERE SUPPLYNO = 1);



```
SQL> select distinct jobno from shipment where partno in(select partno from shipment where supplyno = 1);

     JOBNO
----------
        21
        24
```

Q16) GET SUPPLIER NUMBERS FOR SUPPLIERS SUPPLYING AT LEAST ONE PART SUPPLIED BY AT LEAST ONE SUPPLIER WHO SUPPLIES AT LEAST ONE RED PART.

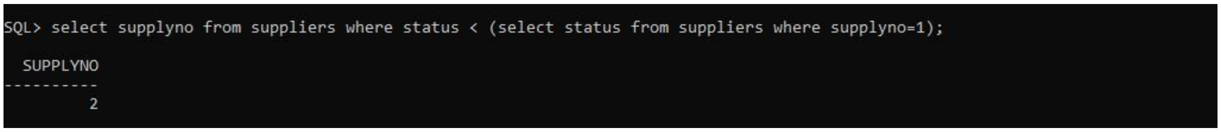
SQL> SELECT DISTINCT SUPPLYNO FROM SHIPMENT WHERE PARTNO IN(SELECT PARTNO FROM SHIPMENT WHERE SUPPLYNO IN (SELECT SUPPLYNO FROM SHIPMENT WHERE PARTNO IN (SELECT PARTNO FROM PARTS WHERE COLOUR='RED'));



```
SQL> select distinct supplyno from shipment where partno in(select partno from shipment where supplyno in (select supplyno from shipment where partno in (select partno
from parts where colour='red')));

  SUPPLYNO
----------
         1
```

Q17) GET SUPPLIER NUMBERS FOR SUPPLIERS WITH A STATUS LOWER THAN THAT OF SUPPLIER S1.

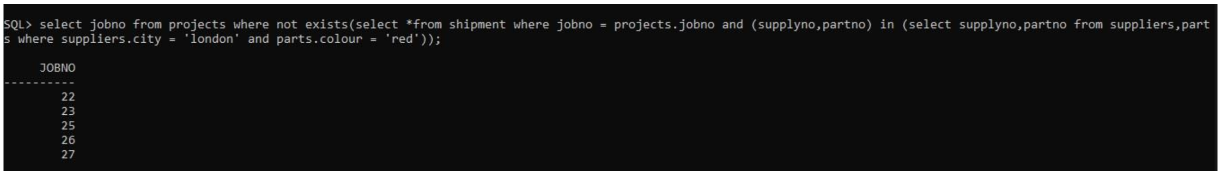
SQL> SELECT SUPPLYNO FROM SUPPLIERS WHERE STATUS < (SELECT STATUS FROM SUPPLIERS WHERE SUPPLYNO=1);



```
SQL> select supplyno from suppliers where status < (select status from suppliers where supplyno=1);

  SUPPLYNO
----------
         2
```

Q18) GET PROJECT NUMBERS FOR PROJECTS NOT SUPPLIED WITH ANY RED PART BY ANY LONDON SUPPLIER.

SQL> SELECT JOBNO FROM PROJECTS WHERE NOT EXISTS(SELECT *FROM SHIPMENT WHERE JOBNO = PROJECTS.JOBNO AND (SUPPLYNO,PARTNO) IN (SELECT SUPPLYNO,PARTNO FROM SUPPLIERS,PARTS WHERE SUPPLIERS.CITY = 'LONDON' AND PARTS.COLOUR = 'RED'));



```
SQL> select jobno from projects where not exists(select *from shipment where jobno = projects.jobno and (supplyno,partno) in (select supplyno,partno from suppliers,part
s where suppliers.city = 'london' and parts.colour = 'red'));

     JOBNO
----------
        22
        23
        25
        26
        27
```

Result:

HENCE ADVANCED SELECT STATEMENTS ARE EXECUTED SUCCESSFULLY.

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

Title of Experiment

AIM : To execute commands using the sql queries.

SQL Command:

```
 SQL> create table parts1(pno int,pname varchar(255),qoh int,price int,olevel int);


 Table created.


 SQL> create table customers1(cno int,cname varchar(255),street varchar(255),zip varchar(255),phone int);


 Table created.


 SQL> create table employees1(eno int,ename varchar(255),zip varchar(255),hdate date);


 Table created.


 SQL> create table zip_code(zip varchar(255),city varchar(255));


 Table created.


 SQL> create table orders1(ono int,cno int,eno int,received date,shipped date);


 Table created.


 SQL> create table odetails(ono int,pno int,qty int);
```

```
Table created.

SQL> alter table parts1 add primary key(pno);

Table altered.

SQL> alter table customers1 add primary key(cno);

Table altered.

SQL> alter table employees1 add primary key(eno);

Table altered.

SQL> alter table orders1 add primary key(ono);

Table altered.

SQL> alter table orders1 add foreign key(cno) references customers1;

Table altered.

SQL> alter table orders1 add foreign key(eno) references employees1;

Table altered.

SQL> alter table odetails add foreign key(ono) references orders1;

Table altered.
```

```
SQL> alter table odetails add foreign key(pno) references parts1;

Table altered.

SQL> insert into parts1 values(1,'Monitor', 100,35000,10);

1 row created.

SQL> insert into parts1 values(2,'CPU', 200,5000,10);

1 row created.

SQL> insert into customers1 values(1, 'raj', 'poststreet', 'zip1',
9841237896);

1 row created.

SQL> insert into customers1 values(2, 'dinesh', 'mainstreet', 'zip2',
8688802604);

1 row created.

SQL> insert into employees1 values(1, 'd', 'zip1', '10-march-2022');

1 row created.

SQL> insert into employees1 values(2, 'meter', 'zip2', '10-january-
2022');

1 row created.
```

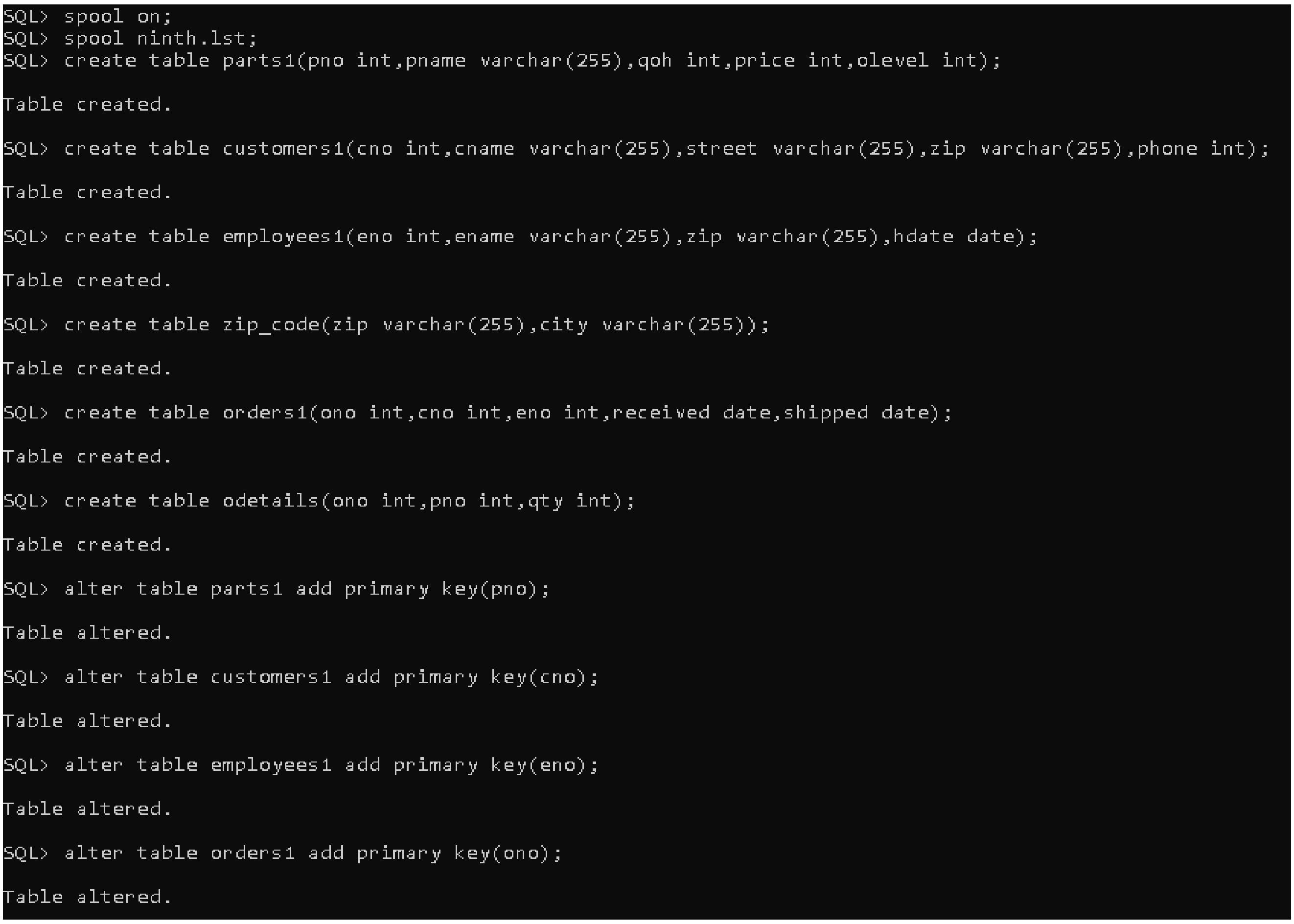
```
 SQL>  insert into zip_code values('zip1', 'london');

 1 row created.

 SQL> insert into zip_code values('zip2', 'paris');

 1 row created.

 SQL>  insert  into  orders1  values(1,2,1,'10-march-2005','20-march-
2005');

 1 row created.

 SQL>  insert  into  orders1  values(2,2,2,'30-april-2005','30-june-
2005');

 1 row created.

 SQL> insert into orders1 values(3,1,2,'27-june-2008','30-june-2008');

 1 row created.

 SQL> insert into odetails values(1,1,10000);

 1 row created.

 SQL> insert into odetails values(1,2,10000);

 1 row created.
 SQL> insert into odetails values(2,1,10000);

 1 row created.

 SQL> insert into odetails values(2,2,30000);

 1 row created.

 SQL> select customers1.cname from customers1, orders1, odetails,
parts1 where customers1.cno=orders1.cno and orders1.ono=odetails.ono
and odetails.pno=parts1.pno and parts1.price>30000 group by cname
having count(parts1.pno)>=1;

 CNAME
 ---------------------------------------------------------------------
-----------
 dinesh

 SQL> select customers1.cname from customers1, orders1, odetails,
parts1 where customers1.cno=orders1.cno and orders1.ono=odetails.ono
and odetails.pno=parts1.pno and parts1.price<20000;

 CNAME
 ---------------------------------------------------------------------
-----------
 dinesh
 dinesh

 SQL> select distinct customers1.cname from customers1, orders1,
odetails, parts1 where customers1.cno=orders1.cno and
orders1.ono=odetails.ono and odetails.pno=parts1.pno and
parts1.price<20000;
```

```
 CNAME
 ----------------------------------------------------------------------
-----------
 dinesh


 SQL> select customers1.cname from customers1, employees1,orders1
where customers1.cno=orders1.cno and orders1.eno=employees1.eno and
customers1.zip=employees1.zip;


 CNAME
 ----------------------------------------------------------------------
-----------
 dinesh


 SQL> select parts1.pno,parts1.pname,odetails.qty from parts1,
odetails where parts1.pno=odetails.pno order by qty desc;


        PNO
 ----------
 PNAME
 ----------------------------------------------------------------------
-----------
        QTY
 ----------
          2
 CPU
      30000


          1
 Monitor
      10000
```

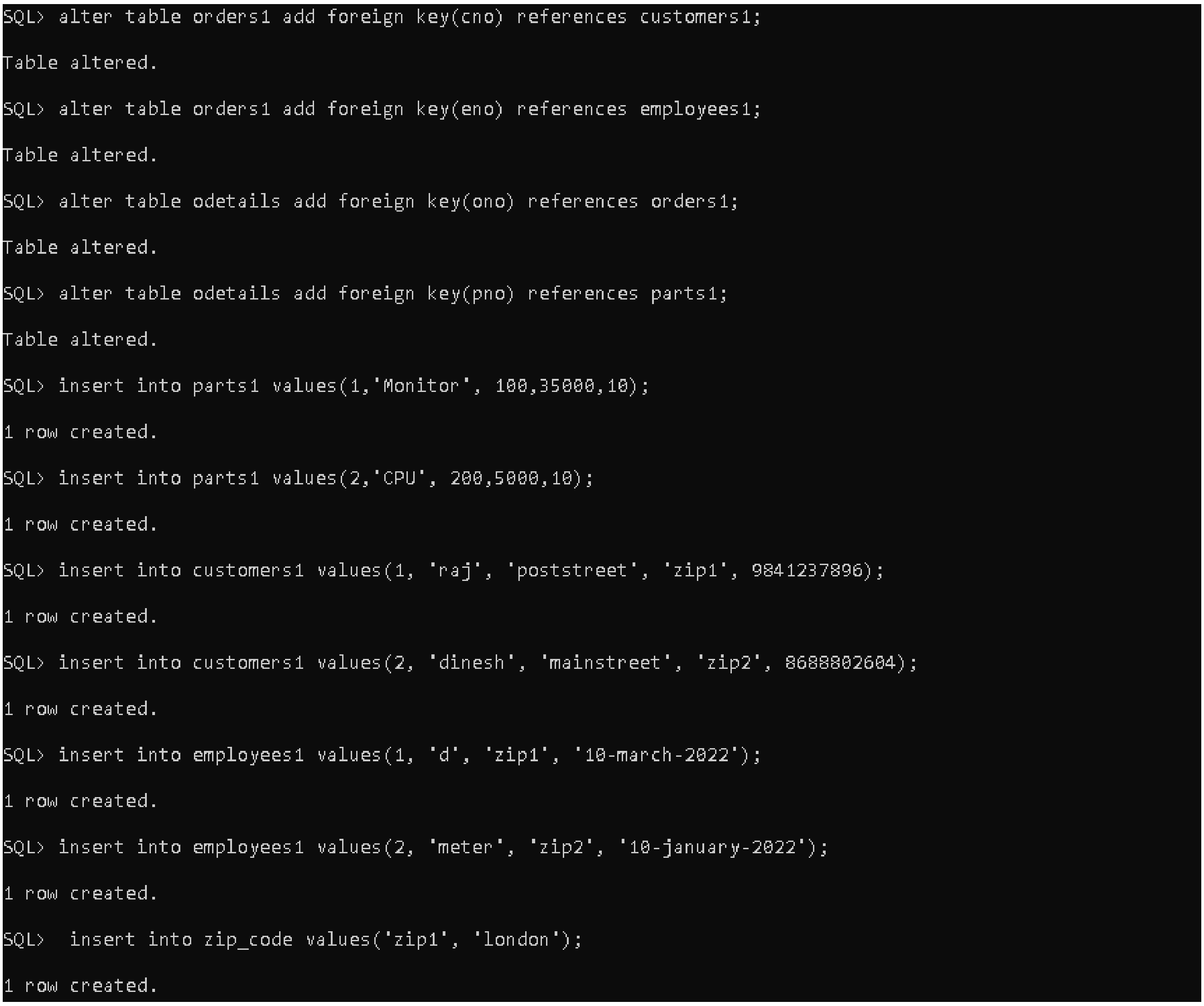
```
        PNO
 ----------
 PNAME
 ----------------------------------------------------------------------
-----------
        QTY
 ----------


          1
 Monitor
      10000


          2
 CPU


        PNO
 ----------
 PNAME
 ----------------------------------------------------------------------
-----------
        QTY
 ----------
      10000



 SQL> select (shipped-received) as avg_wait_time from orders1;


 AVG_WAIT_TIME
 -------------
            10
            61
            3


 SQL> select employees1.eno, employees1.ename, sum(parts1.price) as
tot_sales from employees1, odetails, parts1, orders1 where
employees1.eno=orders1.eno and orders1.received>'01-january-2005' and
orders1.shipped<'31-december-2005' and orders1.ono=odetails.ono and
odetails.pno=parts1.pno group by employees1.eno,employees1.ename;


       ENO
 ----------
 ENAME
 ----------------------------------------------------------------------
-----------
  TOT_SALES
 ----------
          1
 d
      40000


          2
 meter
      40000


       ENO
 ----------
 ENAME
 ----------------------------------------------------------------------
-----------
  TOT_SALES
 ----------
```

```
SQL> spool off;
```

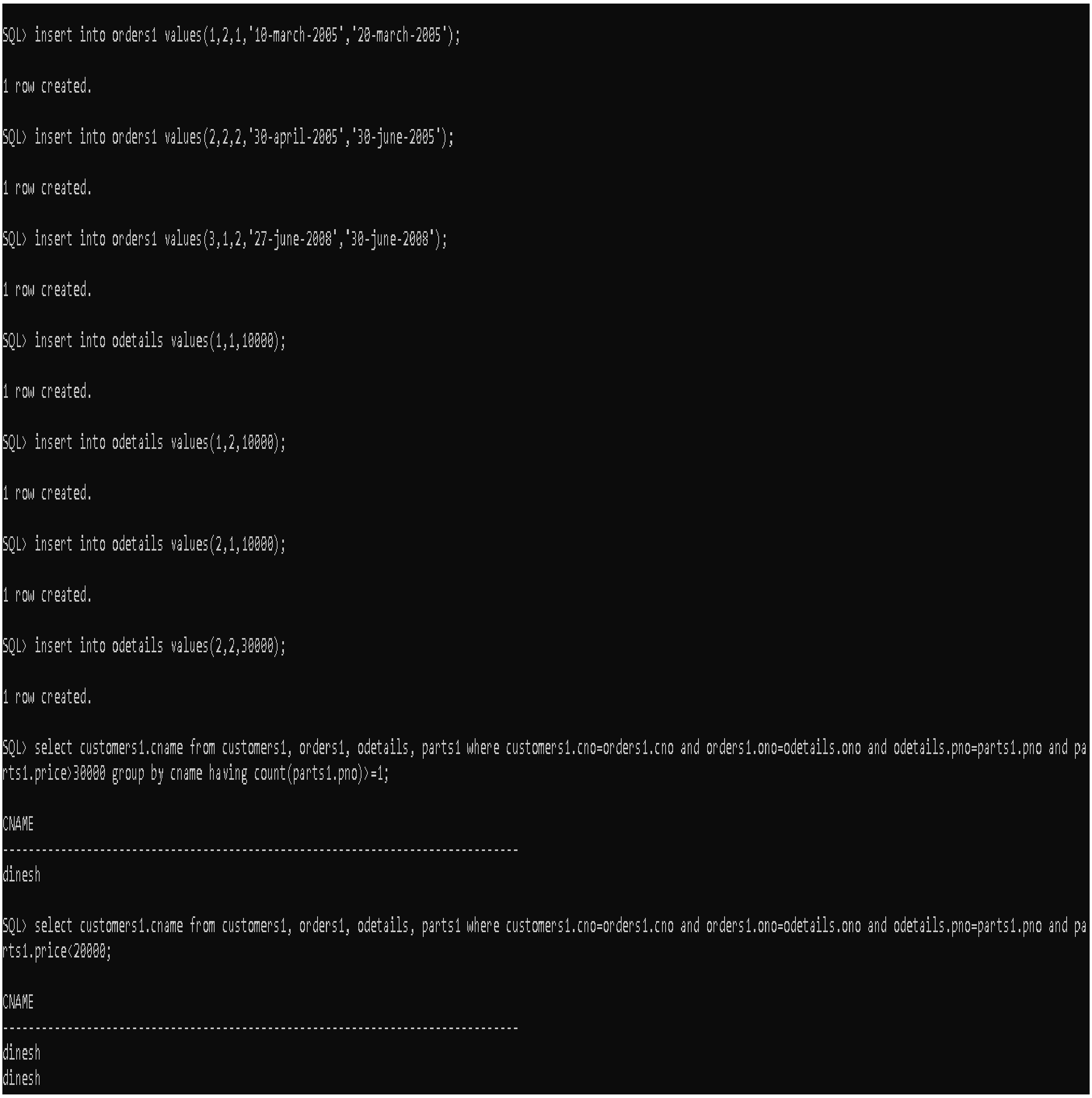
Output:-



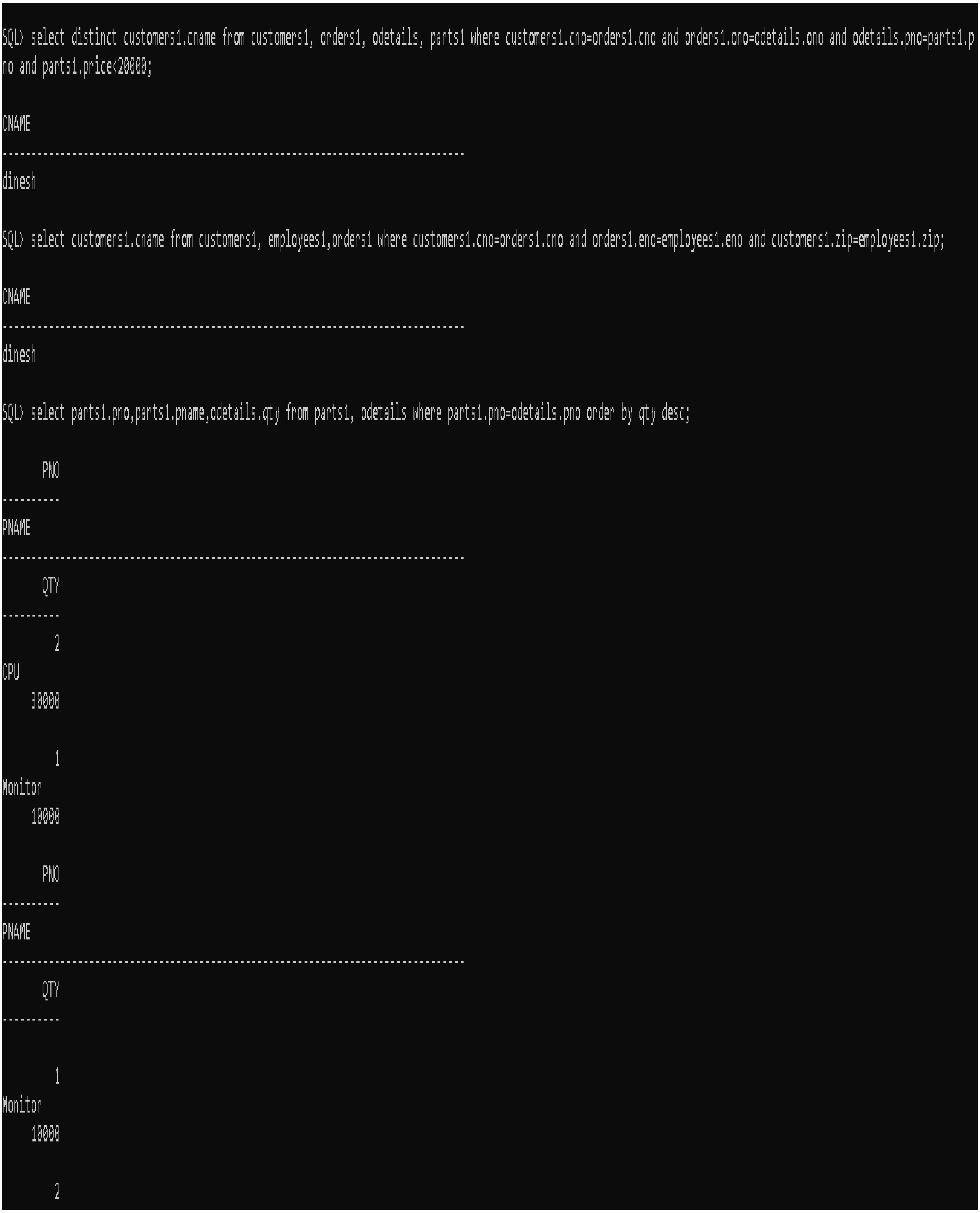
```
SQL> spool on;
SQL> spool ninth.lst;
SQL> create table parts1(pno int,pname varchar(255),qoh int,price int,olevel int);

Table created.

SQL> create table customers1(cno int,cname varchar(255),street varchar(255),zip varchar(255),phone int);

Table created.

SQL> create table employees1(eno int,ename varchar(255),zip varchar(255),hdate date);

Table created.

SQL> create table zip_code(zip varchar(255),city varchar(255));

Table created.

SQL> create table orders1(ono int,cno int,eno int,received date,shipped date);

Table created.

SQL> create table odetails(ono int,pno int,qty int);

Table created.

SQL> alter table parts1 add primary key(pno);

Table altered.

SQL> alter table customers1 add primary key(cno);

Table altered.

SQL> alter table employees1 add primary key(eno);

Table altered.

SQL> alter table orders1 add primary key(ono);

Table altered.
```



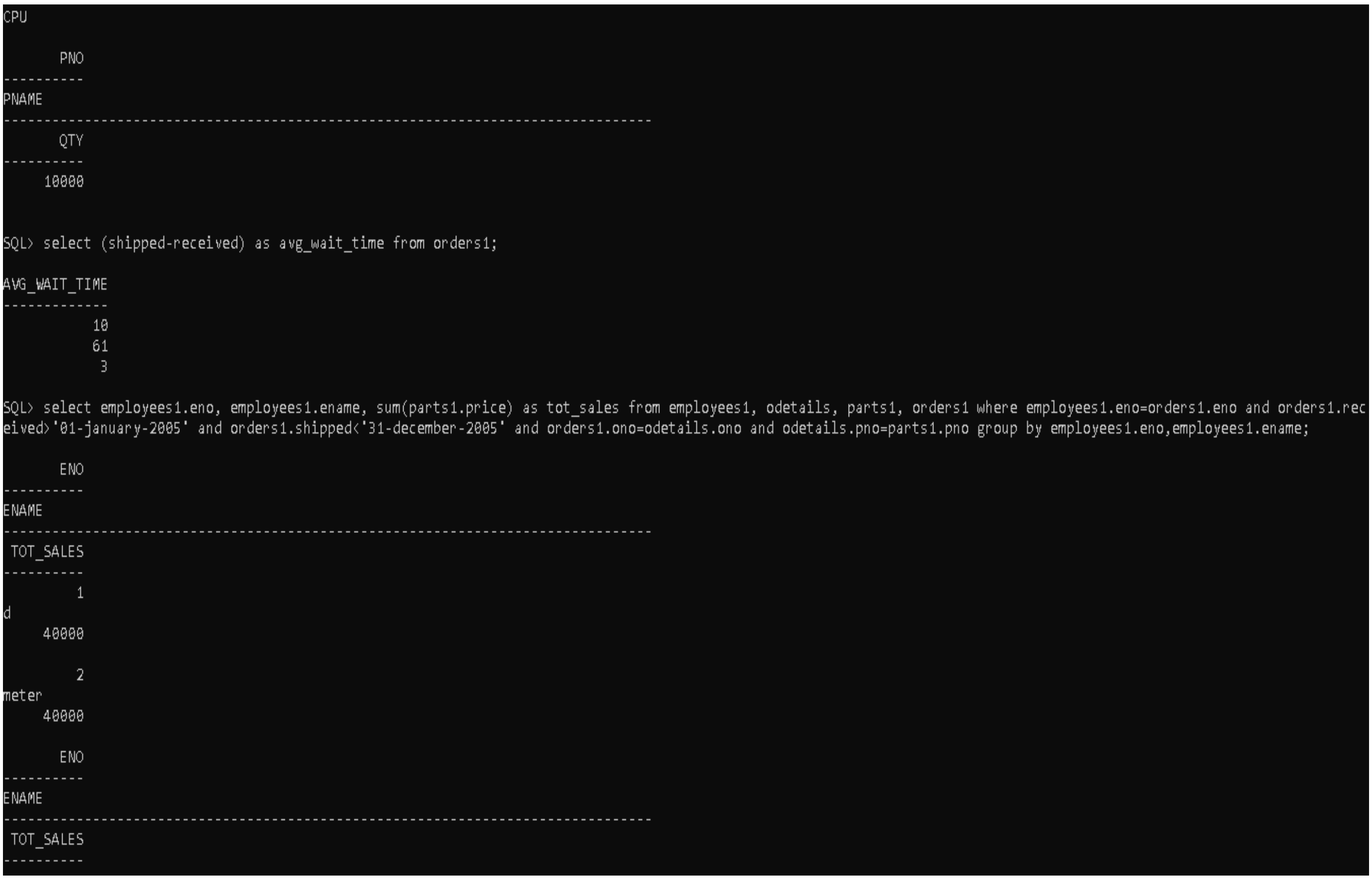
```
SQL> alter table orders1 add foreign key(cno) references customers1;

Table altered.

SQL> alter table orders1 add foreign key(eno) references employees1;

Table altered.

SQL> alter table odetails add foreign key(ono) references orders1;

Table altered.

SQL> alter table odetails add foreign key(pno) references parts1;

Table altered.

SQL> insert into parts1 values(1,'Monitor', 100,35000,10);

1 row created.

SQL> insert into parts1 values(2,'CPU', 200,5000,10);

1 row created.

SQL> insert into customers1 values(1, 'raj', 'poststreet', 'zip1', 9841237896);

1 row created.

SQL> insert into customers1 values(2, 'dinesh', 'mainstreet', 'zip2', 8688802604);

1 row created.

SQL> insert into employees1 values(1, 'd', 'zip1', '10-march-2022');

1 row created.

SQL> insert into employees1 values(2, 'meter', 'zip2', '10-january-2022');

1 row created.

SQL>  insert into zip_code values('zip1', 'london');

1 row created.
```



```
SQL> insert into orders1 values(1,2,1,'10-march-2005','20-march-2005');

1 row created.

SQL> insert into orders1 values(2,2,2,'30-april-2005','30-june-2005');

1 row created.

SQL> insert into orders1 values(3,1,2,'27-june-2008','30-june-2008');

1 row created.

SQL> insert into odetails values(1,1,10000);

1 row created.

SQL> insert into odetails values(1,2,10000);

1 row created.

SQL> insert into odetails values(2,1,10000);

1 row created.

SQL> insert into odetails values(2,2,30000);

1 row created.

SQL> select customers1.cname from customers1, orders1, odetails, parts1 where customers1.cno=orders1.cno and orders1.ono=odetails.ono and odetails.pno=parts1.pno and pa
rts1.price>30000 group by cname having count(parts1.pno)>=1;

CNAME
--------------------------------------------------------------------------------
dinesh

SQL> select customers1.cname from customers1, orders1, odetails, parts1 where customers1.cno=orders1.cno and orders1.ono=odetails.ono and odetails.pno=parts1.pno and pa
rts1.price<20000;

CNAME
--------------------------------------------------------------------------------
dinesh
dinesh
```



```
SQL> select distinct customers1.cname from customers1, orders1, odetails, parts1 where customers1.cno=orders1.cno and orders1.ono=odetails.ono and odetails.pno=parts1.p
no and parts1.price<20000;

CNAME
-------------------------------------------------------------------------
dinesh

SQL> select customers1.cname from customers1, employees1,orders1 where customers1.cno=orders1.cno and orders1.eno=employees1.eno and customers1.zip=employees1.zip;

CNAME
-------------------------------------------------------------------------
dinesh

SQL> select parts1.pno,parts1.pname,odetails.qty from parts1, odetails where parts1.pno=odetails.pno order by qty desc;

      PNO
---------
PNAME
-------------------------------------------------------------------------
      QTY
---------
        2
CPU
    30000

        1
Monitor
    10000

      PNO
---------
PNAME
-------------------------------------------------------------------------
      QTY
---------

        1
Monitor
    10000

        2
```



```
CPU

       PNO
----------
PNAME
--------------------------------------------------------------------------------
       QTY
----------
     10000


SQL> select (shipped-received) as avg_wait_time from orders1;

AVG_WAIT_TIME
-------------
           10
           61
            3

SQL> select employees1.eno, employees1.ename, sum(parts1.price) as tot_sales from employees1, odetails, parts1, orders1 where employees1.eno=orders1.eno and orders1.rec
eived>'01-january-2005' and orders1.shipped<'31-december-2005' and orders1.ono=odetails.ono and odetails.pno=parts1.pno group by employees1.eno,employees1.ename;

       ENO
----------
ENAME
--------------------------------------------------------------------------------
 TOT_SALES
----------
         1
d
     40000

         2
meter
     40000

       ENO
----------
ENAME
--------------------------------------------------------------------------------
 TOT_SALES
----------
```

Result:-

Successfully executed the commands related to sql.

DBMS Lab Record

Submitted By:

NAME -A.Venkata DineshReddy

REGISTRATION NO. -RA1911028010098

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

Specialization - Cloud Computing

FACULTY NAME - Dr.S.Suresh

Title of Experiment

AIM : To execute commands using the PL/SQL.

SQL Command:

```
SQL> set serveroutput on
SQL> declare
  2  odd number:=0;
  3  i number;
  4  begin
  5  for i in 1..100
  6  loop
  7  if(i mod 2!=0) then
  8  odd:=odd+i;
  9  end if;
 10  end loop;
 11  dbms_output.put_line('the sum of 100 odd no is'||odd);
 12  end;
 13  /
the sum of 100 odd no is2500

PL/SQL procedure successfully completed.

SQL> create table employee1(id int, name varchar(255), salary int);

Table created.
```

```
SQL> insert into employee1 values(1, 'Dinesh', 2000);

1 row created.

SQL> insert into employee1 values(2, 'DineshReddy', 4000);

1 row created.

SQL> insert into employee1 values(3, 'D', 7000);

1 row created.

SQL> declare
  2  sal number;
  3  begin
  4  select salary into sal from employee1 where id=2;
  5  if(sal<2500) then
  6  update employee1 set salary=salary*1.25 where id=2;
  7  elsif(sal>=2500 and sal<5000) then
  8  update employee1 set salary=salary*1.2 where id=2;
  9  else
 10  update employee1 set salary=salary+1000 where id=2;
 11  end if;
 12  end;
 13
 14  /
```

```
PL/SQL procedure successfully completed.

SQL> select * from employee1;

        ID
----------
NAME
--------------------------------------------------------------------------------
    SALARY
----------
         1
Dinesh
      2000

         2
DineshReddy
      4800

        ID
----------
NAME
--------------------------------------------------------------------------------
    SALARY
----------

         3
```

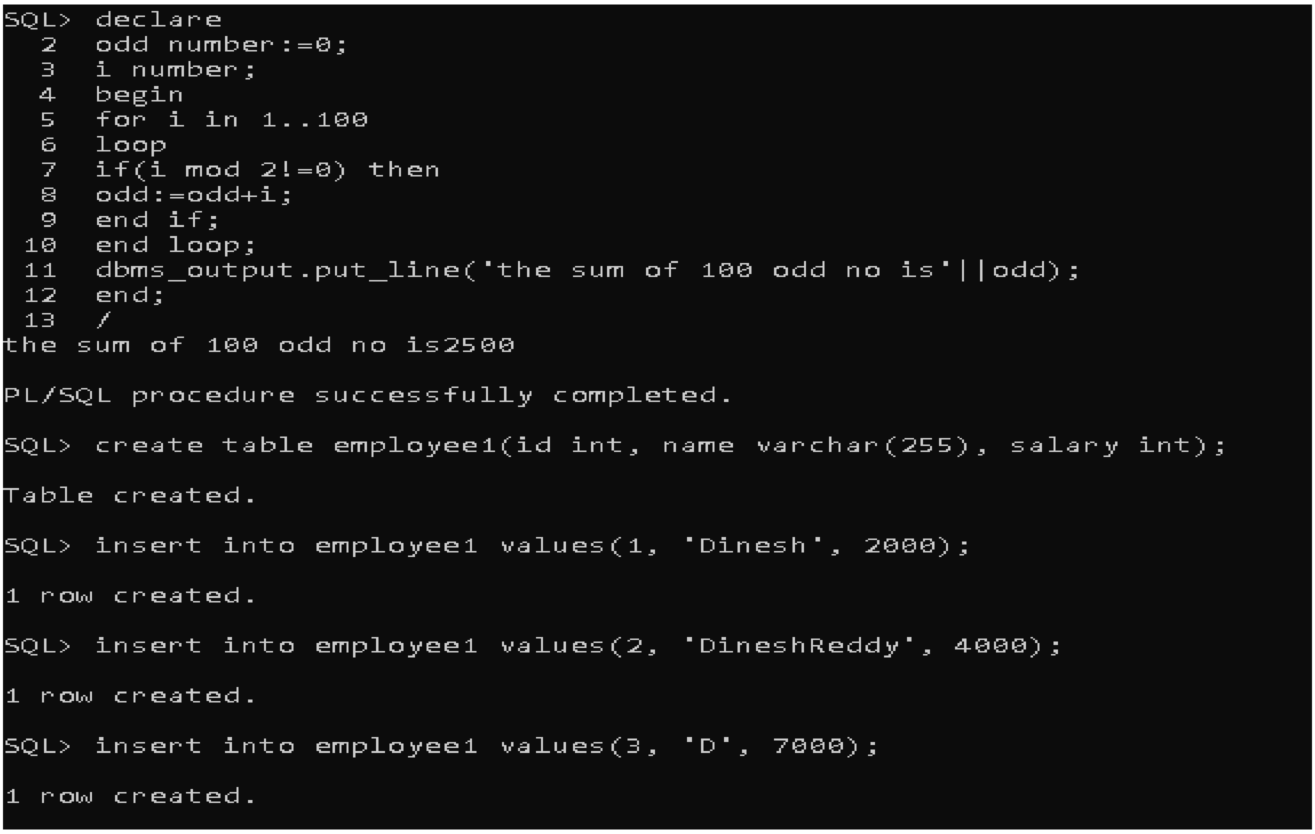
```
D
      7000



SQL> select * from dept;


    DEPTNO DNAME                LOC
---------- -------------------- --------------------
        10 CSE                  TECHPARK
        20 ECE                  MAIN BLOCK
        30 IT                   UB
        40 MECH                 KTR

SQL> begin
  2  UPDATE DEPT SET DNAME='HRD' WHERE DNAME NOT LIKE 'HRD' AND
  3  DEPTNO=71;
  4  IF SQL%FOUND THEN
  5  DBMS_OUTPUT.PUT_LINE('UPDATED');
  6  ELSIF SQL%NOTFOUND THEN
  7  DBMS_OUTPUT.PUT_LINE('NAME IS ALREADY HRD');
  8  END IF;
  9  END;
 10  /
NAME IS ALREADY HRD

PL/SQL procedure successfully completed.
```

```
SQL> create table emp(eno int, ename varchar(255),sal int, comm int);

Table created.

SQL>  insert into emp values(1,'rajesh',75000, 250);

1 row created.

SQL> insert into emp values(2,'ravi',100000, 500);

1 row created.

SQL> insert into emp values(2,'dinesh',90000, 400);

1 row created.

SQL> insert into emp values(2,'d',99000, 900);

1 row created.

SQL> declare
  2  cursor emp_comm_sal is select sal,comm from emp;
  3  total_wages number := 0;
  4  begin
  5  for x in emp_comm_sal loop
  6  total_wages := total_wages + x.sal + x.comm;
  7  end loop;
  8  dbms_output.put_line('total wages of company is ' || total_wages);
  9  end;
 10  /
total wages of company is 366050

PL/SQL procedure successfully completed.

SQL> select sum(sal+comm) as total_wages from emp;

TOTAL_WAGES
-----------
     366050

SQL> declare
  2  cursor emp_comm_sal is select sal,comm from emp;
  3  counts number := 0;
  4  begin
  5  for x in emp_comm_sal loop
  6  if x.sal > 2000 then
  7  counts := counts + 1;
  8  end if;
  9  end loop;
 10
 11  dbms_output.put_line('total number of highly paid employees (salary > 2000) are '||counts);
 12  end;
 13  /
```

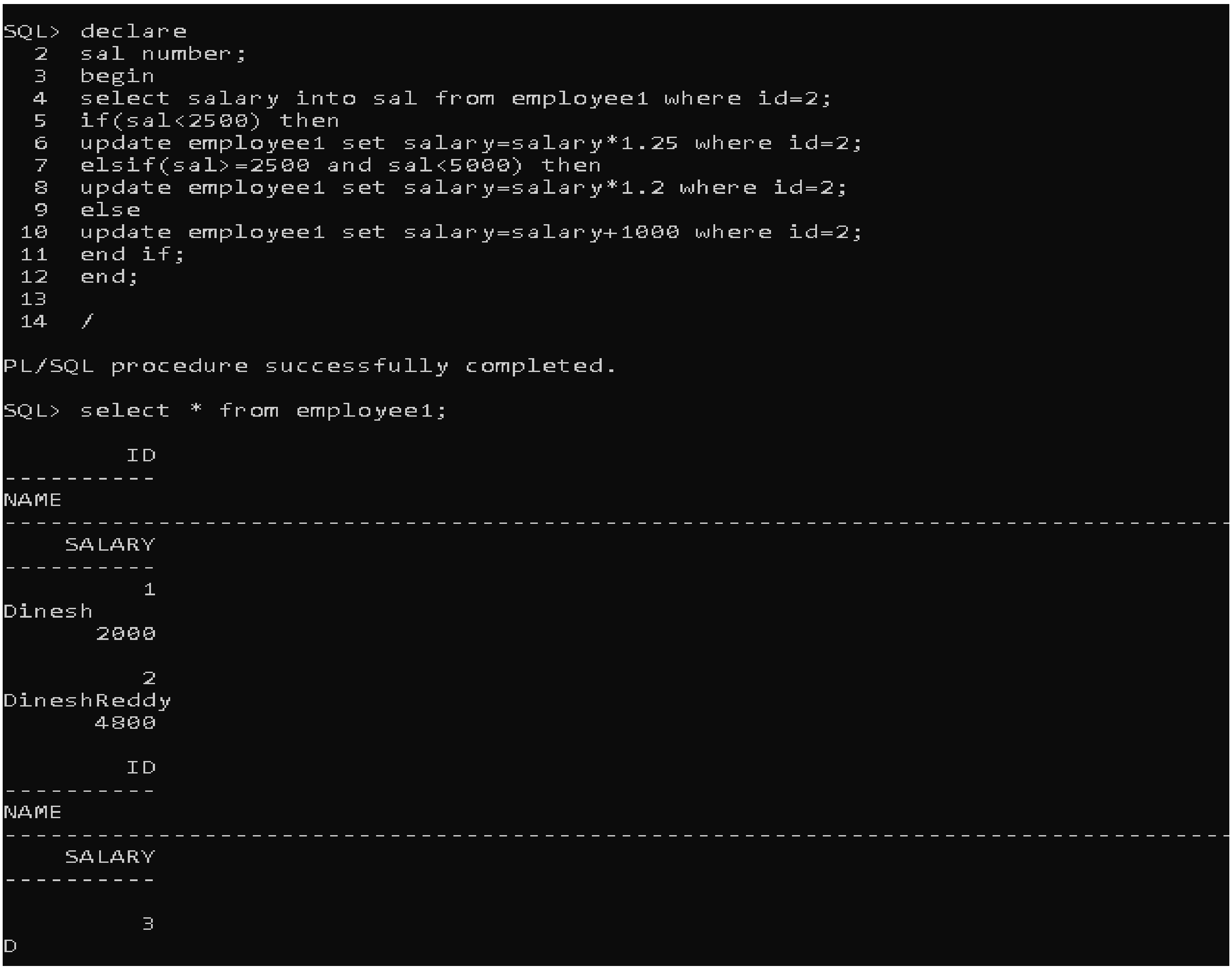
```
total number of highly paid employees (salary > 2000) are 4


PL/SQL procedure successfully completed.


SQL> select count(*) from emp where sal>2000;


  COUNT(*)
----------
         4


SQL> declare
  2  cursor emp_comm_sal is select sal,comm from emp;
  3  counts number := 0;
  4  begin
  5  for x in emp_comm_sal loop
  6  if x.comm > x.sal then
  7  counts := counts + 1;
  8  end if;
  9  end loop;
 10  dbms_output.put_line('total number of employees who get commission that is higher than their salary are  '||counts);
 11  end;
 12  /
total number of employees who get commission that is higher than their salary
are  0


PL/SQL procedure successfully completed.
```

```
SQL> create table employees2( emp_name varchar(255), job varchar(255), hiredate date);

Table created.

SQL>  insert into employees2 values('raju', 'manager', '12-march-1980');

1 row created.

SQL>  insert into employees2 values('ravi', 'chief executive', '12-march-2010');

1 row created.

SQL> insert into employees2 values('rama', 'senior manager', '22-june-1989');

1 row created.

SQL> DECLARE
  2  CURSOR EMP_CUR IS SELECT EMP_NAME,JOB,HIREDATE FROM EMPLOYEES2;
  3  TOTALEMP NUMBER := 0;
  4  BEGIN
  5  FOR X IN EMP_CUR LOOP
  6  IF (EXTRACT(YEAR FROM SYSDATE)-EXTRACT(YEAR FROM X.HIREDATE)) > 28
  7  THEN
  8  DBMS_OUTPUT.PUT_LINE(X.EMP_NAME||' '||X.JOB);
  9  TOTALEMP := TOTALEMP + 1;
 10  END IF;
 11  END LOOP;
 12  DBMS_OUTPUT.PUT_LINE('TOTAL NO OF EMPLOYEES WITH MORE 28 YEARS OF EXPERIENCE ARE '||TOTALEMP);
 13  END;
 14  /
raju manager
rama senior manager
TOTAL NO OF EMPLOYEES WITH MORE 28 YEARS OF EXPERIENCE ARE 2

PL/SQL procedure successfully completed.

SQL> CREATE OR REPLACE TRIGGER D
  2  BEFORE INSERT ON EMP
  3  FOR EACH ROW
  4  DECLARE
  5  CURSOR C IS SELECT * FROM EMP;
  6  X EMP%ROWTYPE;
  7  BEGIN
  8  OPEN C;
  9  LOOP
 10  FETCH C INTO X;
 11  IF NEW.EMPNO = X.EMPNO THEN
 12  DBMS_OUTPUT.PUT_LINE('YOU ENTERED DUPLICATED NO');
 13  ELSIF NEW.EMPNO IS NULL THEN
 14  DBMS_OUTPUT.PUT_LINE('EMPNO CANT BE NULL');
 15  END IF;
 16  EXIT WHEN C%NOTFOUND;
 17  END LOOP;
 18  CLOSE C;
 19  END;
 20  /

Warning: Trigger created with compilation errors.


SQL> insert into emp values(2,'dinesh',90000, 400);
insert into emp values(2,'dinesh',90000, 400)
            *
ERROR at line 1:
ORA-04098: trigger 'SYSTEM.D' is invalid and failed re-validation



SQL> spool off;
```

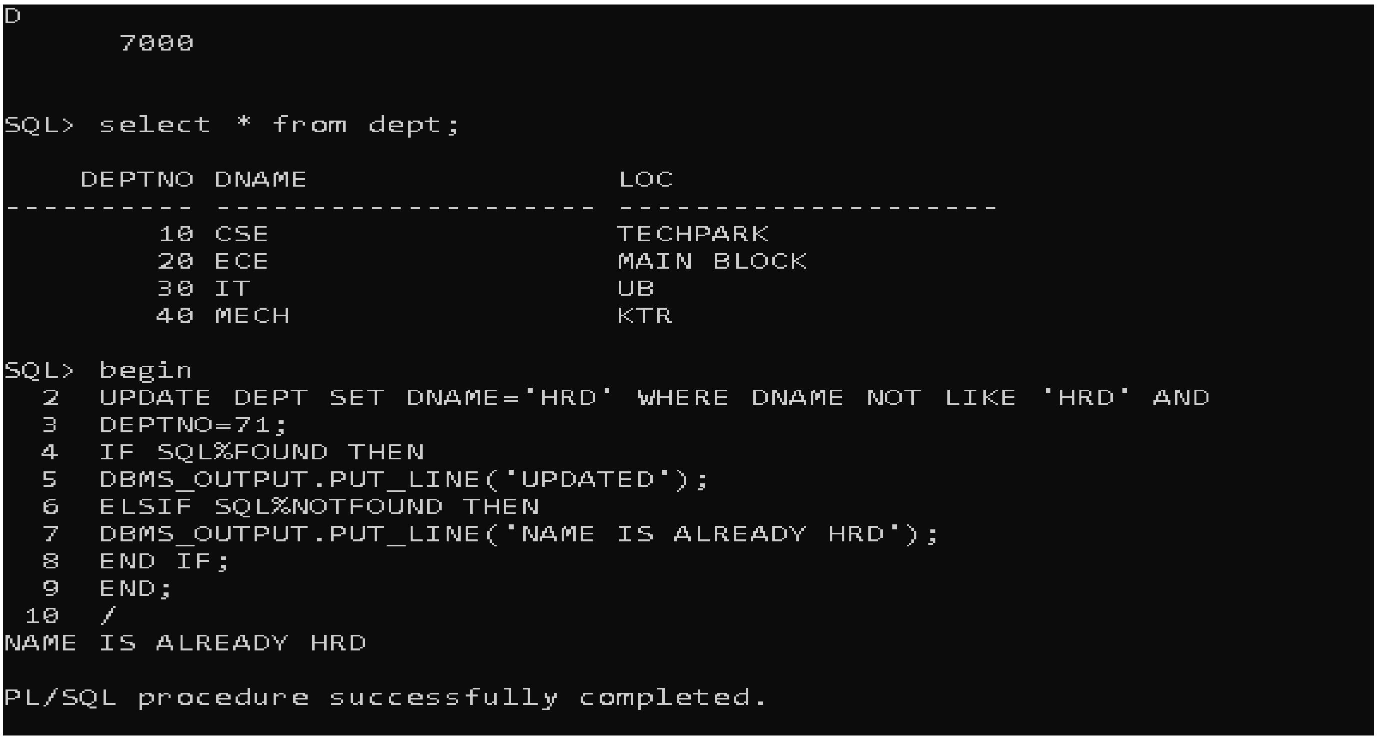
Output:-



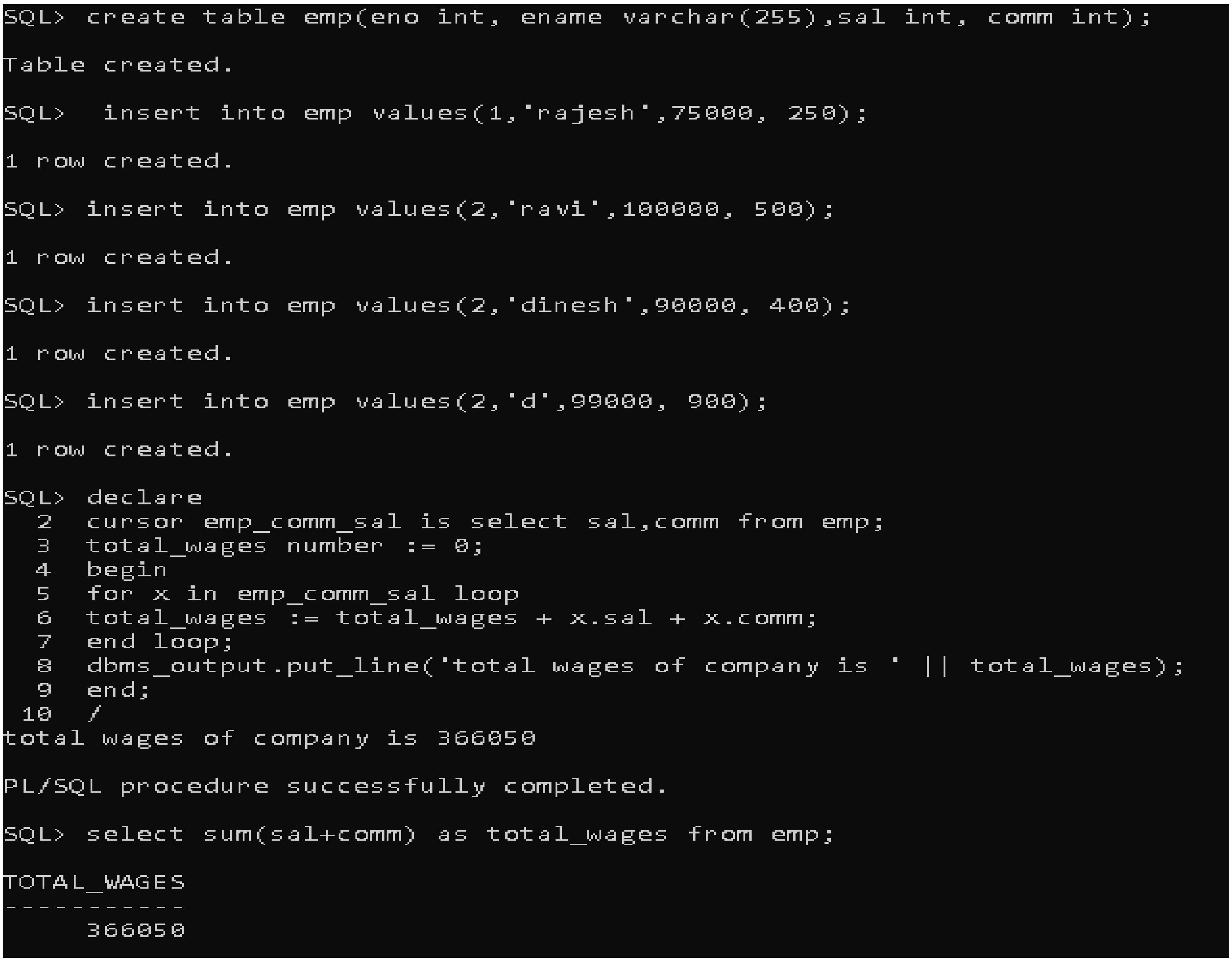
```
SQL> declare
     odd number:=0;
     i number;
     begin
     for i in 1..100
     loop
     if(i mod 2!=0) then
     odd:=odd+i;
     end if;
     end loop;
     dbms_output.put_line('the sum of 100 odd no is'||odd);
     end;
     /
the sum of 100 odd no is2500

PL/SQL procedure successfully completed.

SQL> create table employee1(id int, name varchar(255), salary int);

Table created.

SQL> insert into employee1 values(1, 'Dinesh', 2000);

1 row created.

SQL> insert into employee1 values(2, 'DineshReddy', 4000);

1 row created.

SQL> insert into employee1 values(3, 'D', 7000);

1 row created.
```



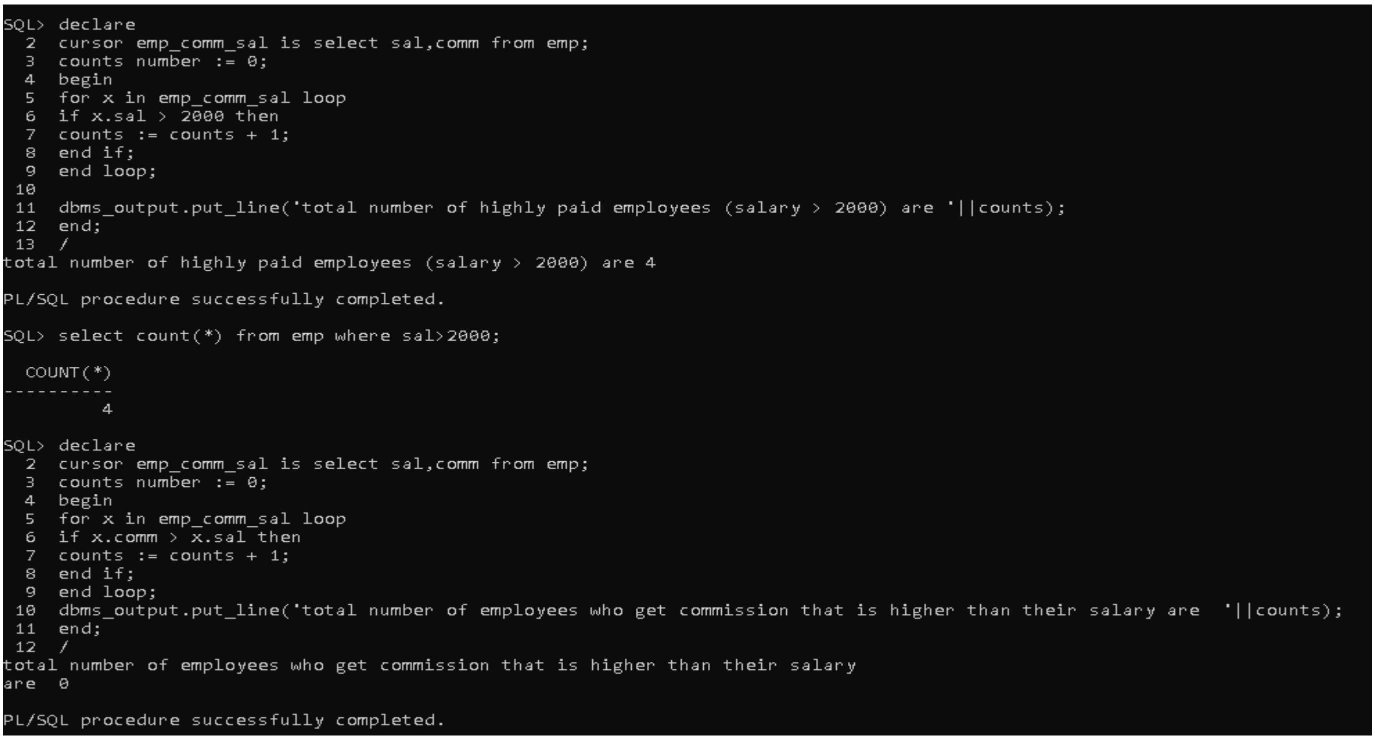
```
SQL> declare
  2  sal number;
  3  begin
  4  select salary into sal from employee1 where id=2;
  5  if(sal<2500) then
  6  update employee1 set salary=salary*1.25 where id=2;
  7  elsif(sal>=2500 and sal<5000) then
  8  update employee1 set salary=salary*1.2 where id=2;
  9  else
 10  update employee1 set salary=salary+1000 where id=2;
 11  end if;
 12  end;
 13
 14  /

PL/SQL procedure successfully completed.

SQL> select * from employee1;

        ID
----------
NAME
--------------------------------------------------------------------------------
    SALARY
----------
         1
Dinesh
      2000

         2
DineshReddy
      4800

        ID
----------
NAME
--------------------------------------------------------------------------------
    SALARY
----------

         3
D
```



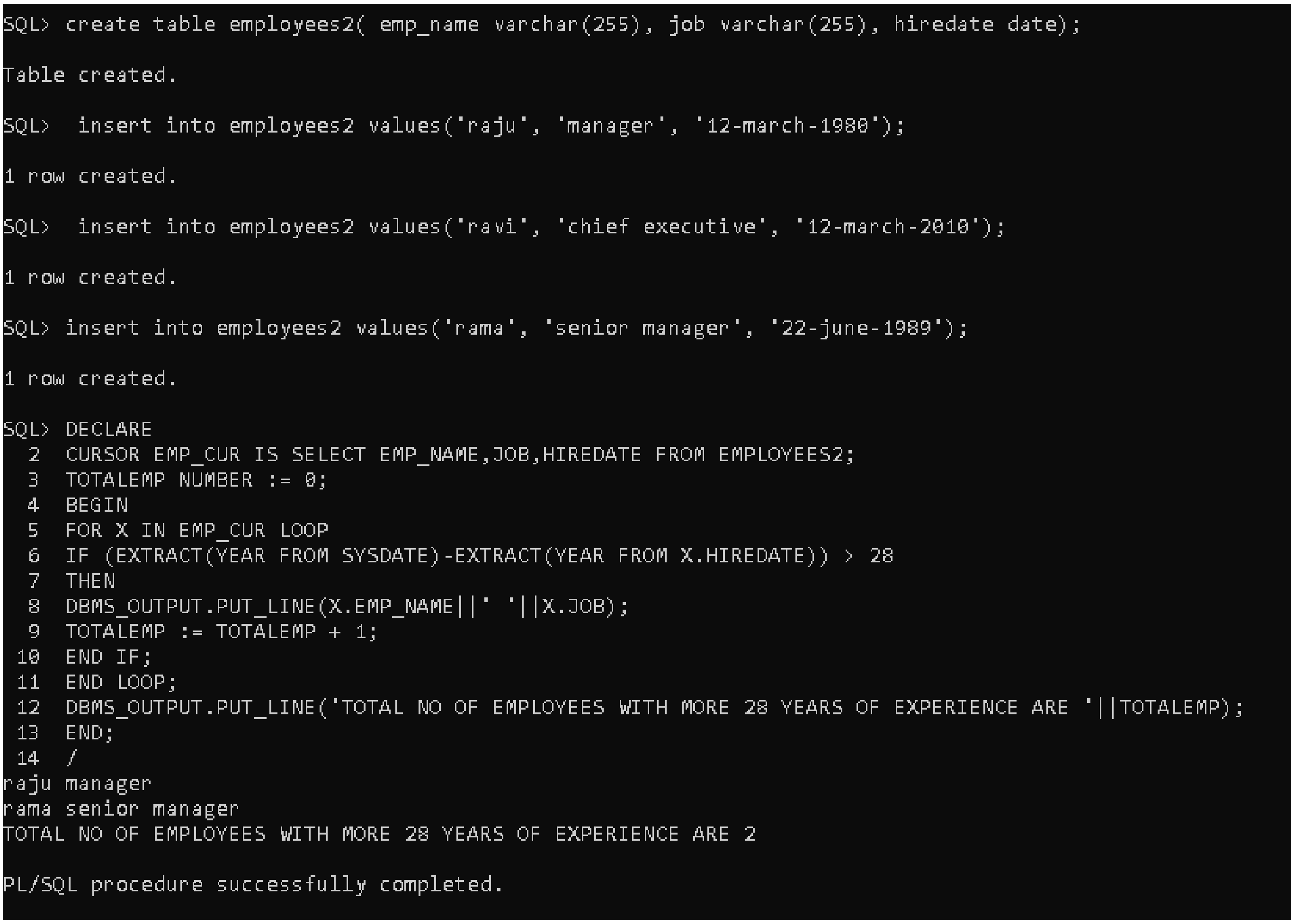
```
D
      7000


SQL> select * from dept;

    DEPTNO DNAME                LOC
---------- -------------------- --------------------
        10 CSE                  TECHPARK
        20 ECE                  MAIN BLOCK
        30 IT                   UB
        40 MECH                 KTR

SQL> begin
     UPDATE DEPT SET DNAME='HRD' WHERE DNAME NOT LIKE 'HRD' AND
     DEPTNO=71;
     IF SQL%FOUND THEN
     DBMS_OUTPUT.PUT_LINE('UPDATED');
     ELSIF SQL%NOTFOUND THEN
     DBMS_OUTPUT.PUT_LINE('NAME IS ALREADY HRD');
     END IF;
     END;
     /
NAME IS ALREADY HRD

PL/SQL procedure successfully completed.
```



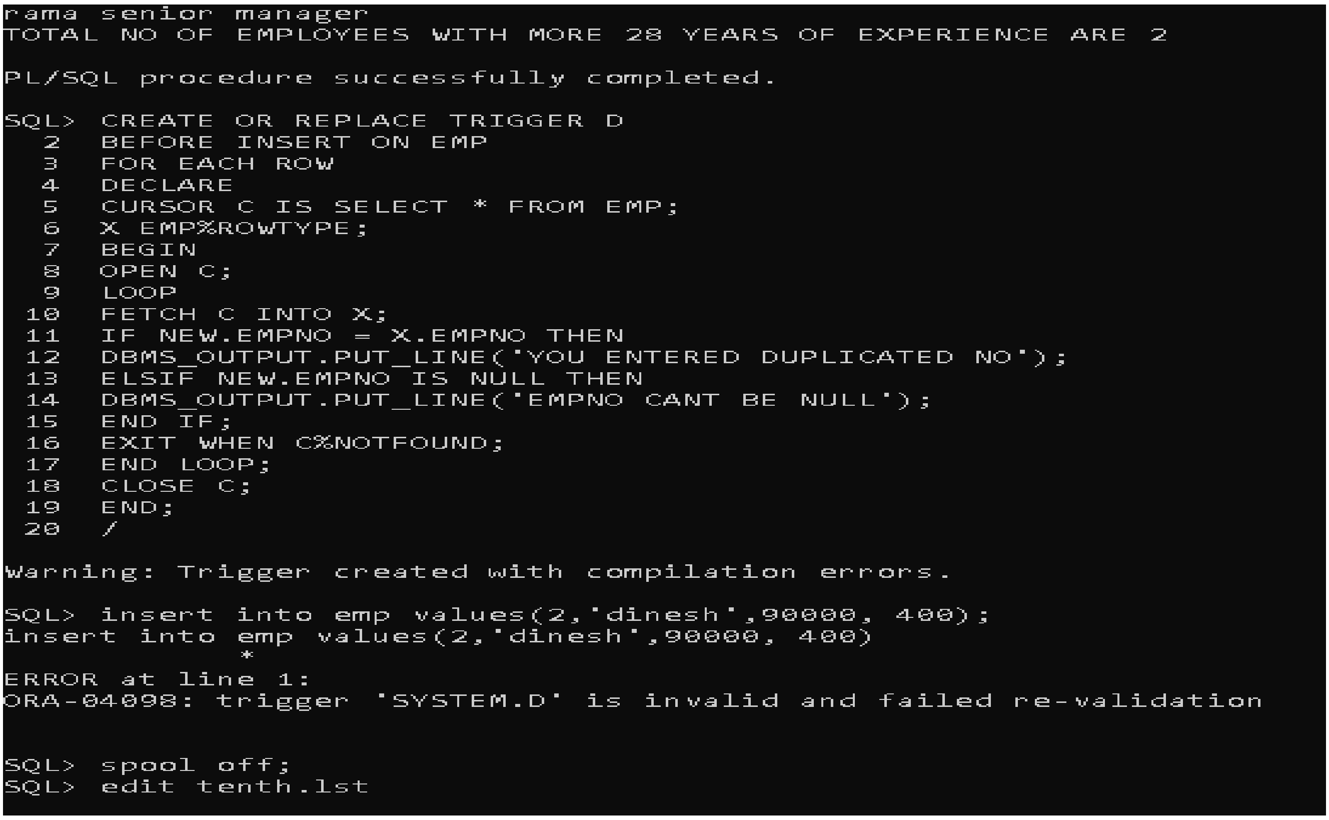
```
SQL> create table emp(eno int, ename varchar(255),sal int, comm int);

Table created.

SQL>  insert into emp values(1,'rajesh',75000, 250);

1 row created.

SQL> insert into emp values(2,'ravi',100000, 500);

1 row created.

SQL> insert into emp values(2,'dinesh',90000, 400);

1 row created.

SQL> insert into emp values(2,'d',99000, 900);

1 row created.

SQL> declare
     cursor emp_comm_sal is select sal,comm from emp;
     total_wages number := 0;
     begin
     for x in emp_comm_sal loop
     total_wages := total_wages + x.sal + x.comm;
     end loop;
     dbms_output.put_line('total wages of company is ' || total_wages);
     end;
     /
total wages of company is 366050

PL/SQL procedure successfully completed.

SQL> select sum(sal+comm) as total_wages from emp;

TOTAL_WAGES
-----------
     366050
```



```
SQL> declare
cursor emp_comm_sal is select sal,comm from emp;
counts number := 0;
begin
for x in emp_comm_sal loop
if x.sal > 2000 then
counts := counts + 1;
end if;
end loop;

dbms_output.put_line('total number of highly paid employees (salary > 2000) are '||counts);
end;
/
total number of highly paid employees (salary > 2000) are 4

PL/SQL procedure successfully completed.

SQL> select count(*) from emp where sal>2000;

  COUNT(*)
----------
         4

SQL> declare
cursor emp_comm_sal is select sal,comm from emp;
counts number := 0;
begin
for x in emp_comm_sal loop
if x.comm > x.sal then
counts := counts + 1;
end if;
end loop;
dbms_output.put_line('total number of employees who get commission that is higher than their salary are  '||counts);
end;
/
total number of employees who get commission that is higher than their salary
are  0

PL/SQL procedure successfully completed.
```



```
SQL> create table employees2( emp_name varchar(255), job varchar(255), hiredate date);

Table created.

SQL>  insert into employees2 values('raju', 'manager', '12-march-1980');

1 row created.

SQL>  insert into employees2 values('ravi', 'chief executive', '12-march-2010');

1 row created.

SQL> insert into employees2 values('rama', 'senior manager', '22-june-1989');

1 row created.

SQL> DECLARE
CURSOR EMP_CUR IS SELECT EMP_NAME,JOB,HIREDATE FROM EMPLOYEES2;
TOTALEMP NUMBER := 0;
BEGIN
FOR X IN EMP_CUR LOOP
IF (EXTRACT(YEAR FROM SYSDATE)-EXTRACT(YEAR FROM X.HIREDATE)) > 28
THEN
DBMS_OUTPUT.PUT_LINE(X.EMP_NAME||' '||X.JOB);
TOTALEMP := TOTALEMP + 1;
END IF;
END LOOP;
DBMS_OUTPUT.PUT_LINE('TOTAL NO OF EMPLOYEES WITH MORE 28 YEARS OF EXPERIENCE ARE '||TOTALEMP);
END;
/
raju manager
rama senior manager
TOTAL NO OF EMPLOYEES WITH MORE 28 YEARS OF EXPERIENCE ARE 2

PL/SQL procedure successfully completed.
```



```
rama senior manager
TOTAL NO OF EMPLOYEES WITH MORE 28 YEARS OF EXPERIENCE ARE 2

PL/SQL procedure successfully completed.

SQL> CREATE OR REPLACE TRIGGER D
     BEFORE INSERT ON EMP
     FOR EACH ROW
     DECLARE
     CURSOR C IS SELECT * FROM EMP;
     X EMP%ROWTYPE;
     BEGIN
     OPEN C;
     LOOP
     FETCH C INTO X;
     IF NEW.EMPNO = X.EMPNO THEN
     DBMS_OUTPUT.PUT_LINE('YOU ENTERED DUPLICATED NO');
     ELSIF NEW.EMPNO IS NULL THEN
     DBMS_OUTPUT.PUT_LINE('EMPNO CANT BE NULL');
     END IF;
     EXIT WHEN C%NOTFOUND;
     END LOOP;
     CLOSE C;
     END;
     /

Warning: Trigger created with compilation errors.

SQL> insert into emp values(2,'dinesh',90000, 400);
insert into emp values(2,'dinesh',90000, 400)
            *
ERROR at line 1:
ORA-04098: trigger 'SYSTEM.D' is invalid and failed re-validation


SQL> spool off;
SQL> edit tenth.lst
```

Result:-

Successfully executed the commands related to PL/SQL.