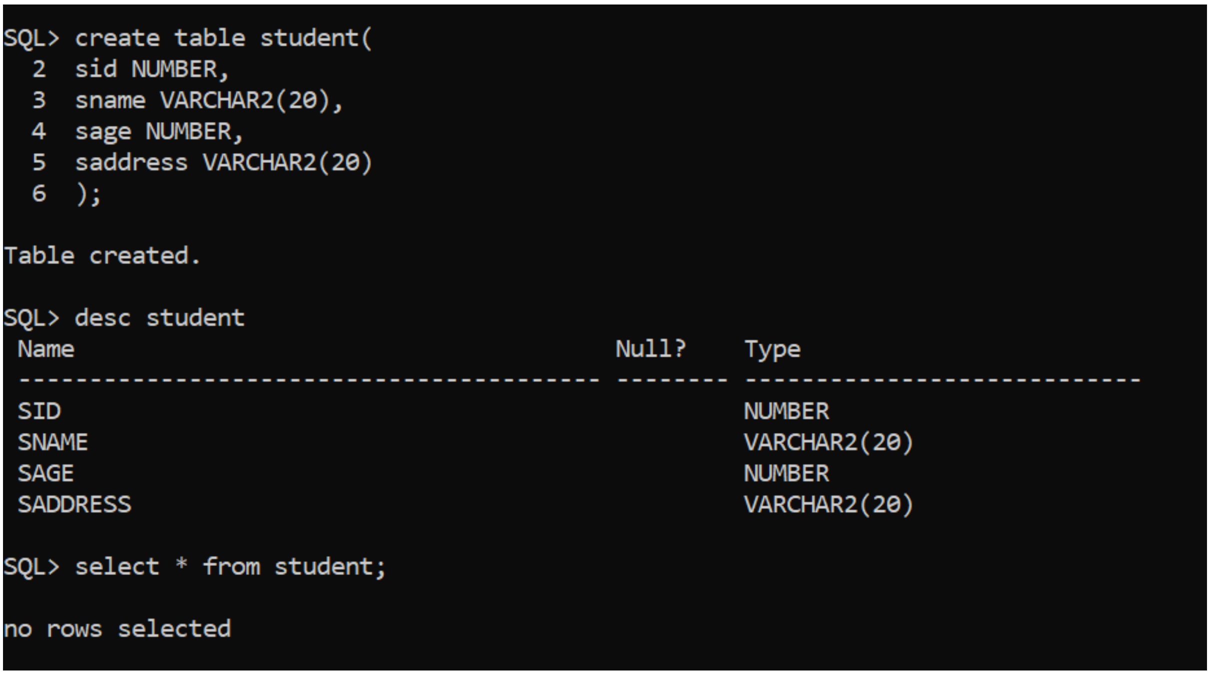
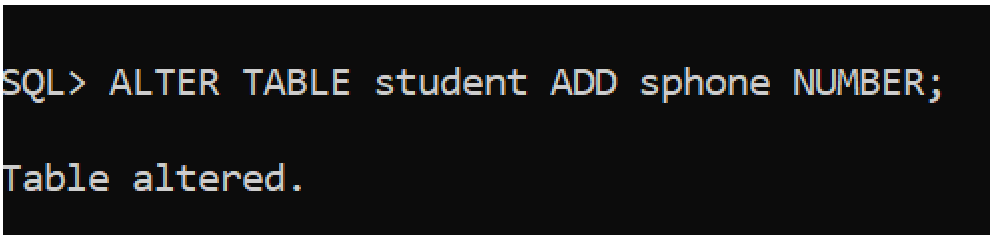
EXPERIMENT-1

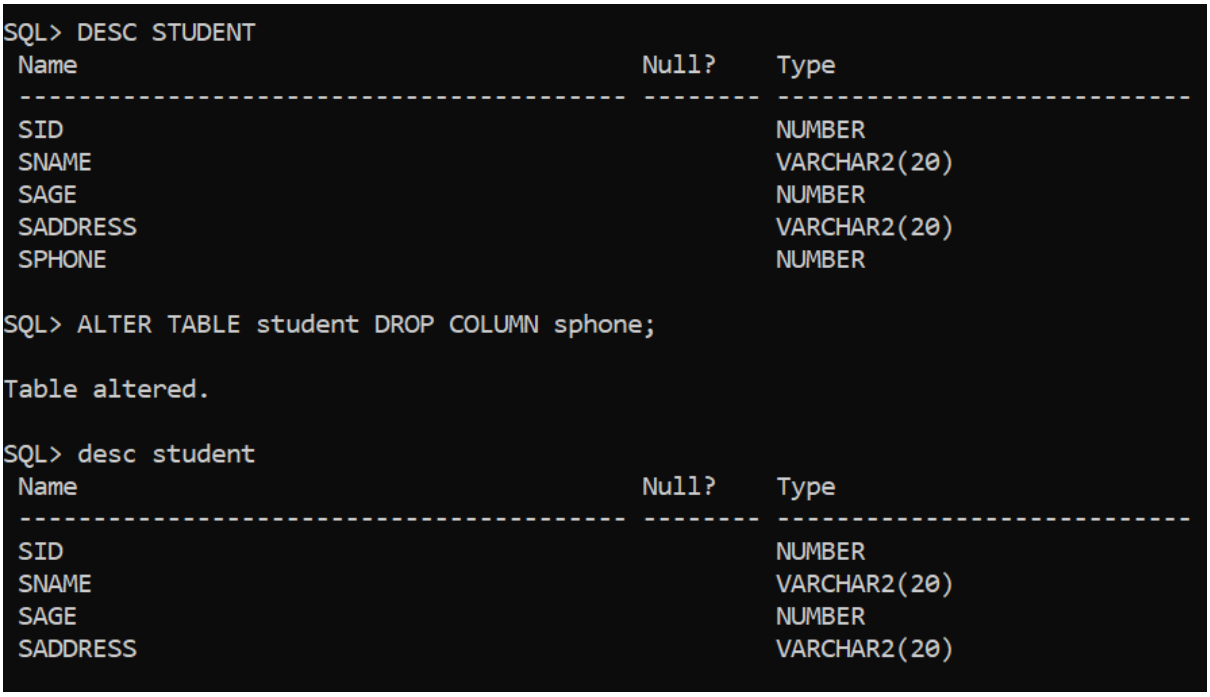
Roll no : 224G1A0546 Name : MAHAMMAD THANVEER P



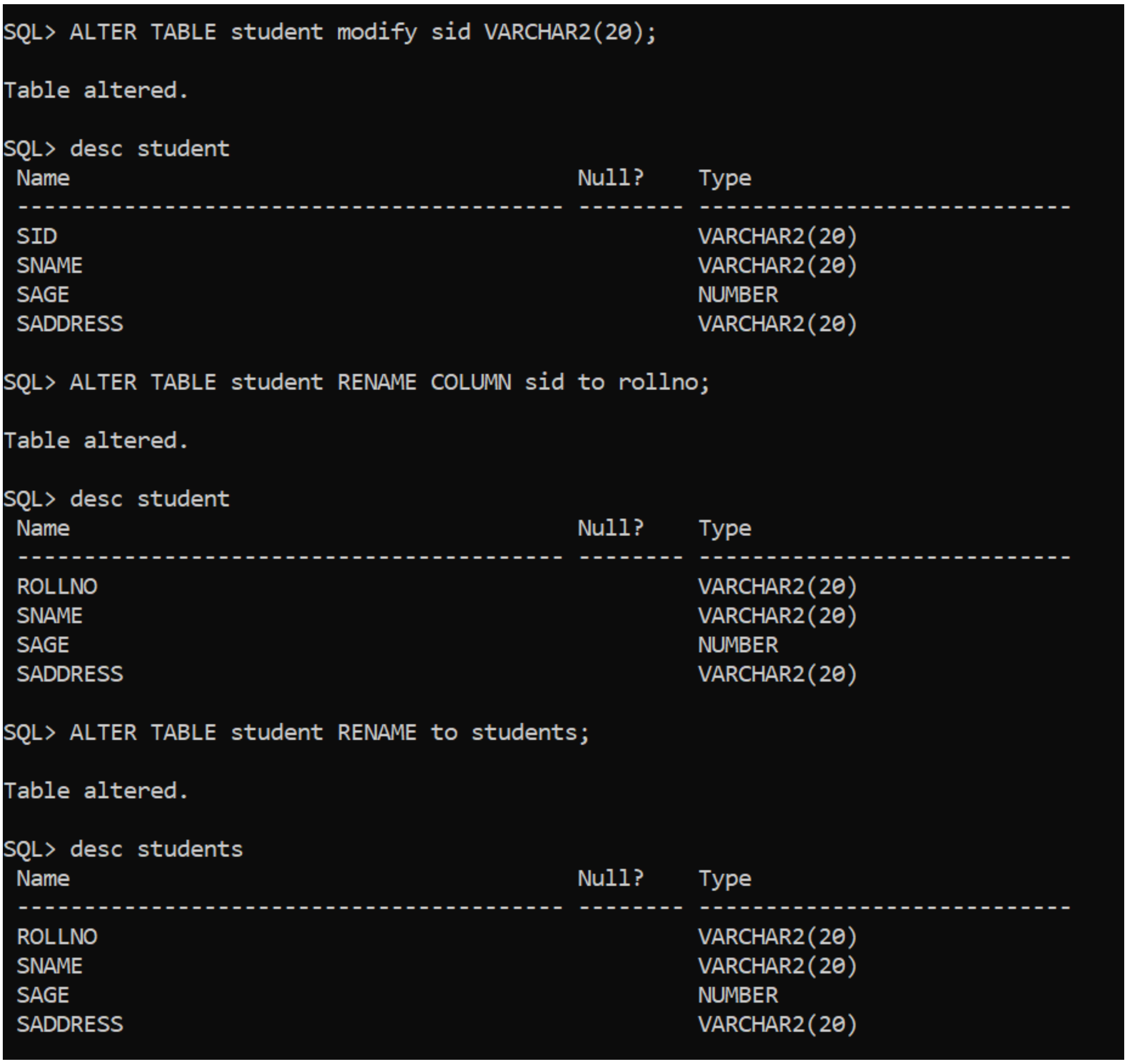
```
SQL> create table student(
  2  sid NUMBER,
  3  sname VARCHAR2(20),
  4  sage NUMBER,
  5  saddress VARCHAR2(20)
  6  );

Table created.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                NUMBER
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)

SQL> select * from student;

no rows selected
```



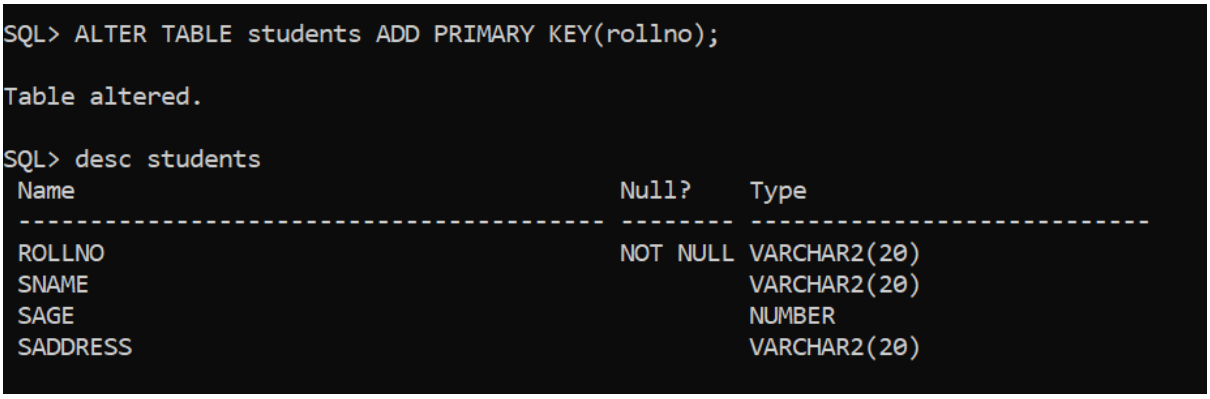
```
SQL> ALTER TABLE student ADD sphone NUMBER;

Table altered.
```



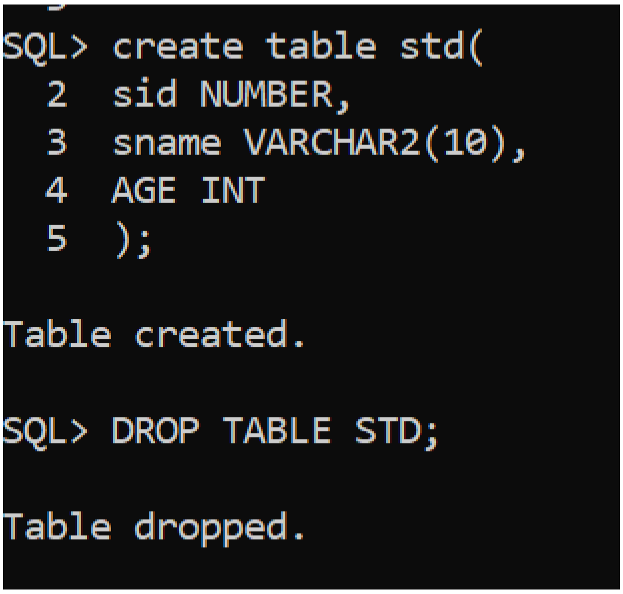
```
SQL> DESC STUDENT
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                NUMBER
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
 SPHONE                                             NUMBER

SQL> ALTER TABLE student DROP COLUMN sphone;

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                NUMBER
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
```



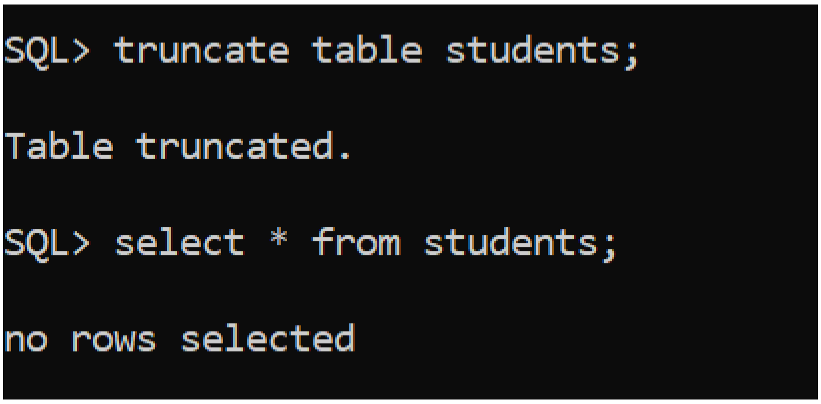
```
SQL> ALTER TABLE student modify sid VARCHAR2(20);

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)

SQL> ALTER TABLE student RENAME COLUMN sid to rollno;

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ROLLNO                                             VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)

SQL> ALTER TABLE student RENAME to students;

Table altered.

SQL> desc students
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ROLLNO                                             VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
```



```
SQL> ALTER TABLE students ADD PRIMARY KEY(rollno);

Table altered.

SQL> desc students
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ROLLNO                                    NOT NULL VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
```



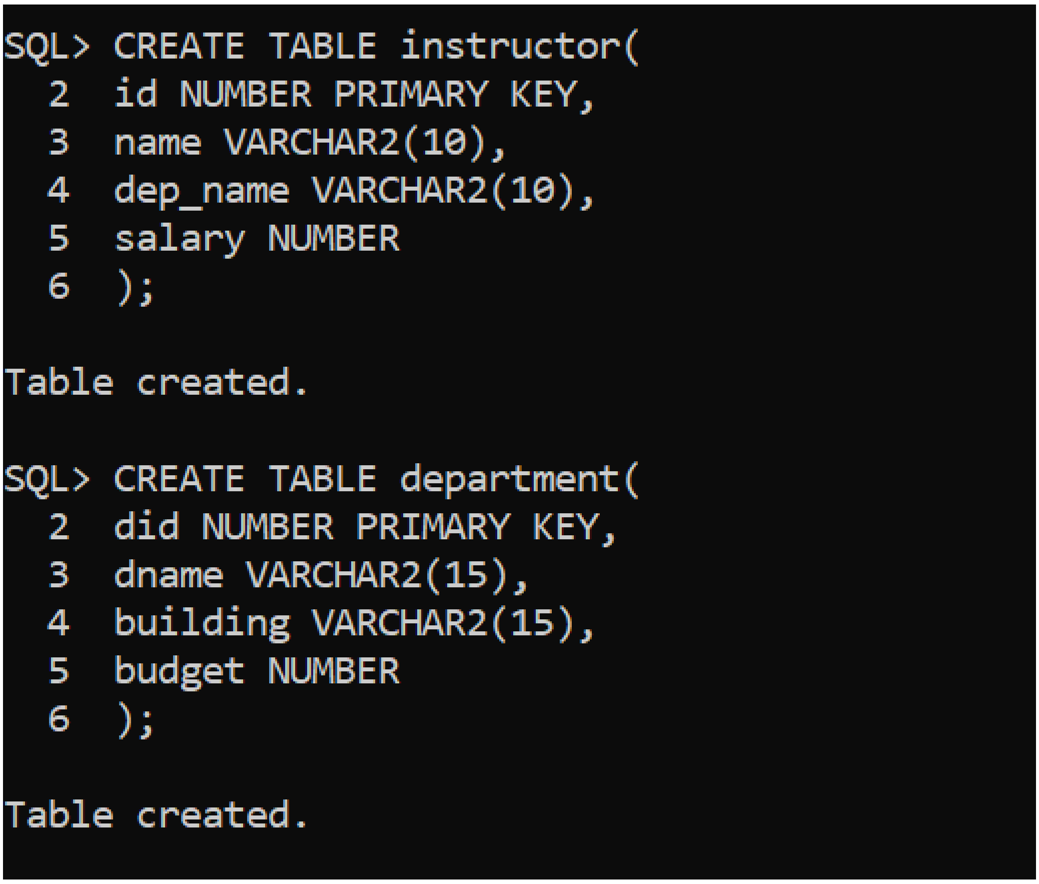
```
SQL> create table std(
  2  sid NUMBER,
  3  sname VARCHAR2(10),
  4  AGE INT
  5  );

Table created.

SQL> DROP TABLE STD;

Table dropped.
```



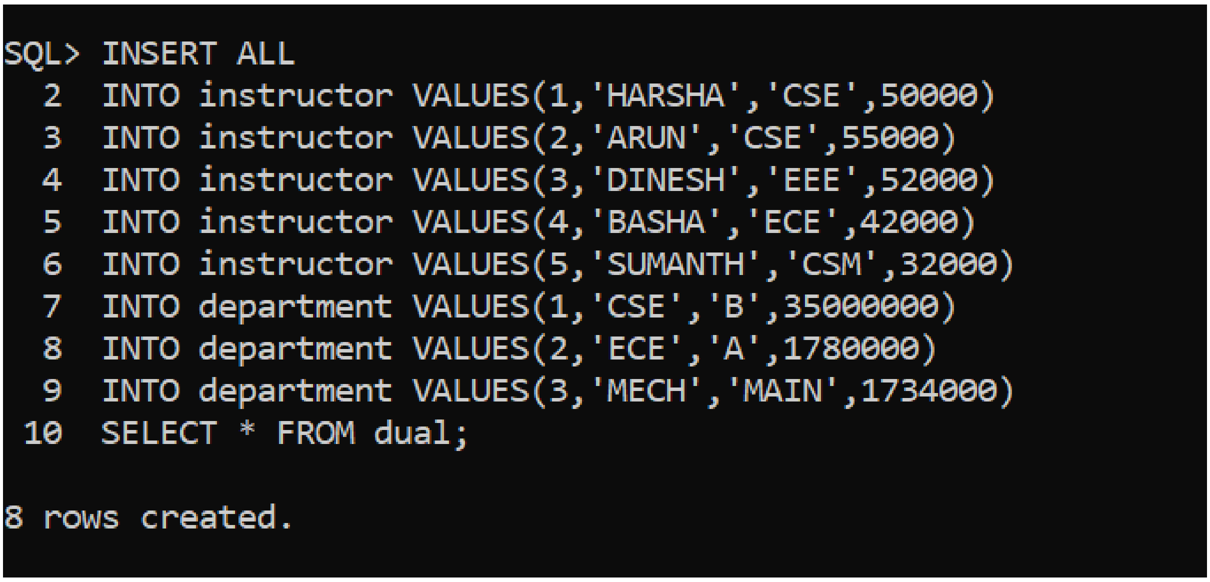
```
SQL> truncate table students;

Table truncated.

SQL> select * from students;

no rows selected
```

EXPERIMENT_4

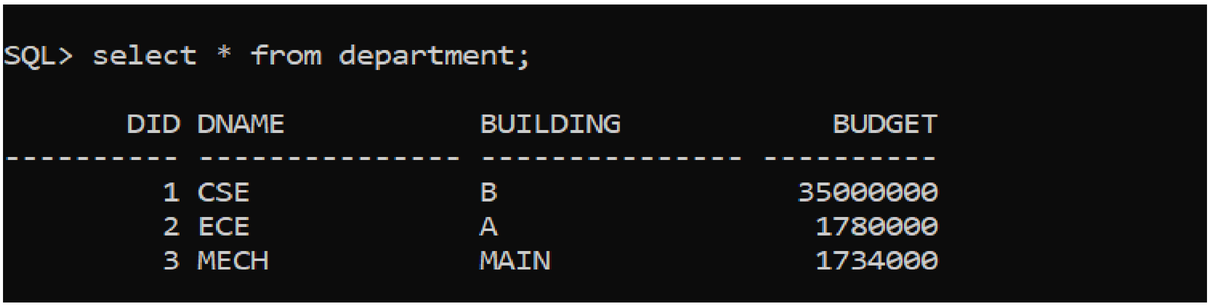
ROLL NO : 224G1A0546   NAME : MAHAMMAD THANVEER



```
SQL> CREATE TABLE instructor(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(10),
  4  dep_name VARCHAR2(10),
  5  salary NUMBER
  6  );

Table created.

SQL> CREATE TABLE department(
  2  did NUMBER PRIMARY KEY,
  3  dname VARCHAR2(15),
  4  building VARCHAR2(15),
  5  budget NUMBER
  6  );

Table created.
```



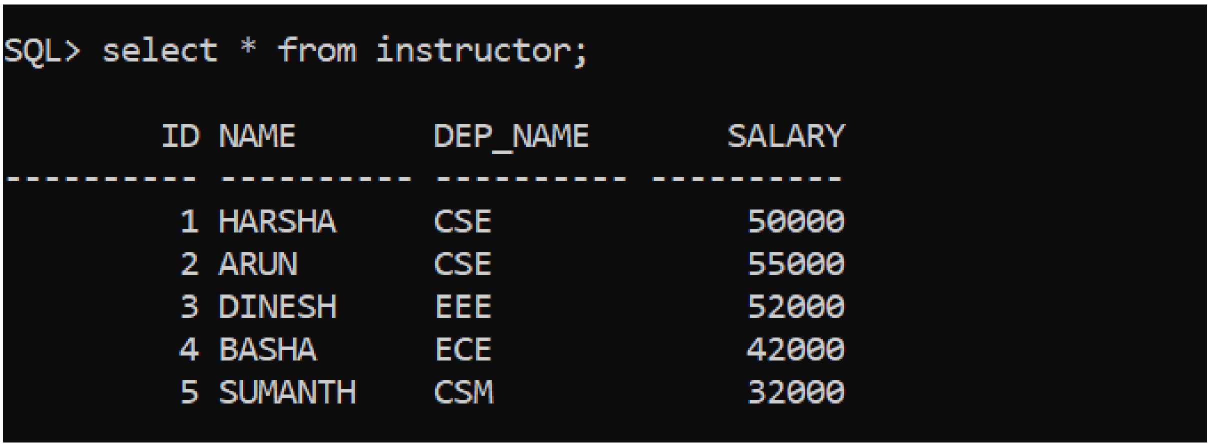
```
SQL> INSERT ALL
  2  INTO instructor VALUES(1,'HARSHA','CSE',50000)
  3  INTO instructor VALUES(2,'ARUN','CSE',55000)
  4  INTO instructor VALUES(3,'DINESH','EEE',52000)
  5  INTO instructor VALUES(4,'BASHA','ECE',42000)
  6  INTO instructor VALUES(5,'SUMANTH','CSM',32000)
  7  INTO department VALUES(1,'CSE','B',35000000)
  8  INTO department VALUES(2,'ECE','A',1780000)
  9  INTO department VALUES(3,'MECH','MAIN',1734000)
 10  SELECT * FROM dual;

8 rows created.
```



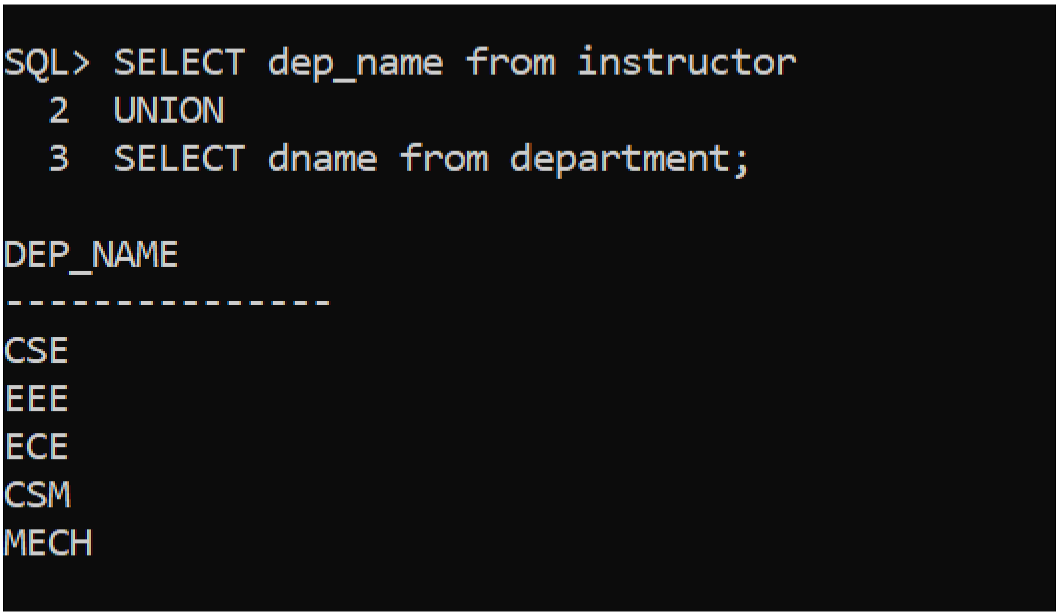
```
SQL> select * from department;

       DID DNAME           BUILDING            BUDGET
---------- --------------- --------------- ----------
         1 CSE             B                 35000000
         2 ECE             A                  1780000
         3 MECH            MAIN               1734000
```

EXPERIMENT_4

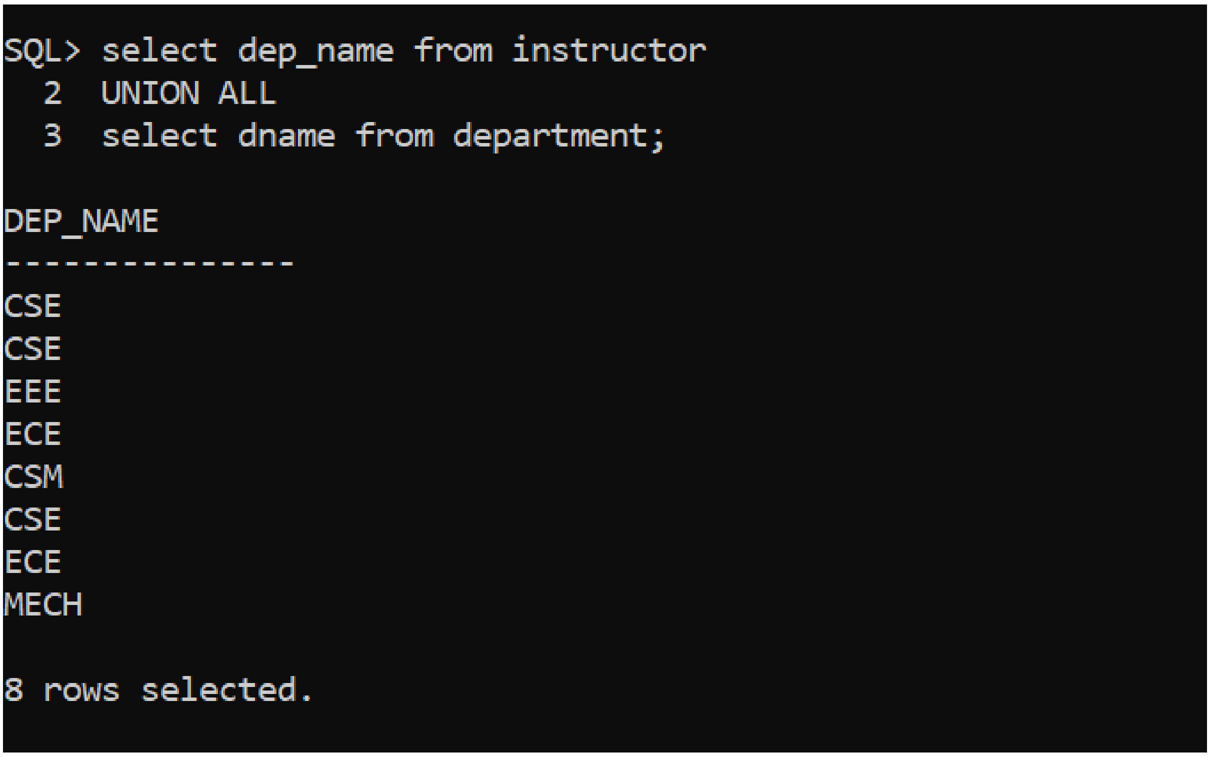
ROLL NO : 224G1A0546   NAME : MAHAMMAD THANVEER



```
SQL> select * from instructor;

        ID NAME       DEP_NAME       SALARY
---------- ---------- ---------- ----------
         1 HARSHA     CSE             50000
         2 ARUN       CSE             55000
         3 DINESH     EEE             52000
         4 BASHA      ECE             42000
         5 SUMANTH    CSM             32000
```



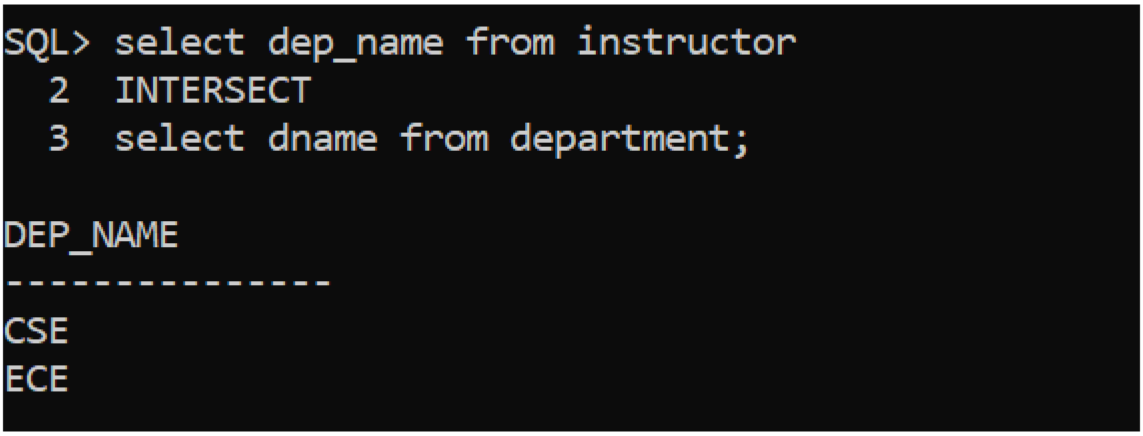
```
SQL> SELECT dep_name from instructor
  2  UNION
  3  SELECT dname from department;

DEP_NAME
---------------
CSE
EEE
ECE
CSM
MECH
```



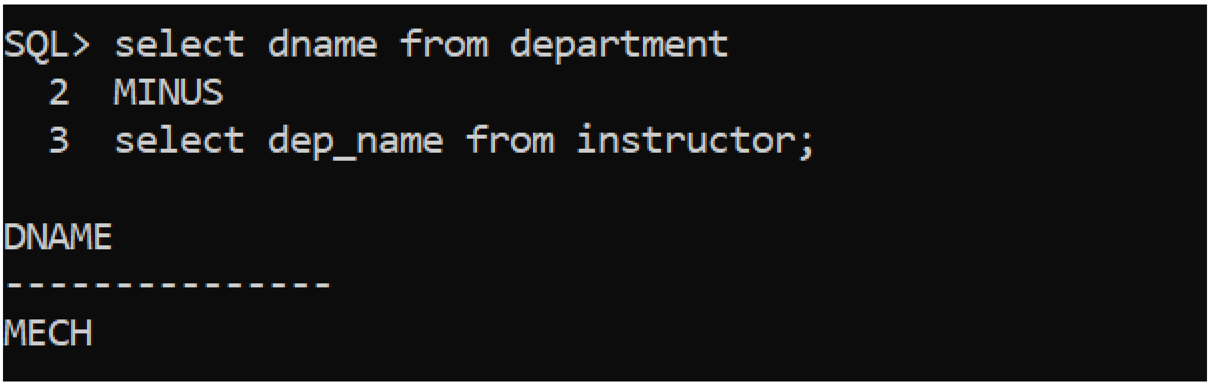
```
SQL> select dep_name from instructor
  2  UNION ALL
  3  select dname from department;

DEP_NAME
---------------
CSE
CSE
EEE
ECE
CSM
CSE
ECE
MECH

8 rows selected.
```

EXPERIMENT_4

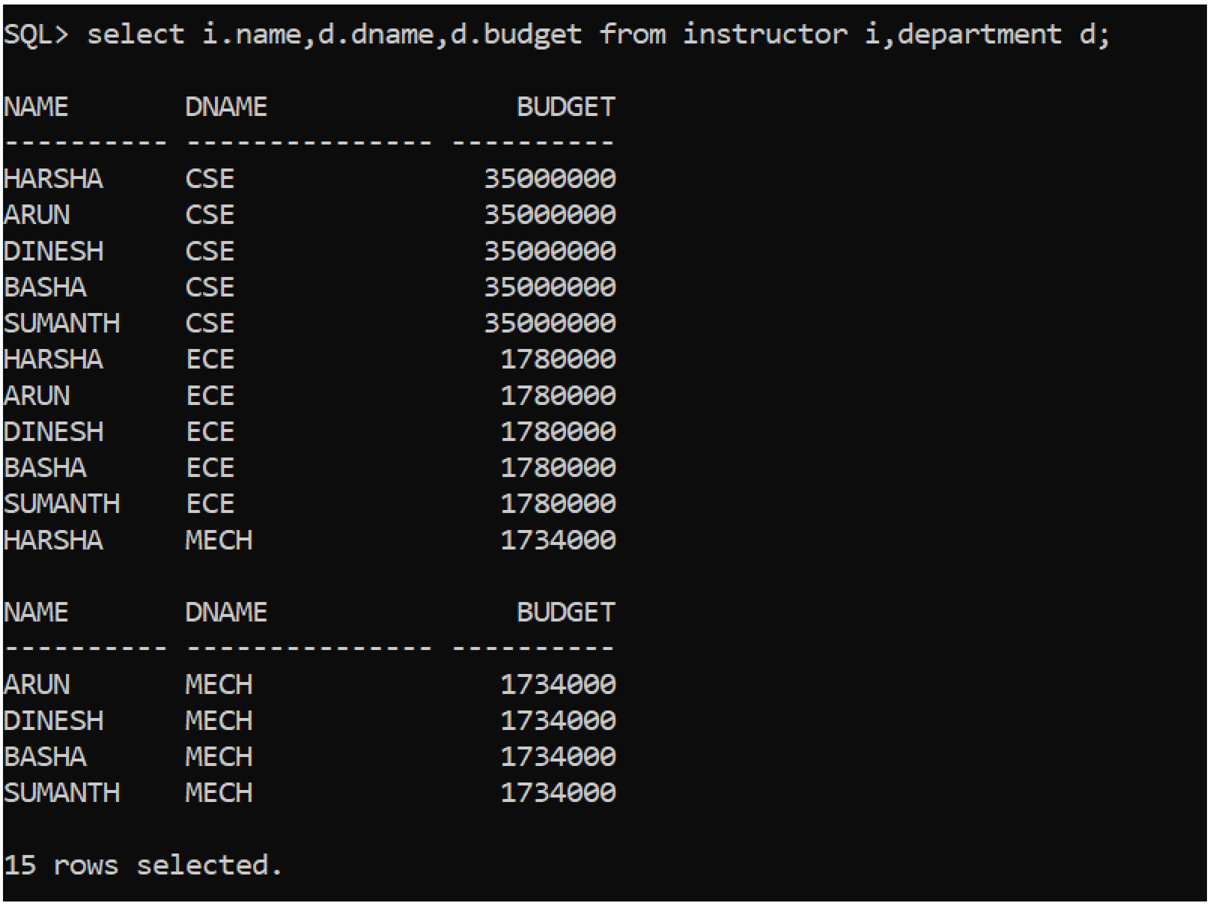
ROLL NO : 224G1A0546 NAME : MAHAMMAD THANVEER



```
SQL> select dep_name from instructor
  2  INTERSECT
  3  select dname from department;

DEP_NAME
---------------
CSE
ECE
```



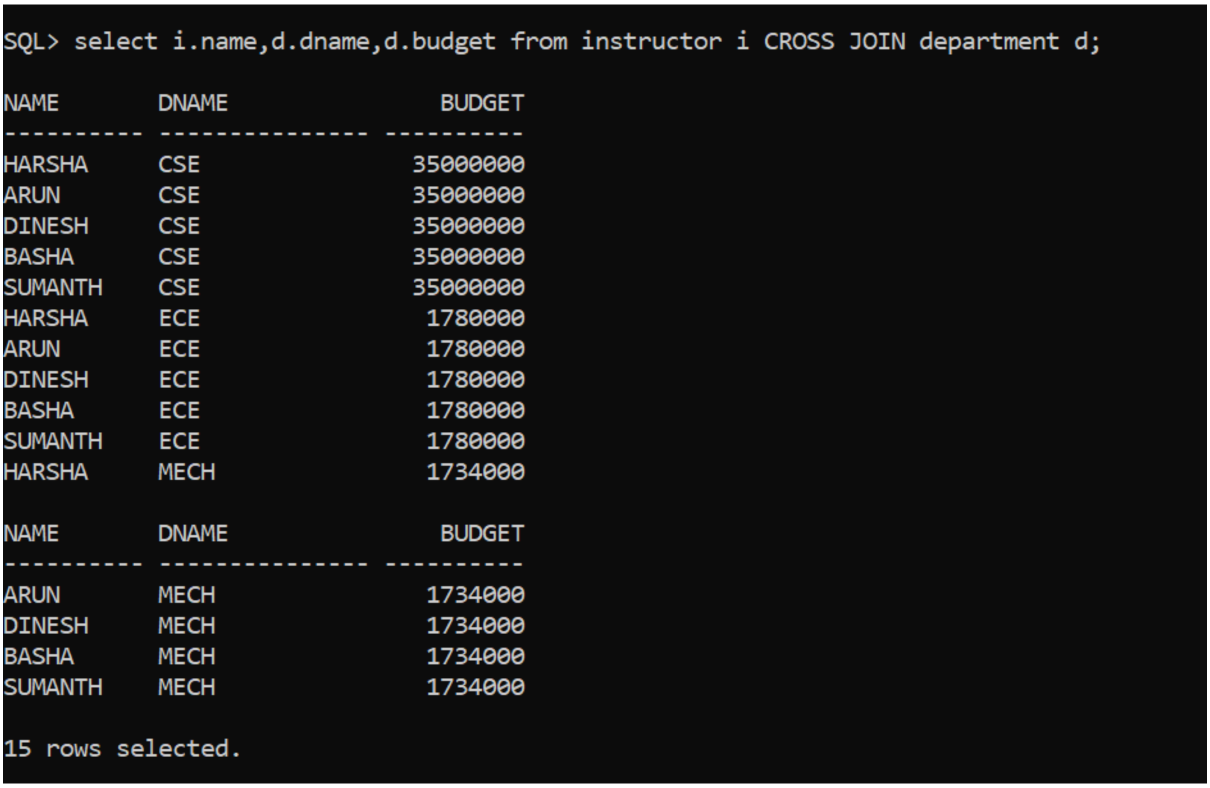
```
SQL> select dname from department
  2  MINUS
  3  select dep_name from instructor;

DNAME
---------------
MECH
```



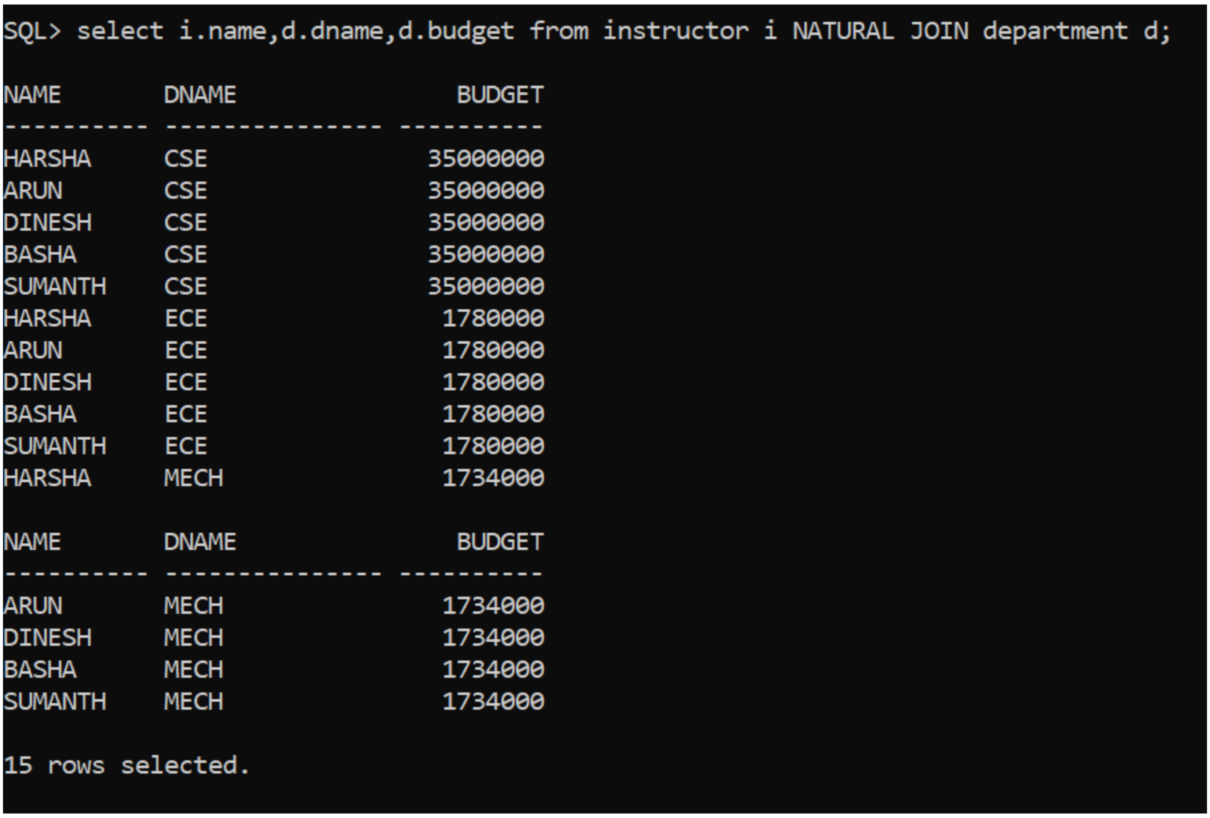
```
SQL> select i.name,d.dname,d.budget from instructor i,department d;

NAME       DNAME               BUDGET
---------- --------------- ----------
HARSHA     CSE               35000000
ARUN       CSE               35000000
DINESH     CSE               35000000
BASHA      CSE               35000000
SUMANTH    CSE               35000000
HARSHA     ECE                1780000
ARUN       ECE                1780000
DINESH     ECE                1780000
BASHA      ECE                1780000
SUMANTH    ECE                1780000
HARSHA     MECH               1734000

NAME       DNAME               BUDGET
---------- --------------- ----------
ARUN       MECH               1734000
DINESH     MECH               1734000
BASHA      MECH               1734000
SUMANTH    MECH               1734000

15 rows selected.
```

EXPERIMENT_4

ROLL NO : 224G1A0546   NAME : MAHAMMAD THANVEER



```
SQL> select i.name,d.dname,d.budget from instructor i CROSS JOIN department d;

NAME       DNAME               BUDGET
---------- --------------- ----------
HARSHA     CSE               35000000
ARUN       CSE               35000000
DINESH     CSE               35000000
BASHA      CSE               35000000
SUMANTH    CSE               35000000
HARSHA     ECE                1780000
ARUN       ECE                1780000
DINESH     ECE                1780000
BASHA      ECE                1780000
SUMANTH    ECE                1780000
HARSHA     MECH               1734000

NAME       DNAME               BUDGET
---------- --------------- ----------
ARUN       MECH               1734000
DINESH     MECH               1734000
BASHA      MECH               1734000
SUMANTH    MECH               1734000

15 rows selected.
```



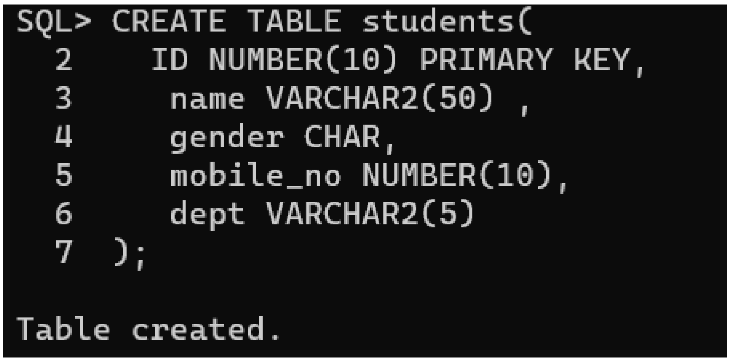
```
SQL> select i.name,d.dname,d.budget from instructor i NATURAL JOIN department d;

NAME       DNAME               BUDGET
---------- --------------- ----------
HARSHA     CSE               35000000
ARUN       CSE               35000000
DINESH     CSE               35000000
BASHA      CSE               35000000
SUMANTH    CSE               35000000
HARSHA     ECE                1780000
ARUN       ECE                1780000
DINESH     ECE                1780000
BASHA      ECE                1780000
SUMANTH    ECE                1780000
HARSHA     MECH               1734000

NAME       DNAME               BUDGET
---------- --------------- ----------
ARUN       MECH               1734000
DINESH     MECH               1734000
BASHA      MECH               1734000
SUMANTH    MECH               1734000

15 rows selected.
```

EXPERIMENT – 3

224G1A0546 MAHAMMAD THANVEER P

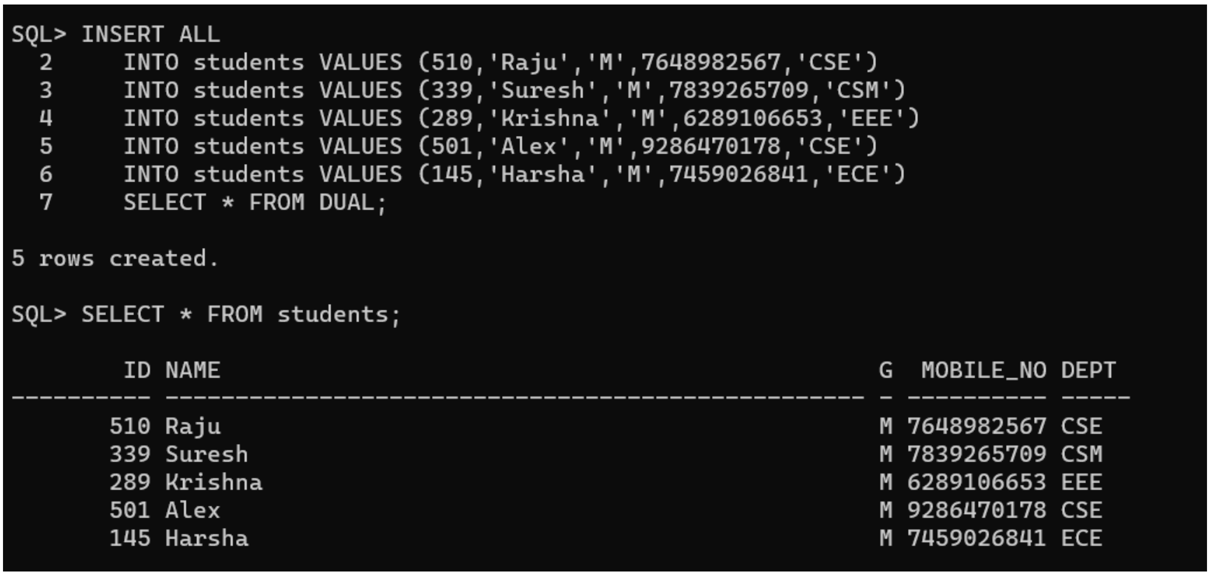
AIM: To design VIEWS for various databases using DDL commands

Creating a table :



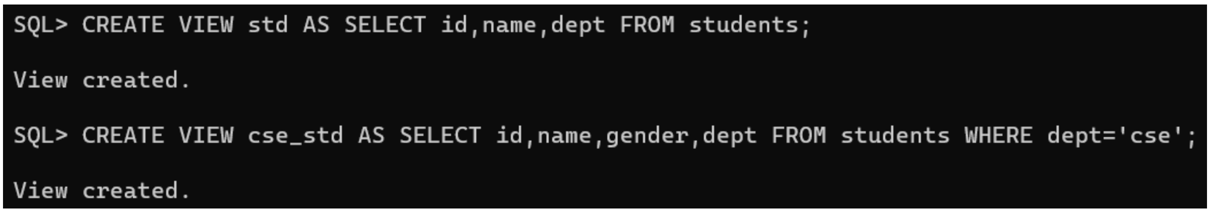
```
SQL> CREATE TABLE students(
       ID NUMBER(10) PRIMARY KEY,
        name VARCHAR2(50) ,
        gender CHAR,
        mobile_no NUMBER(10),
        dept VARCHAR2(5)
     );

Table created.
```

Inserting values into the table :

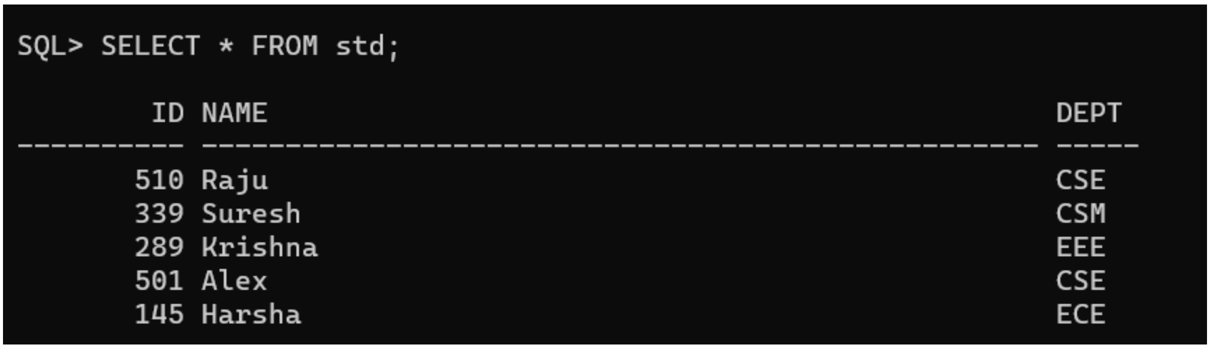


```
SQL> INSERT ALL
        INTO students VALUES (510,'Raju','M',7648982567,'CSE')
        INTO students VALUES (339,'Suresh','M',7839265709,'CSM')
        INTO students VALUES (289,'Krishna','M',6289106653,'EEE')
        INTO students VALUES (501,'Alex','M',9286470178,'CSE')
        INTO students VALUES (145,'Harsha','M',7459026841,'ECE')
        SELECT * FROM DUAL;

5 rows created.

SQL> SELECT * FROM students;

        ID NAME                                               G  MOBILE_NO DEPT
---------- -------------------------------------------------- - ---------- -----
       510 Raju                                               M 7648982567 CSE
       339 Suresh                                             M 7839265709 CSM
       289 Krishna                                            M 6289106653 EEE
       501 Alex                                               M 9286470178 CSE
       145 Harsha                                             M 7459026841 ECE
```

Creating a VIEW :

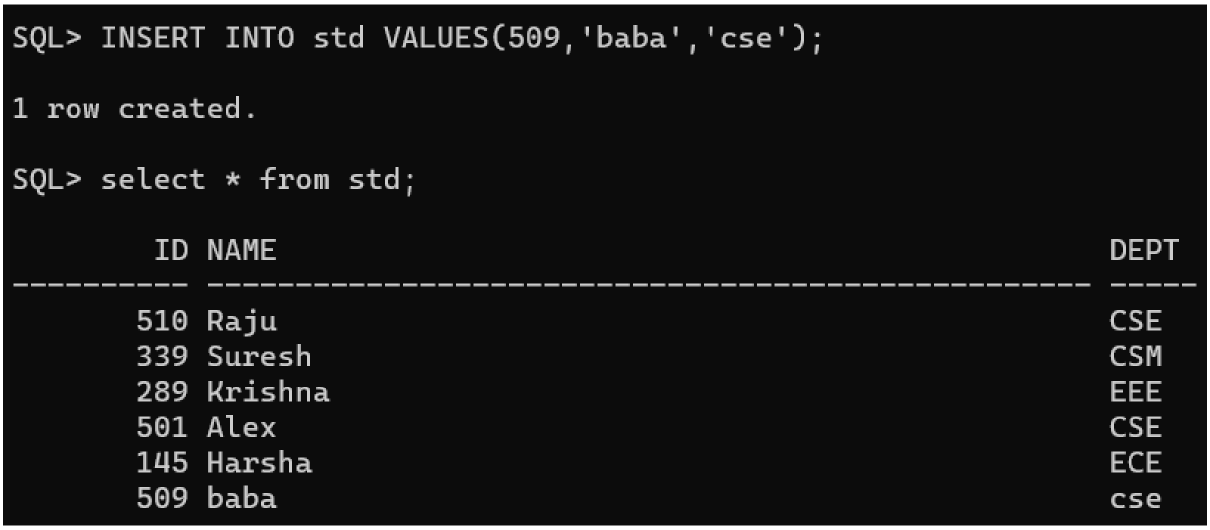


```
SQL> CREATE VIEW std AS SELECT id,name,dept FROM students;

View created.

SQL> CREATE VIEW cse_std AS SELECT id,name,gender,dept FROM students WHERE dept='cse';

View created.
```



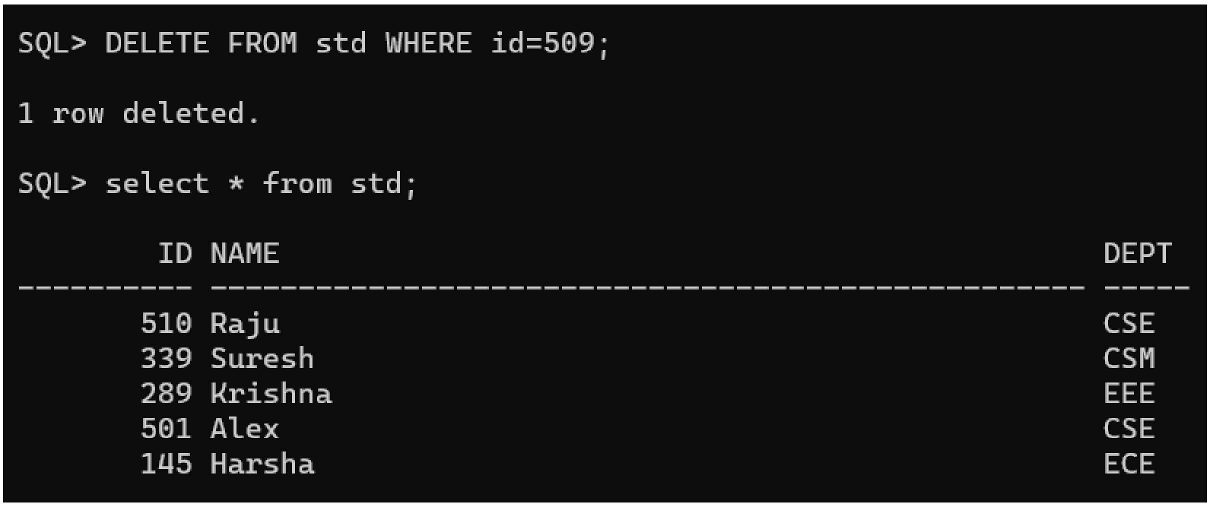
```
SQL> SELECT * FROM std;

        ID NAME                                               DEPT
---------- -------------------------------------------------- -----
       510 Raju                                               CSE
       339 Suresh                                             CSM
       289 Krishna                                            EEE
       501 Alex                                               CSE
       145 Harsha                                             ECE
```

Inserting values into the table :



```
SQL> INSERT INTO std VALUES(509,'baba','cse');

1 row created.

SQL> select * from std;

        ID NAME                                               DEPT
---------- -------------------------------------------------- -----
       510 Raju                                               CSE
       339 Suresh                                             CSM
       289 Krishna                                            EEE
       501 Alex                                               CSE
       145 Harsha                                             ECE
       509 baba                                               cse
```

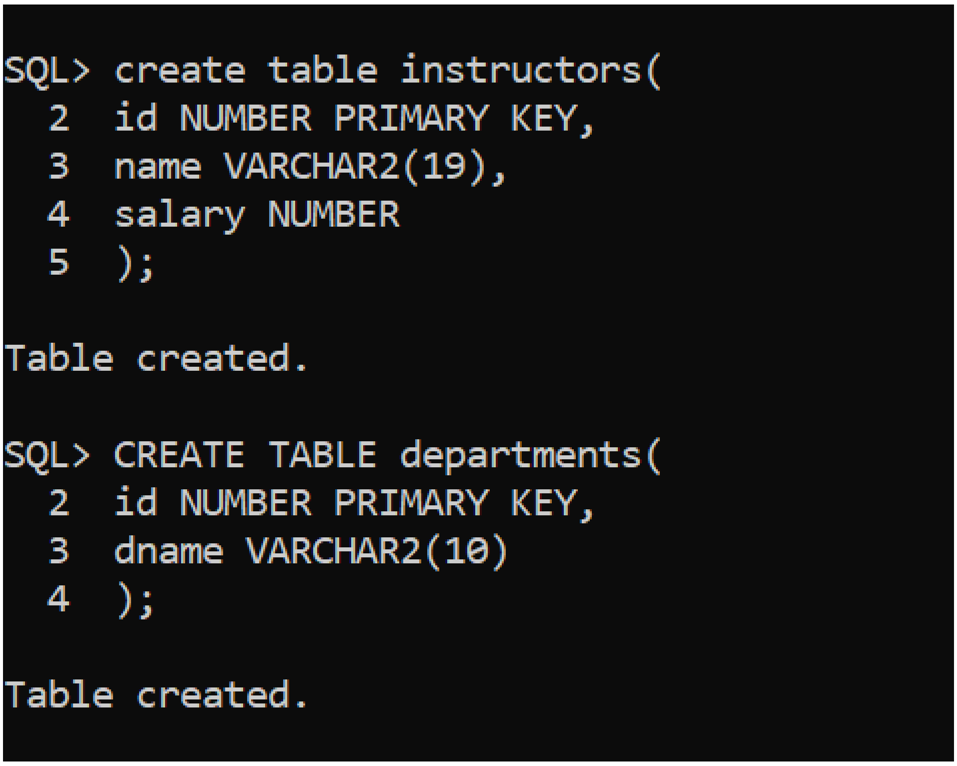
Deleting rows in a VIEW :



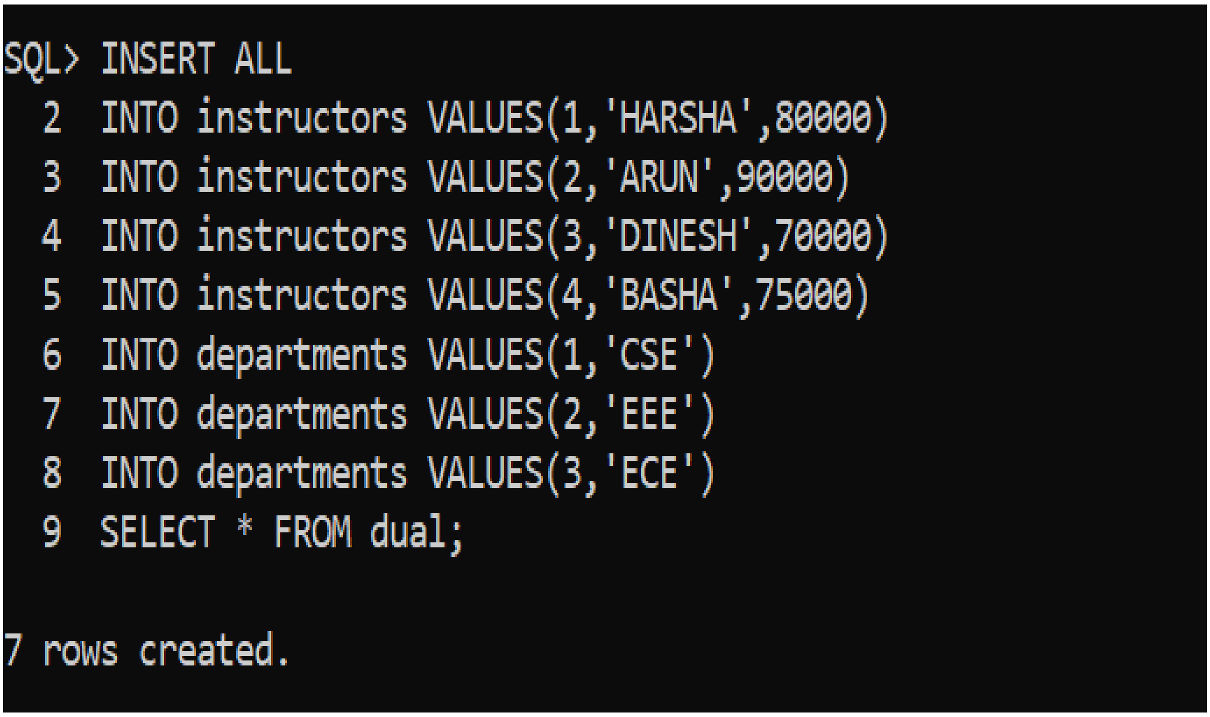
```
SQL> DELETE FROM std WHERE id=509;

1 row deleted.

SQL> select * from std;

        ID NAME                                               DEPT
---------- -------------------------------------------------- -----
       510 Raju                                               CSE
       339 Suresh                                             CSM
       289 Krishna                                            EEE
       501 Alex                                               CSE
       145 Harsha                                             ECE
```

EXPERIMENT_5

ROLL NO: 224G1A0546 NAME : MAHAMMAD THANVEER P



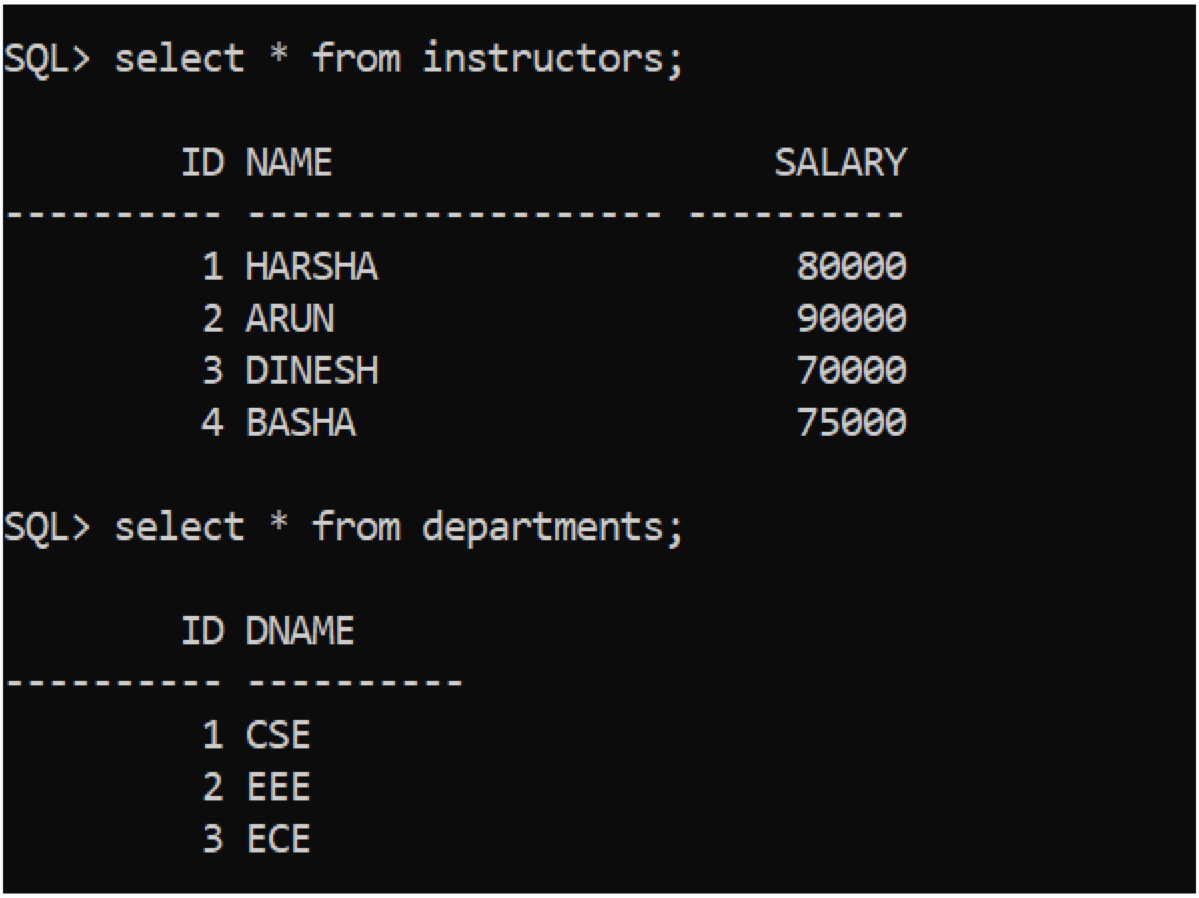
```
SQL> create table instructors(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(19),
  4  salary NUMBER
  5  );

Table created.

SQL> CREATE TABLE departments(
  2  id NUMBER PRIMARY KEY,
  3  dname VARCHAR2(10)
  4  );

Table created.
```



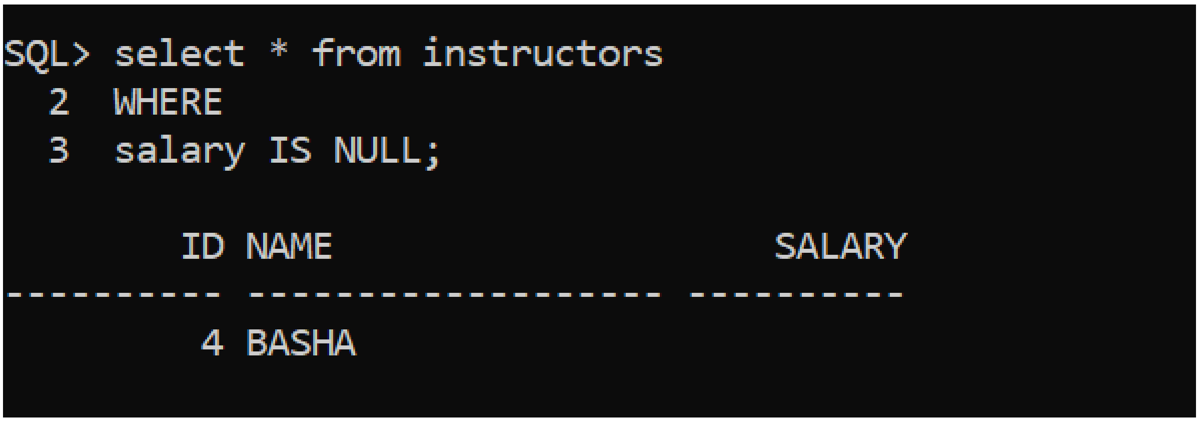
```
SQL> INSERT ALL
  2  INTO instructors VALUES(1,'HARSHA',80000)
  3  INTO instructors VALUES(2,'ARUN',90000)
  4  INTO instructors VALUES(3,'DINESH',70000)
  5  INTO instructors VALUES(4,'BASHA',75000)
  6  INTO departments VALUES(1,'CSE')
  7  INTO departments VALUES(2,'EEE')
  8  INTO departments VALUES(3,'ECE')
  9  SELECT * FROM dual;

7 rows created.
```

EXPERIMENT_5

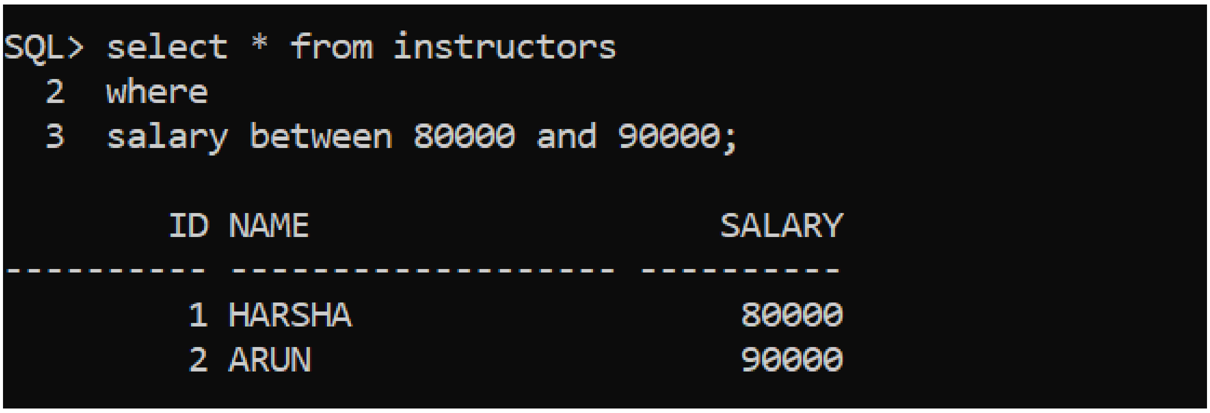
ROLL NO: 224G1A0546 NAME : MAHAMMAD THANVEER P



```
SQL> select * from instructors;

        ID NAME                     SALARY
---------- -------------------- ----------
         1 HARSHA                    80000
         2 ARUN                      90000
         3 DINESH                    70000
         4 BASHA                     75000

SQL> select * from departments;

        ID DNAME
---------- ----------
         1 CSE
         2 EEE
         3 ECE
```



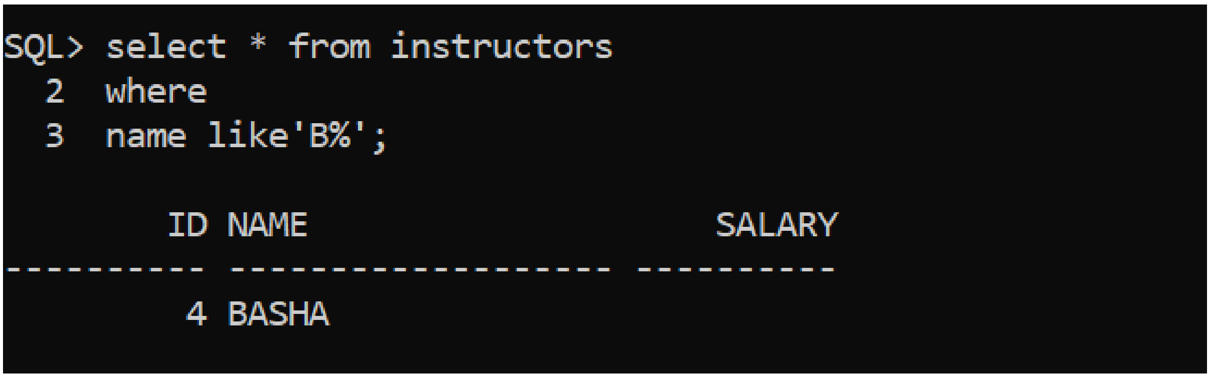
```
SQL> select * from instructors
  2  WHERE
  3  salary IS NULL;

        ID NAME                     SALARY
---------- -------------------- ----------
         4 BASHA
```



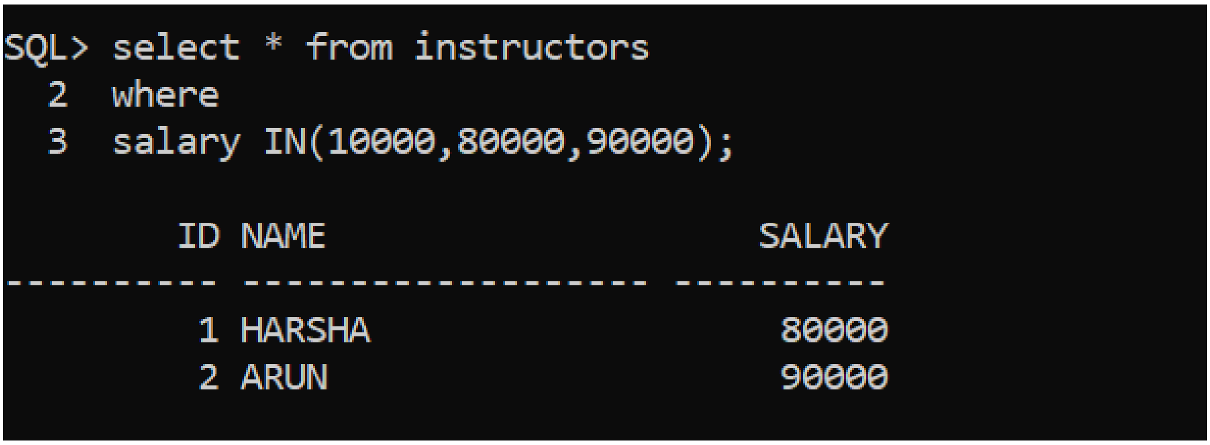
```
SQL> select * from instructors
  2  where
  3  salary between 80000 and 90000;

        ID NAME                     SALARY
---------- -------------------- ----------
         1 HARSHA                    80000
         2 ARUN                      90000
```

EXPERIMENT_5

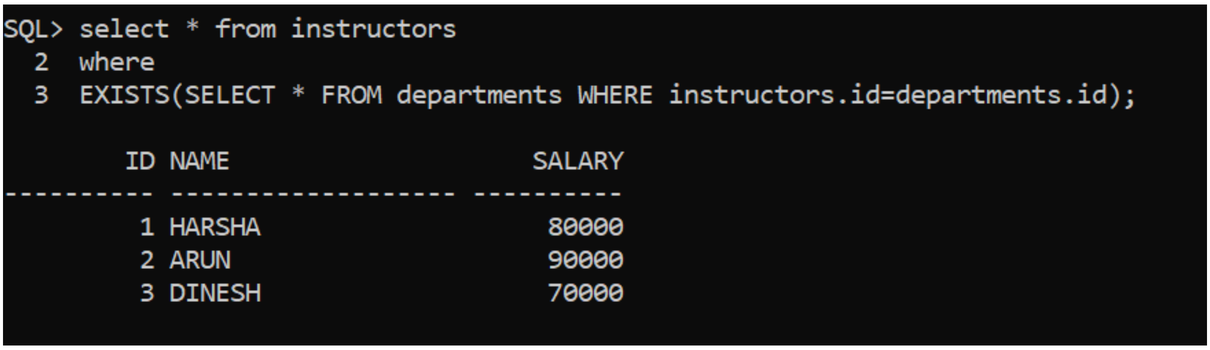
ROLL NO: 224G1A0546 NAME : MAHAMMAD THANVEER P



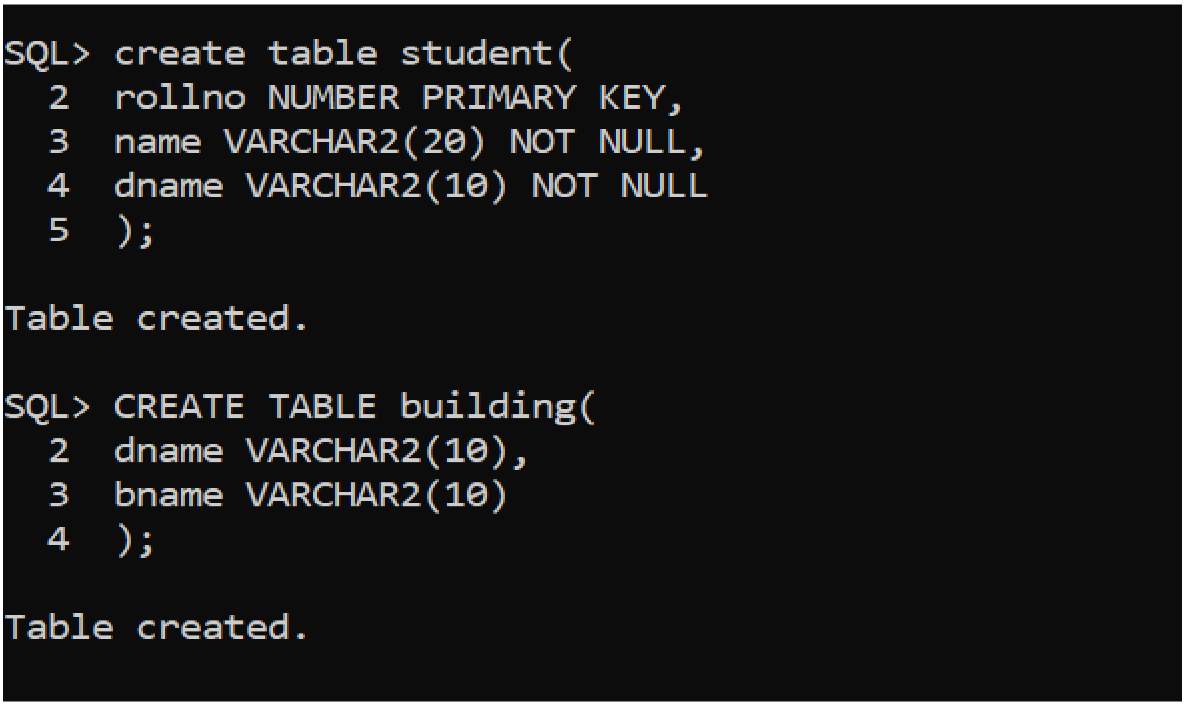
```
SQL> select * from instructors
  2  where
  3  name like'B%';

        ID NAME                     SALARY
---------- -------------------- ----------
         4 BASHA
```



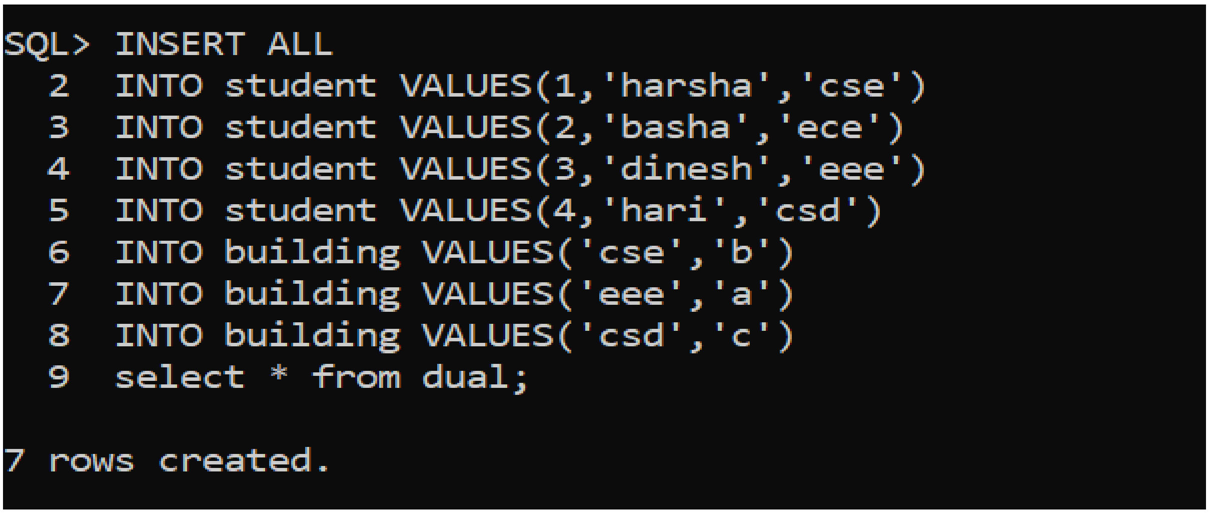
```
SQL> select * from instructors
  2  where
  3  salary IN(10000,80000,90000);

        ID NAME                     SALARY
---------- -------------------- ----------
         1 HARSHA                    80000
         2 ARUN                      90000
```



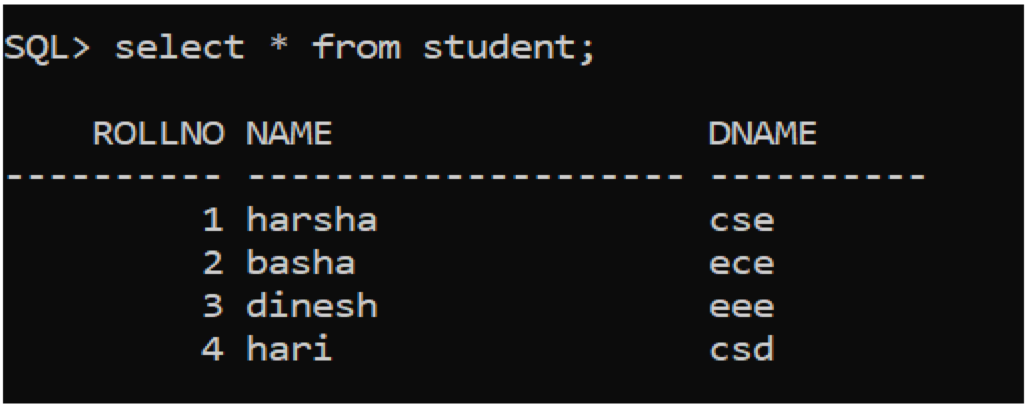
```
SQL> select * from instructors
  2  where
  3  EXISTS(SELECT * FROM departments WHERE instructors.id=departments.id);

        ID NAME                     SALARY
---------- -------------------- ----------
         1 HARSHA                    80000
         2 ARUN                      90000
         3 DINESH                    70000
```



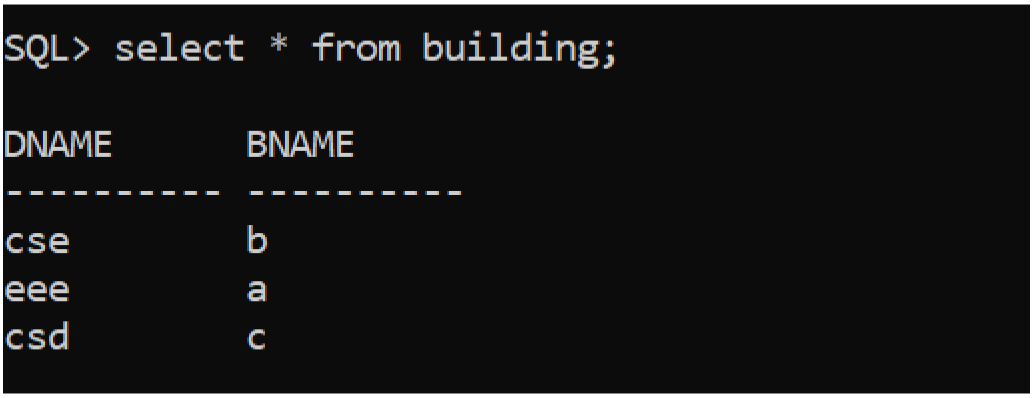
```
SQL> create table student(
  2  rollno NUMBER PRIMARY KEY,
  3  name VARCHAR2(20) NOT NULL,
  4  dname VARCHAR2(10) NOT NULL
  5  );

Table created.

SQL> CREATE TABLE building(
  2  dname VARCHAR2(10),
  3  bname VARCHAR2(10)
  4  );

Table created.
```



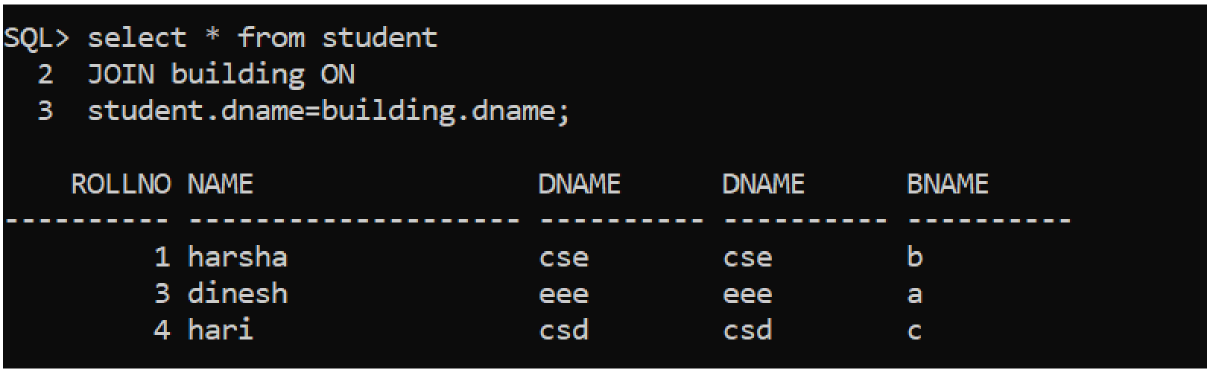
```
SQL> INSERT ALL
  2  INTO student VALUES(1,'harsha','cse')
  3  INTO student VALUES(2,'basha','ece')
  4  INTO student VALUES(3,'dinesh','eee')
  5  INTO student VALUES(4,'hari','csd')
  6  INTO building VALUES('cse','b')
  7  INTO building VALUES('eee','a')
  8  INTO building VALUES('csd','c')
  9  select * from dual;

7 rows created.
```



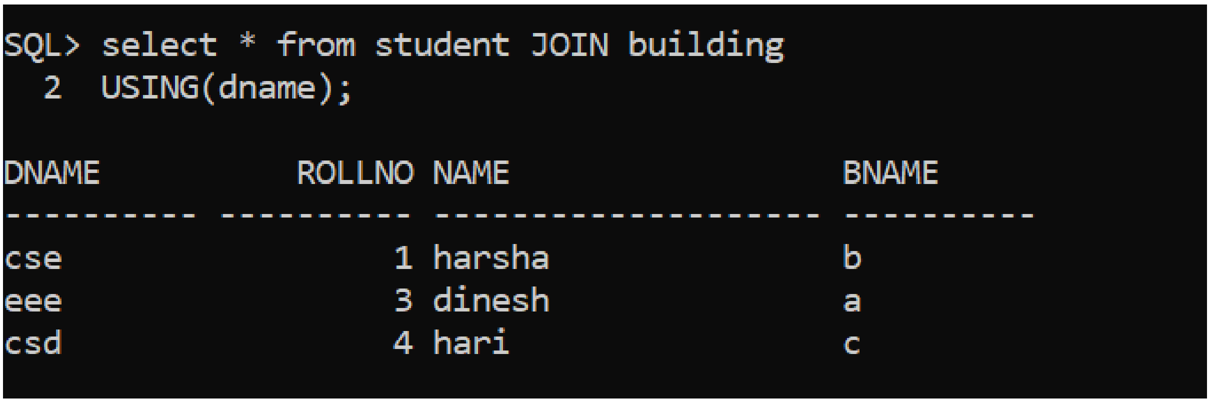
```
SQL> select * from student;

    ROLLNO NAME                 DNAME
---------- -------------------- ----------
         1 harsha               cse
         2 basha                ece
         3 dinesh               eee
         4 hari                 csd
```



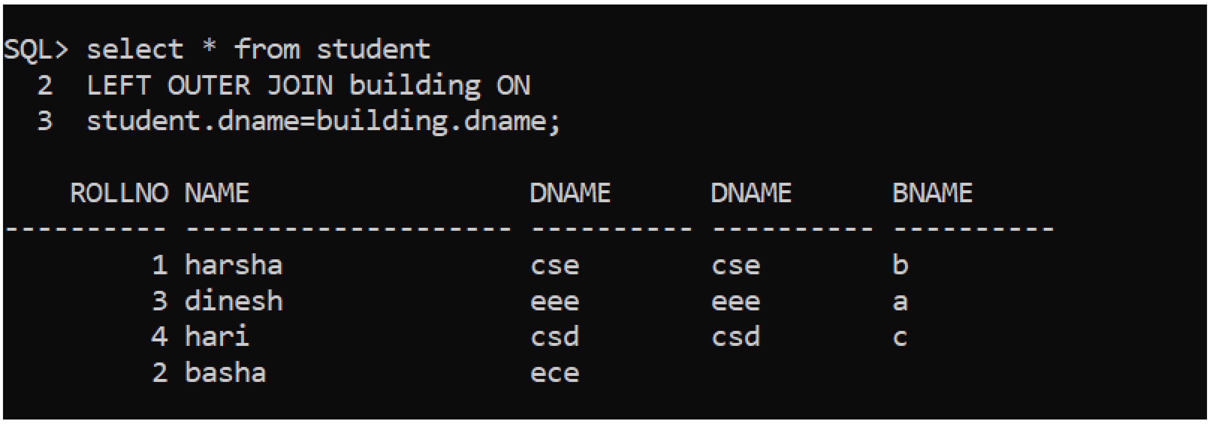
```
SQL> select * from building;

DNAME      BNAME
---------- ----------
cse        b
eee        a
csd        c
```



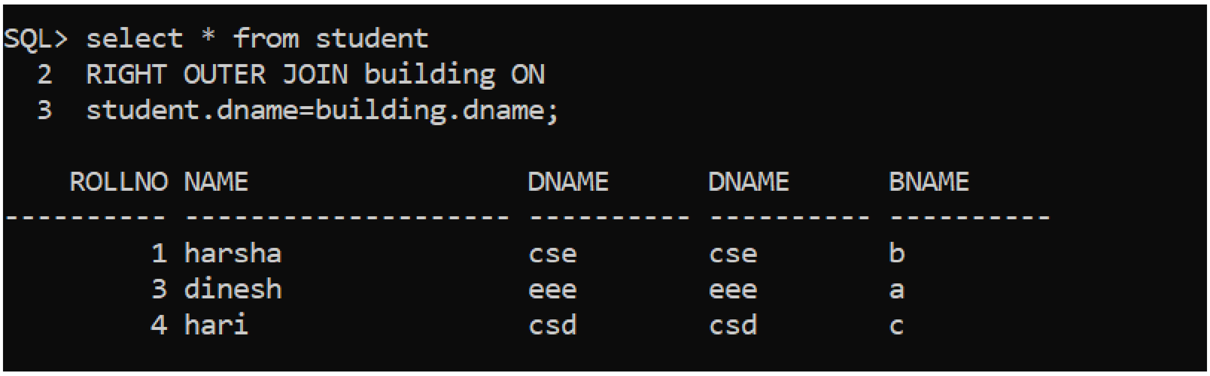
```
SQL> select * from student
  2  JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
```



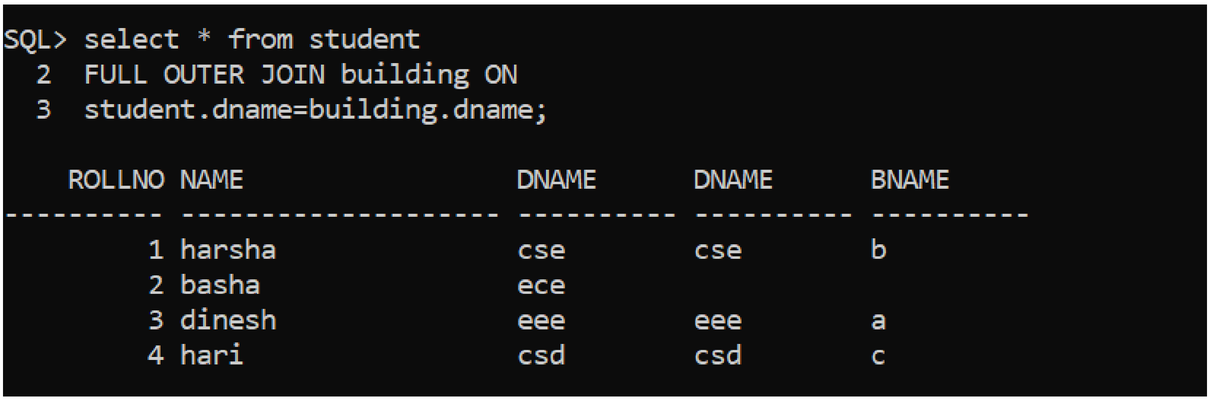
```
SQL> select * from student JOIN building
  2  USING(dname);

DNAME          ROLLNO NAME                 BNAME
---------- ---------- -------------------- ----------
cse                 1 harsha               b
eee                 3 dinesh               a
csd                 4 hari                 c
```



```
SQL> select * from student
  2  LEFT OUTER JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
         2 basha                ece
```



```
SQL> select * from student
  2  RIGHT OUTER JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
```



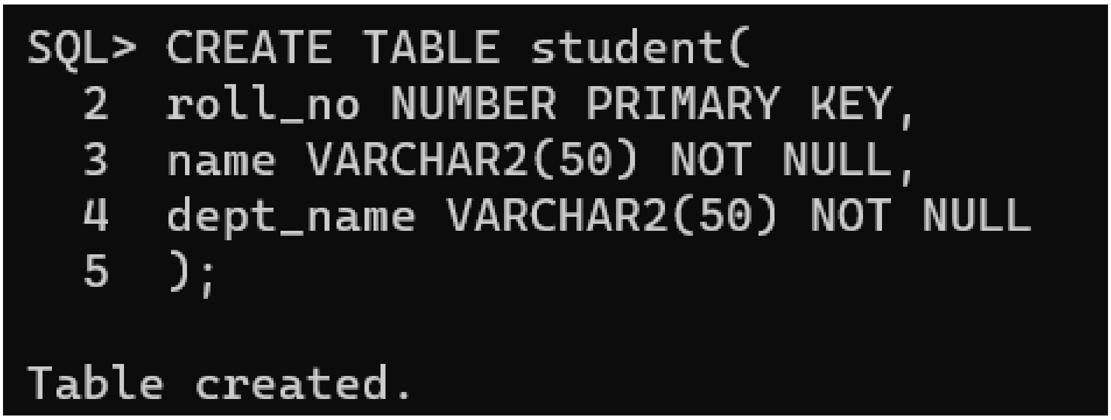
```
SQL> select * from student
  2  FULL OUTER JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         2 basha                ece
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
```

Experiment – 7

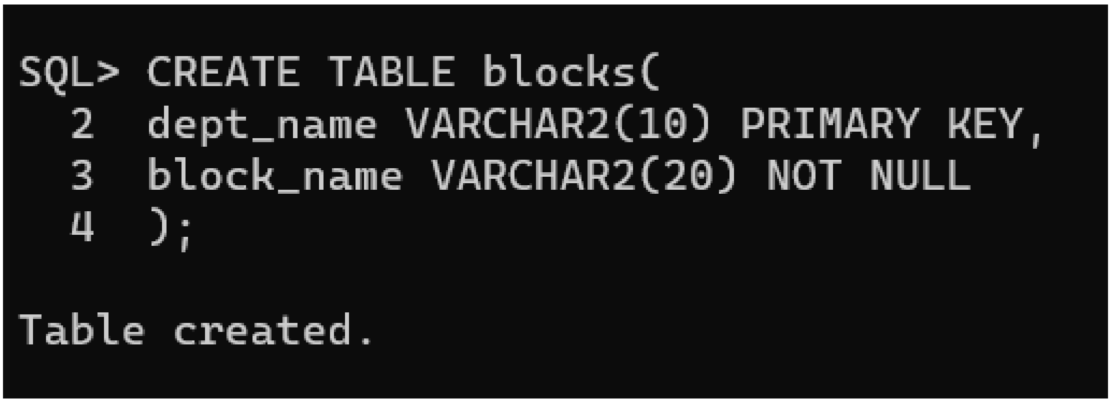
224G1A0546 MAHAMMAD THANVEER P

AIM : To writer SQL queries to perform JOIN OPERATIONS(i.e. CONDITIONAL JOIN ,EQUAL JOIN,LEFT OUTER JOIN,RIGHT OUTER JOIN,FULL OUTER JOIN).

Creating a table :

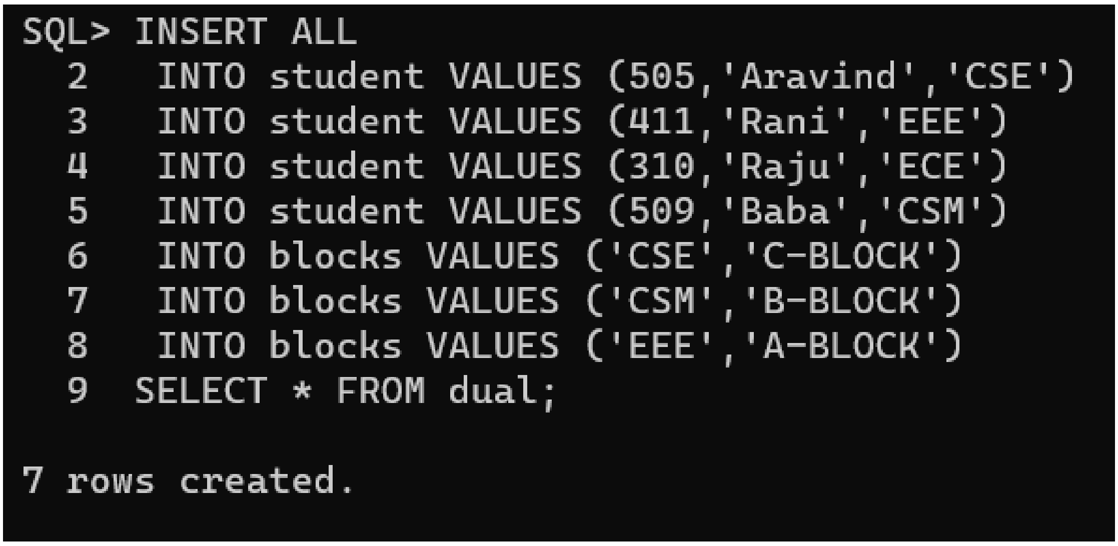


```
SQL> CREATE TABLE student(
     roll_no NUMBER PRIMARY KEY,
     name VARCHAR2(50) NOT NULL,
     dept_name VARCHAR2(50) NOT NULL
     );

Table created.
```



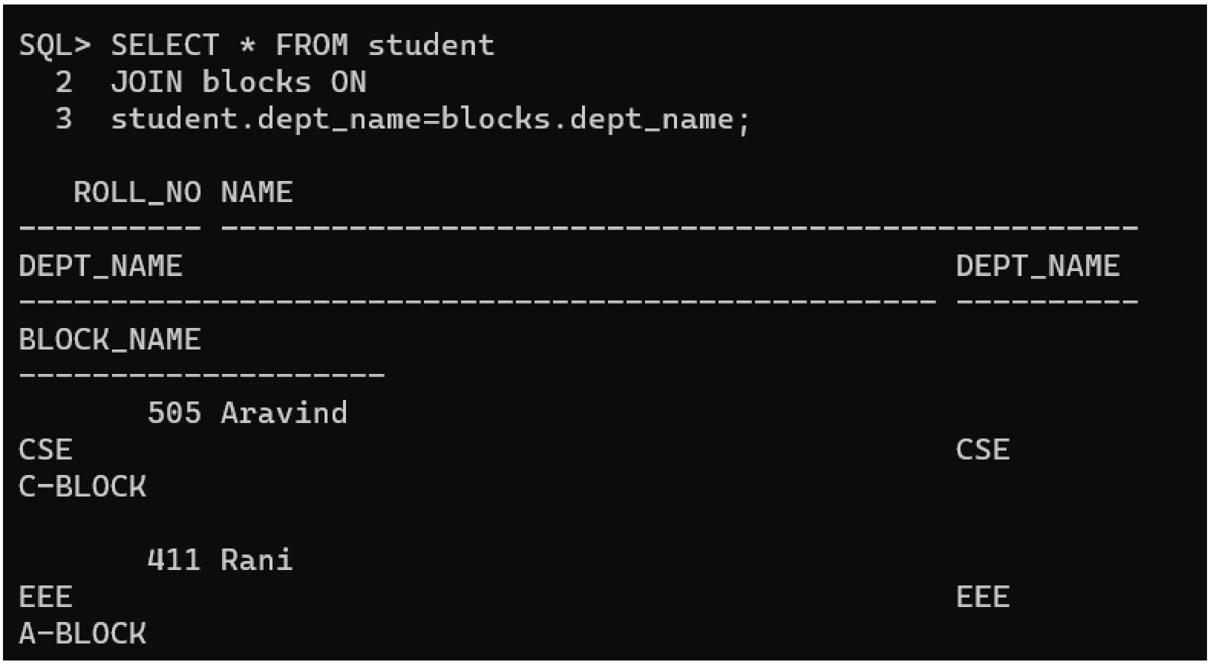
```
SQL> CREATE TABLE blocks(
     dept_name VARCHAR2(10) PRIMARY KEY,
     block_name VARCHAR2(20) NOT NULL
     );

Table created.
```

INSERTING VALUES INTO THE TABLE :



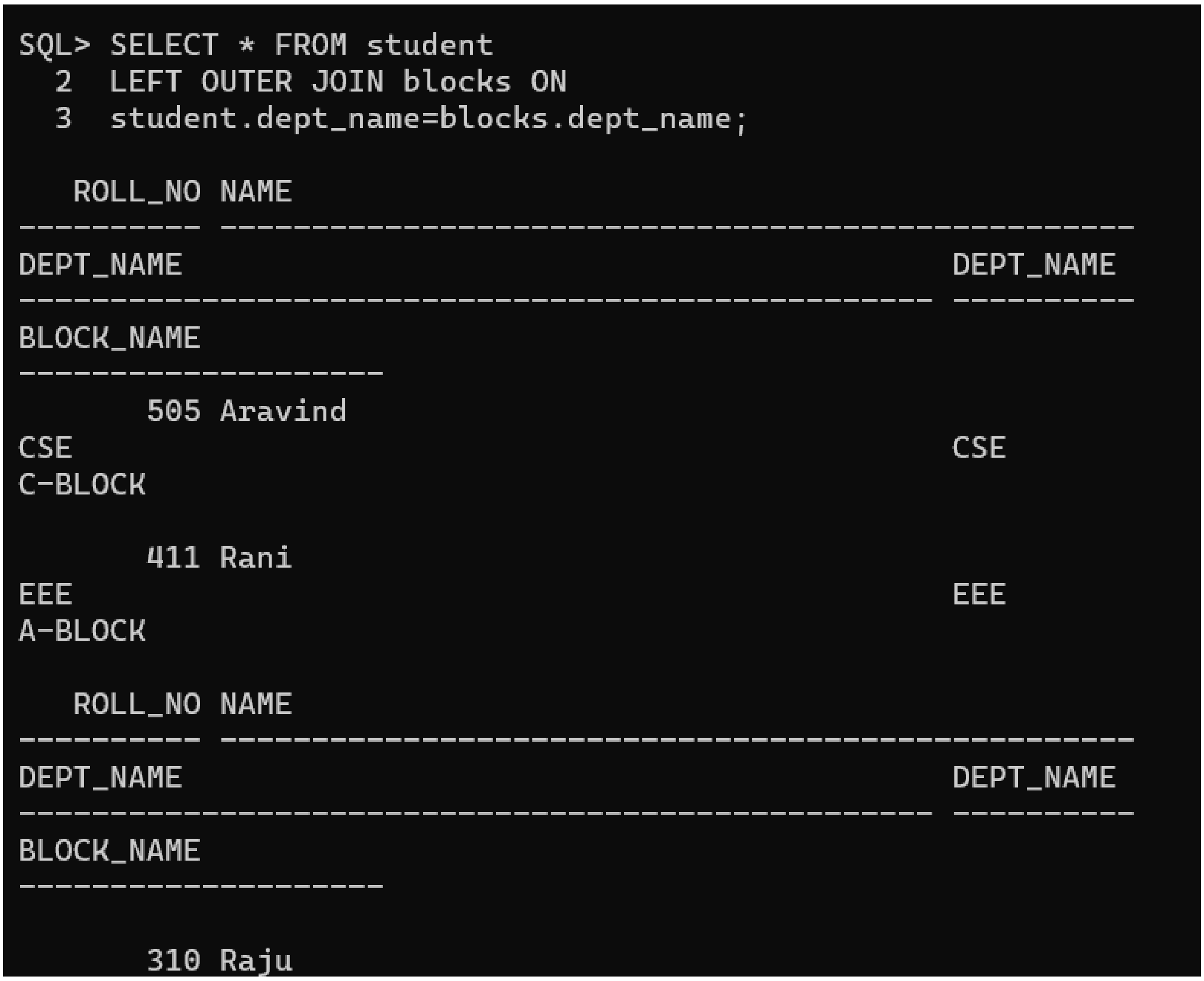
```
SQL> INSERT ALL
  2   INTO student VALUES (505,'Aravind','CSE')
  3   INTO student VALUES (411,'Rani','EEE')
  4   INTO student VALUES (310,'Raju','ECE')
  5   INTO student VALUES (509,'Baba','CSM')
  6   INTO blocks VALUES ('CSE','C-BLOCK')
  7   INTO blocks VALUES ('CSM','B-BLOCK')
  8   INTO blocks VALUES ('EEE','A-BLOCK')
  9  SELECT * FROM dual;

7 rows created.
```

IS NULL :



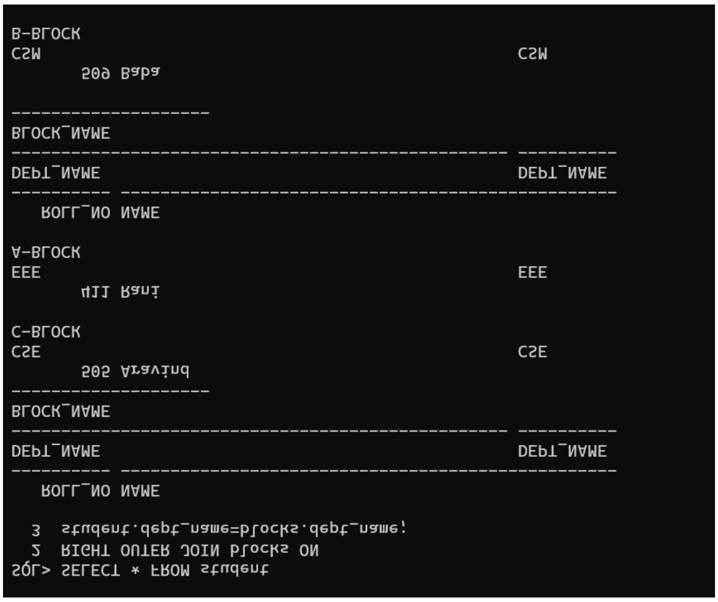
```
SQL> SELECT * FROM student
  2  JOIN blocks ON
  3  student.dept_name=blocks.dept_name;

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------
       505 Aravind
CSE                                                CSE
C-BLOCK

       411 Rani
EEE                                                EEE
A-BLOCK
```

LEFT OUTER JOIN :



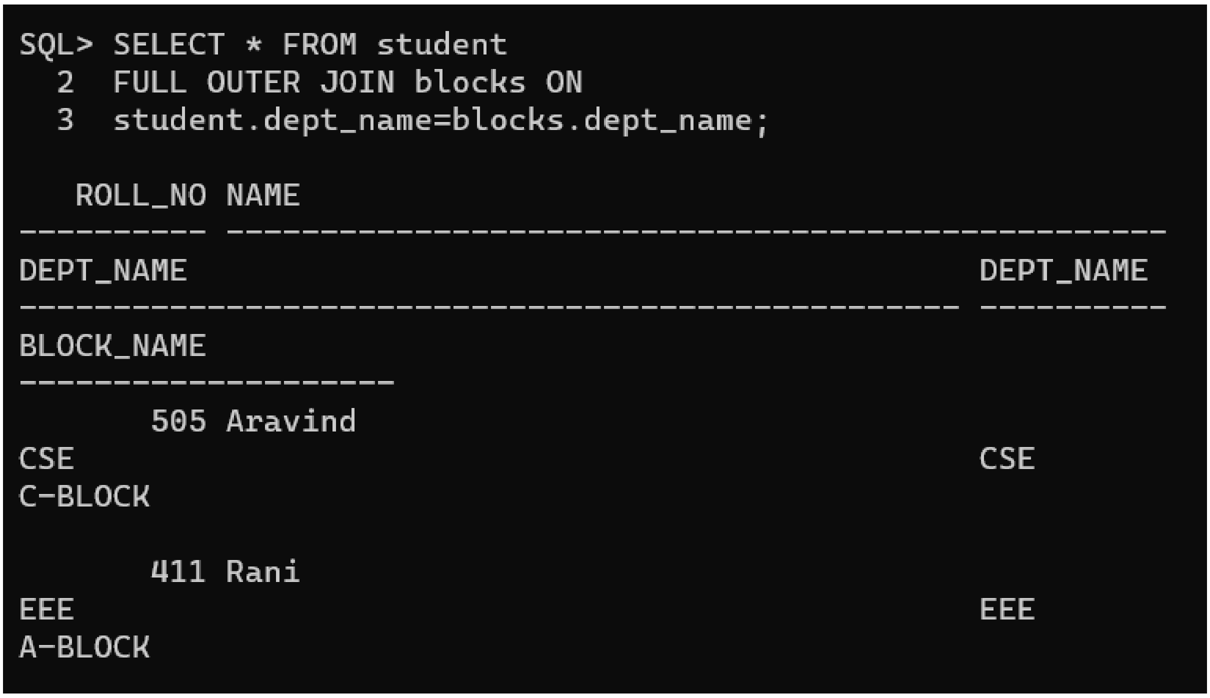
```
SQL> SELECT * FROM student
  2  LEFT OUTER JOIN blocks ON
  3  student.dept_name=blocks.dept_name;

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------
       505 Aravind
CSE                                                CSE
C-BLOCK

       411 Rani
EEE                                                EEE
A-BLOCK

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------


       310 Raju
```

RIGHT OUTER JOIN :



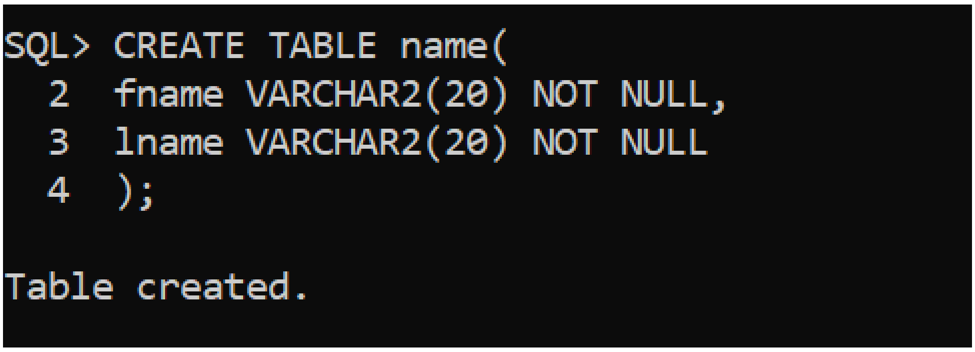
```
SQL> SELECT * FROM student
  2  RIGHT OUTER JOIN blocks ON
  3  student.dept_name=blocks.dept_name;

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------
       505 Aravind
CSE                                                CSE
C-BLOCK

       411 Rani
EEE                                                EEE
A-BLOCK

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------

       506 Baba
CSM                                                CSM
B-BLOCK
```

FULL OUTER JOIN :

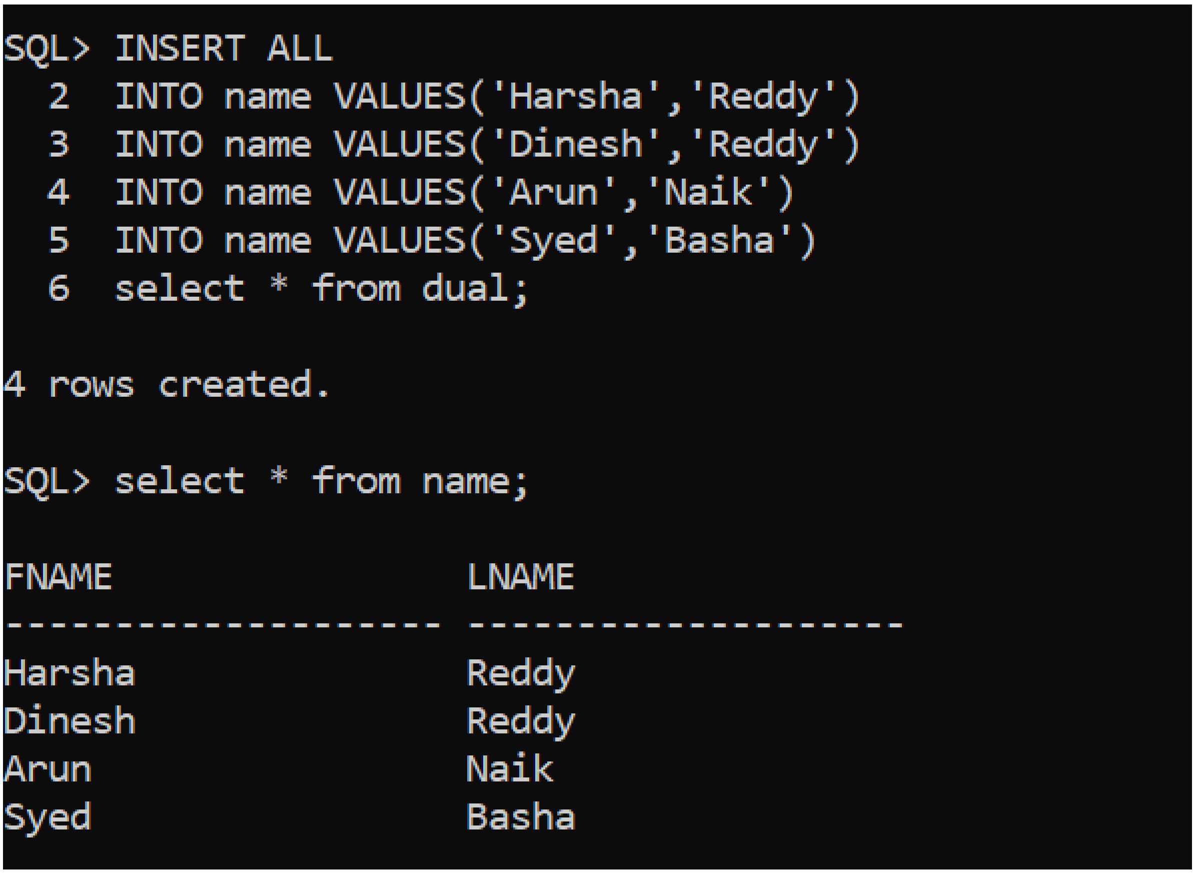


```
SQL> SELECT * FROM student
  2  FULL OUTER JOIN blocks ON
  3  student.dept_name=blocks.dept_name;

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------
       505 Aravind
CSE                                                CSE
C-BLOCK

       411 Rani
EEE                                                EEE
A-BLOCK
```

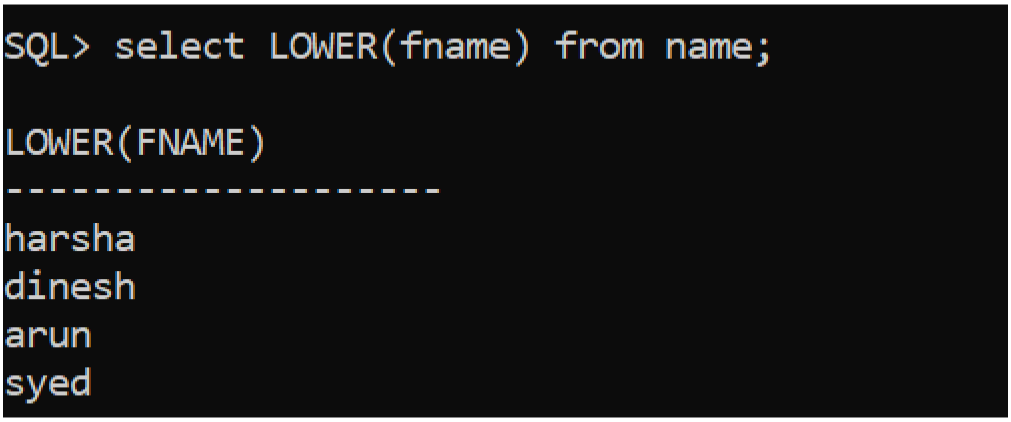
EXPERIMENT-8



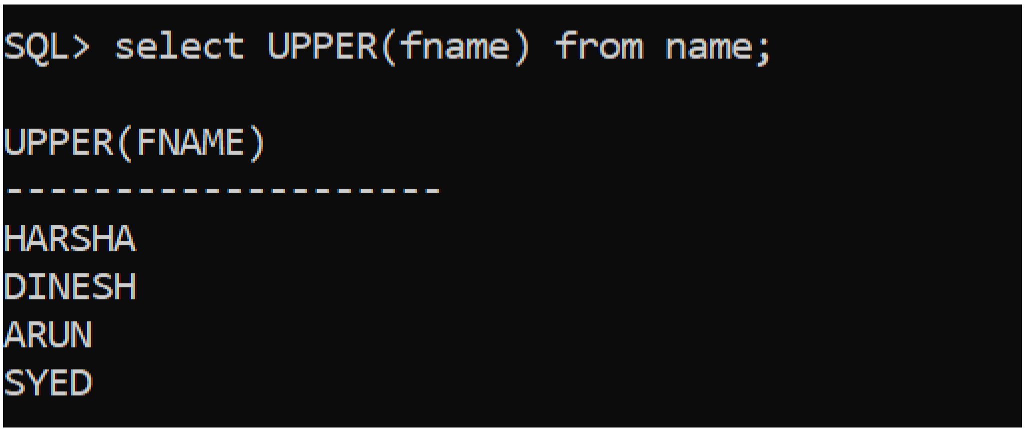
```
SQL> CREATE TABLE name(
  2  fname VARCHAR2(20) NOT NULL,
  3  lname VARCHAR2(20) NOT NULL
  4  );

Table created.
```



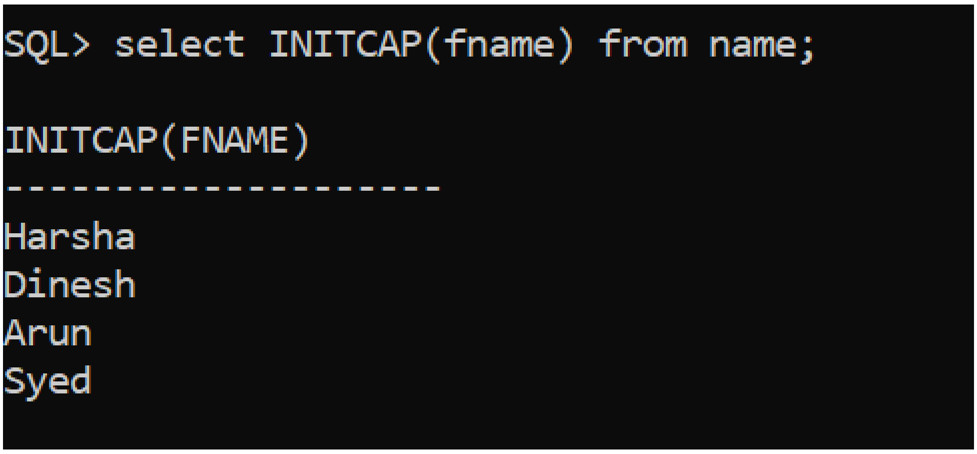
```
SQL> INSERT ALL
  2  INTO name VALUES('Harsha','Reddy')
  3  INTO name VALUES('Dinesh','Reddy')
  4  INTO name VALUES('Arun','Naik')
  5  INTO name VALUES('Syed','Basha')
  6  select * from dual;

4 rows created.

SQL> select * from name;

FNAME                LNAME
-------------------- --------------------
Harsha               Reddy
Dinesh               Reddy
Arun                 Naik
Syed                 Basha
```



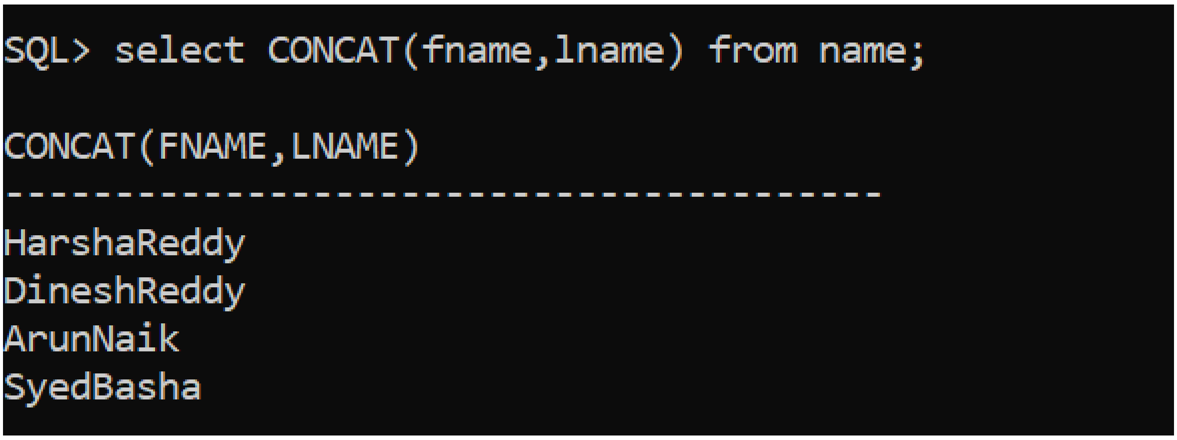
```
SQL> select LOWER(fname) from name;

LOWER(FNAME)
--------------------
harsha
dinesh
arun
syed
```



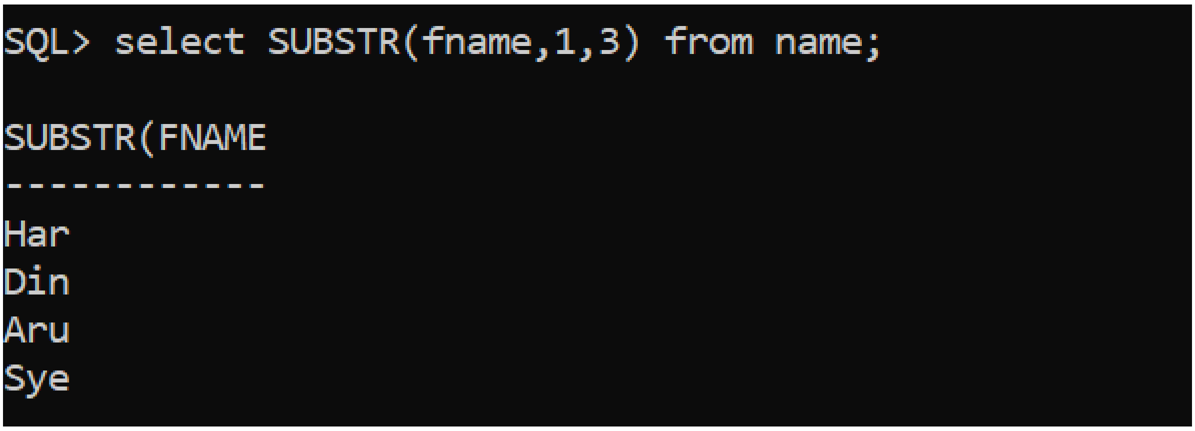
```
SQL> select UPPER(fname) from name;

UPPER(FNAME)
--------------------
HARSHA
DINESH
ARUN
SYED
```



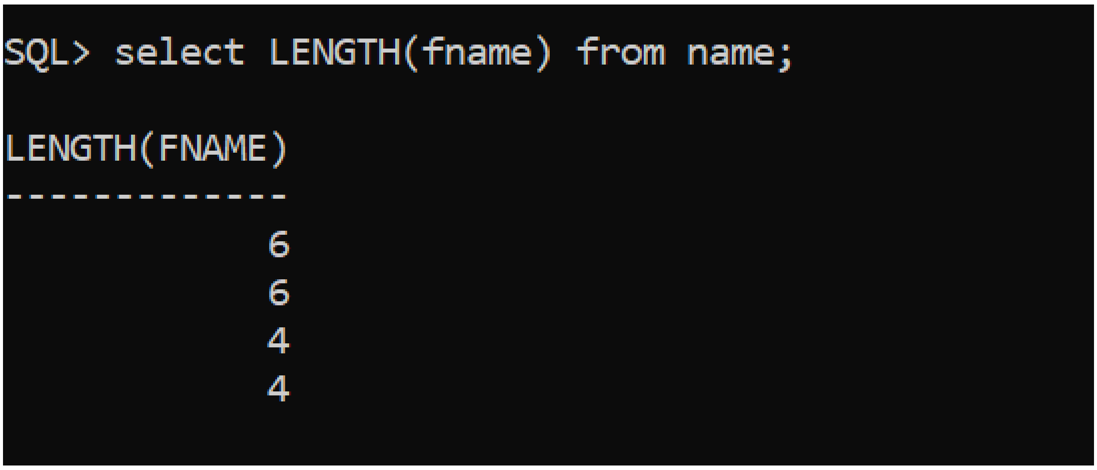
```
SQL> select INITCAP(fname) from name;

INITCAP(FNAME)
--------------------
Harsha
Dinesh
Arun
Syed
```



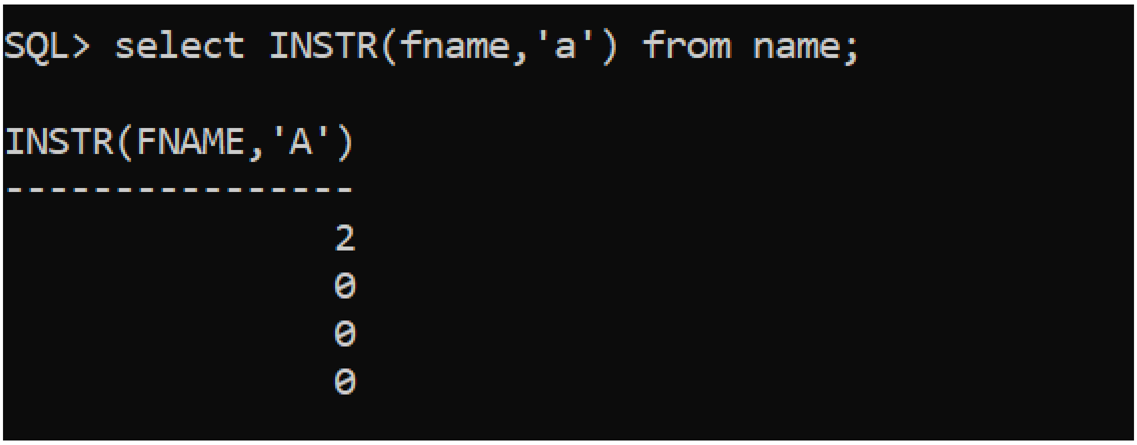
```
SQL> select CONCAT(fname,lname) from name;

CONCAT(FNAME,LNAME)
----------------------------------------
HarshaReddy
DineshReddy
ArunNaik
SyedBasha
```



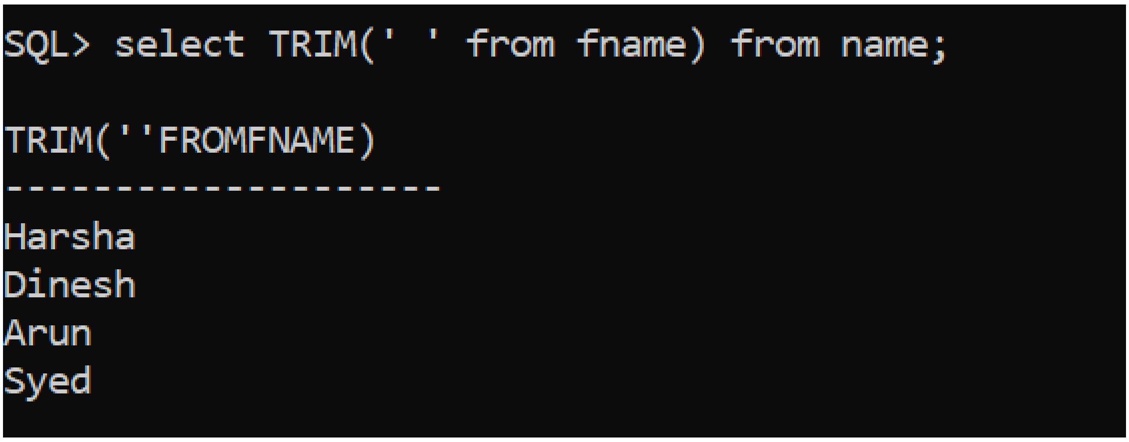
```
SQL> select SUBSTR(fname,1,3) from name;

SUBSTR(FNAME
------------
Har
Din
Aru
Sye
```



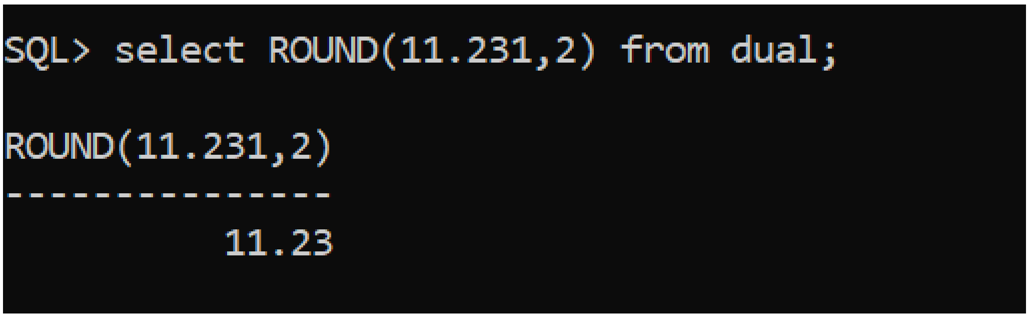
```
SQL> select LENGTH(fname) from name;

LENGTH(FNAME)
-------------
            6
            6
            4
            4
```



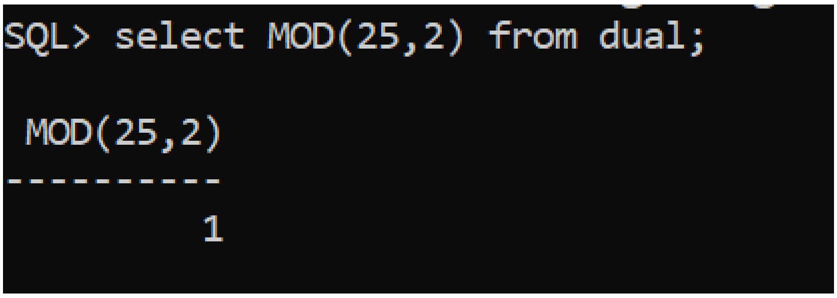
```
SQL> select INSTR(fname,'a') from name;

INSTR(FNAME,'A')
----------------
               2
               0
               0
               0
```



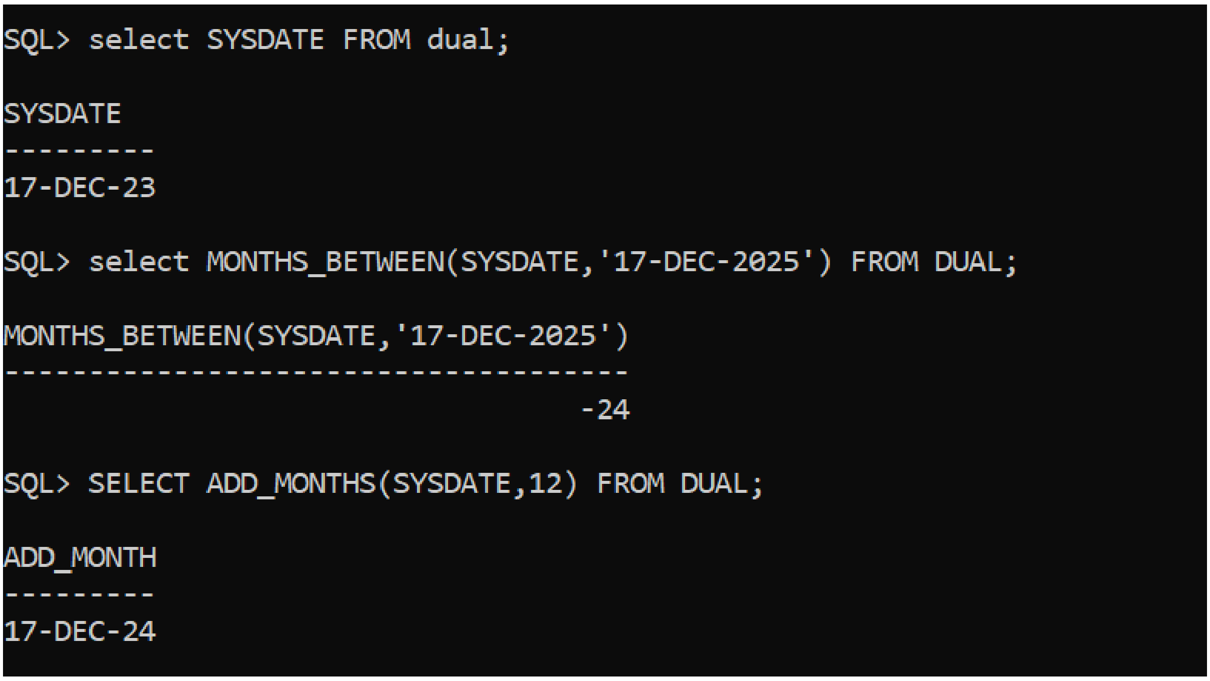
```
SQL> select TRIM(' ' from fname) from name;

TRIM(''FROMFNAME)
--------------------
Harsha
Dinesh
Arun
Syed
```



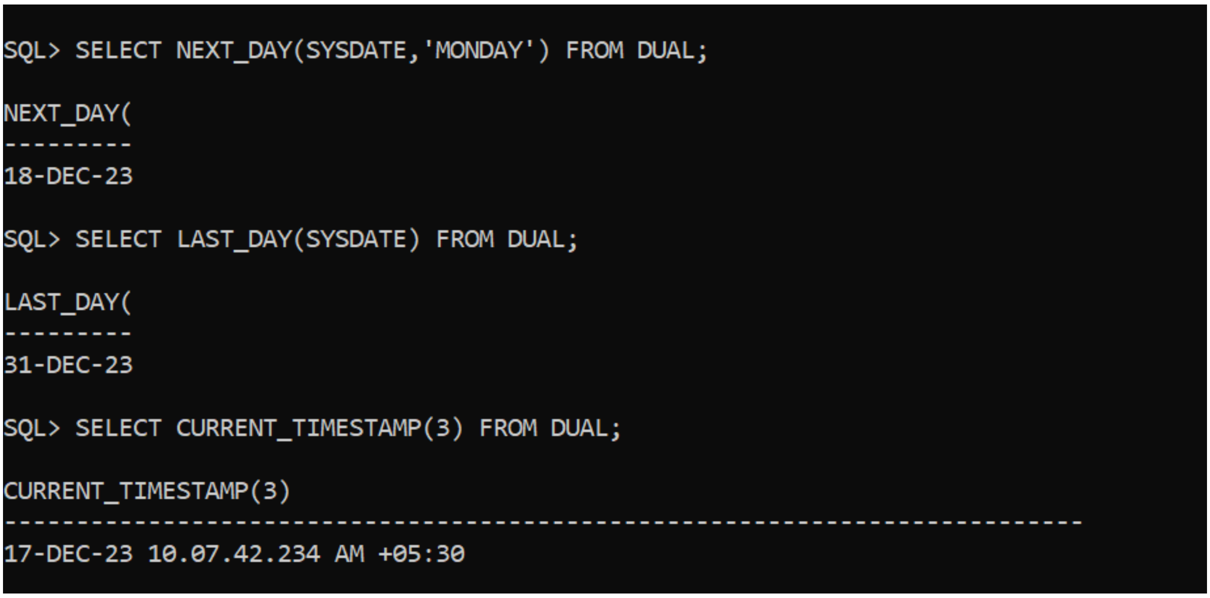
```
SQL> select ROUND(11.231,2) from dual;

ROUND(11.231,2)
---------------
          11.23
```



```
SQL> select MOD(25,2) from dual;

 MOD(25,2)
----------
         1
```



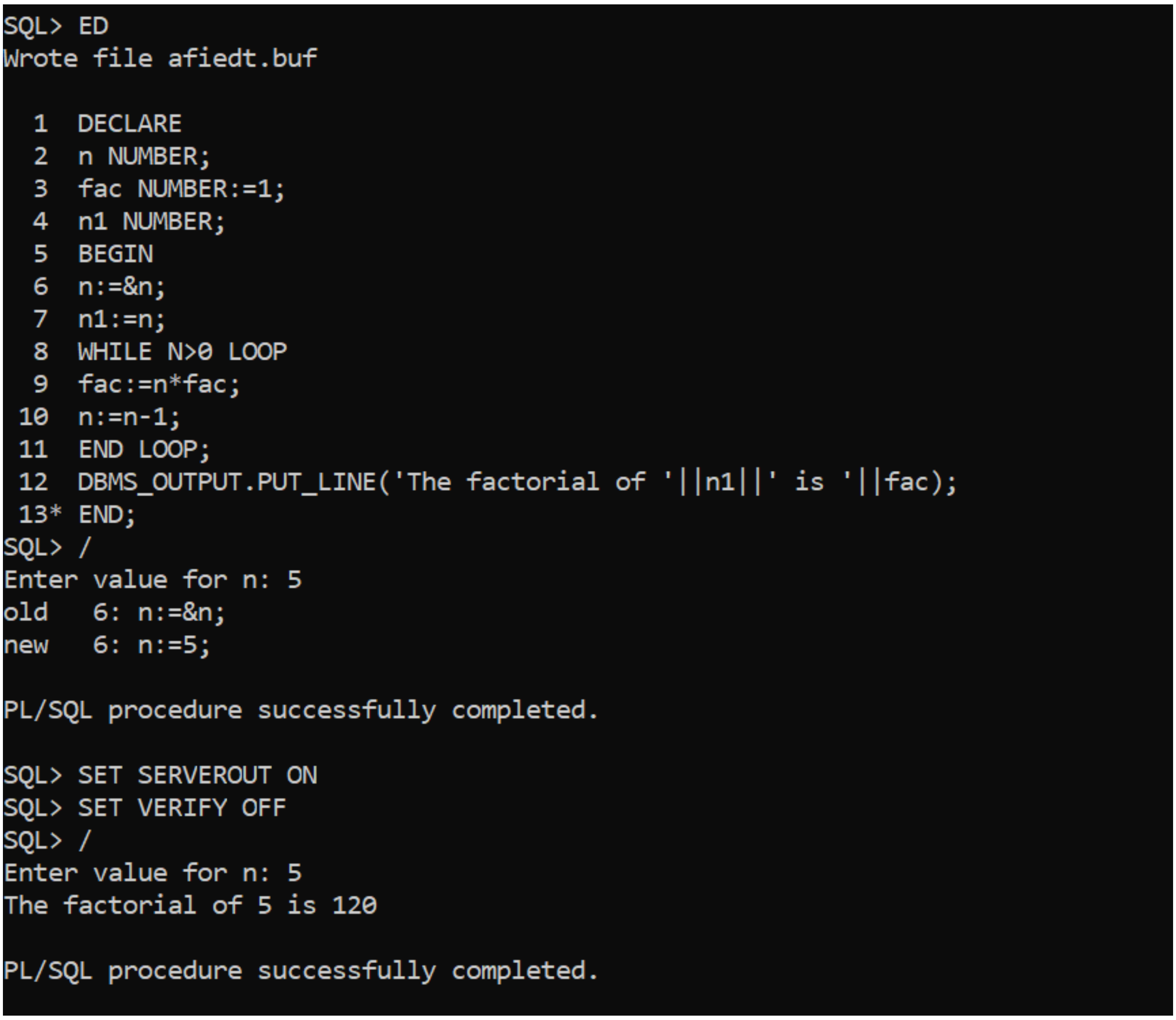
```
SQL> select SYSDATE FROM dual;

SYSDATE
---------
17-DEC-23

SQL> select MONTHS_BETWEEN(SYSDATE,'17-DEC-2025') FROM DUAL;

MONTHS_BETWEEN(SYSDATE,'17-DEC-2025')
-------------------------------------
                                  -24

SQL> SELECT ADD_MONTHS(SYSDATE,12) FROM DUAL;

ADD_MONTH
---------
17-DEC-24
```



```
SQL> SELECT NEXT_DAY(SYSDATE,'MONDAY') FROM DUAL;

NEXT_DAY(
---------
18-DEC-23

SQL> SELECT LAST_DAY(SYSDATE) FROM DUAL;

LAST_DAY(
---------
31-DEC-23

SQL> SELECT CURRENT_TIMESTAMP(3) FROM DUAL;

CURRENT_TIMESTAMP(3)
---------------------------------------------------------------------------
17-DEC-23 10.07.42.234 AM +05:30
```

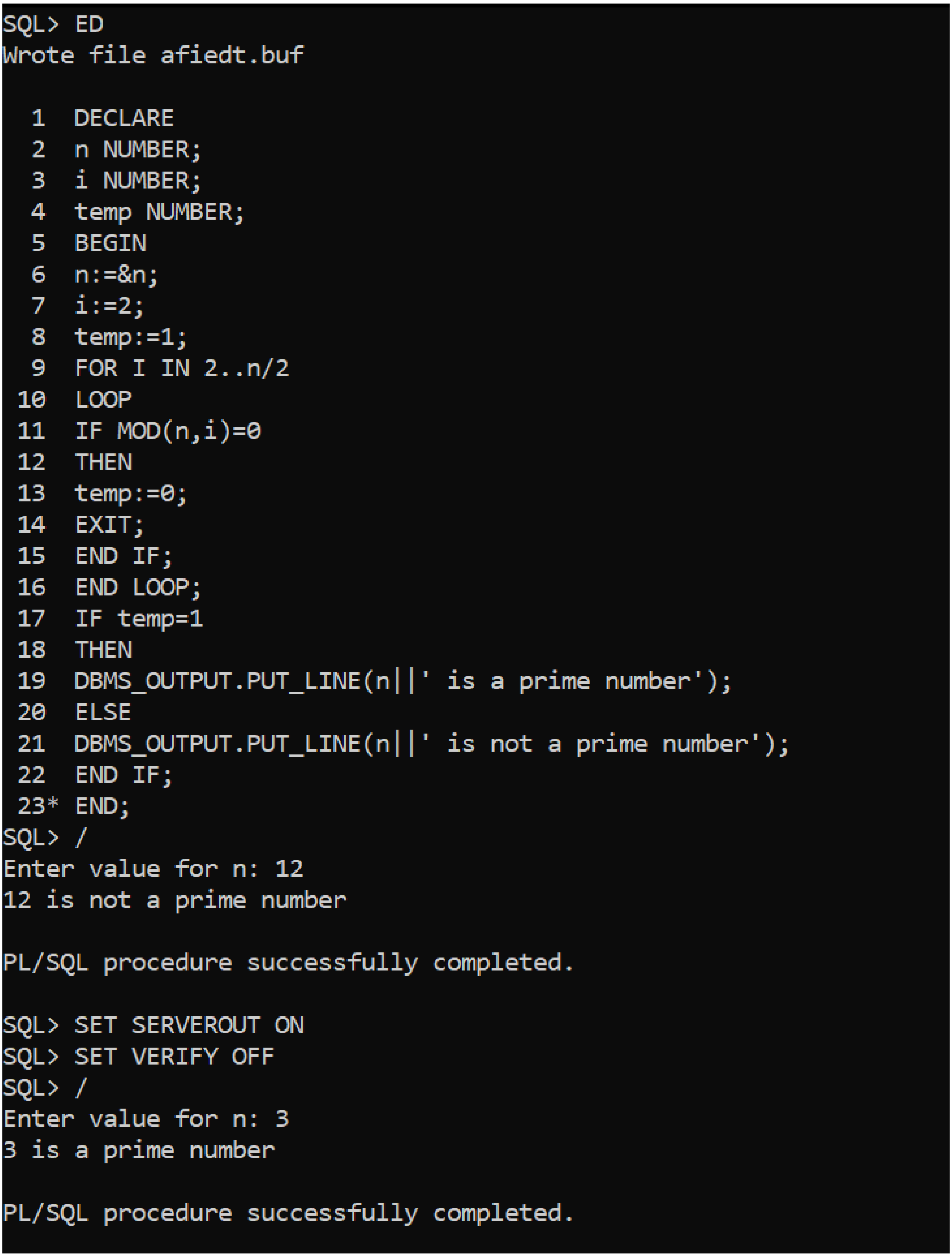
EXPERIMENT-10

224G1A0546 MAHAMMAD THANVEER P



```
SQL> ED
Wrote file afiedt.buf

DECLARE
n NUMBER;
fac NUMBER:=1;
n1 NUMBER;
BEGIN
n:=&n;
n1:=n;
WHILE N>0 LOOP
fac:=n*fac;
n:=n-1;
END LOOP;
DBMS_OUTPUT.PUT_LINE('The factorial of '||n1||' is '||fac);
END;
SQL> /
Enter value for n: 5
old   6: n:=&n;
new   6: n:=5;

PL/SQL procedure successfully completed.

SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> /
Enter value for n: 5
The factorial of 5 is 120

PL/SQL procedure successfully completed.
```

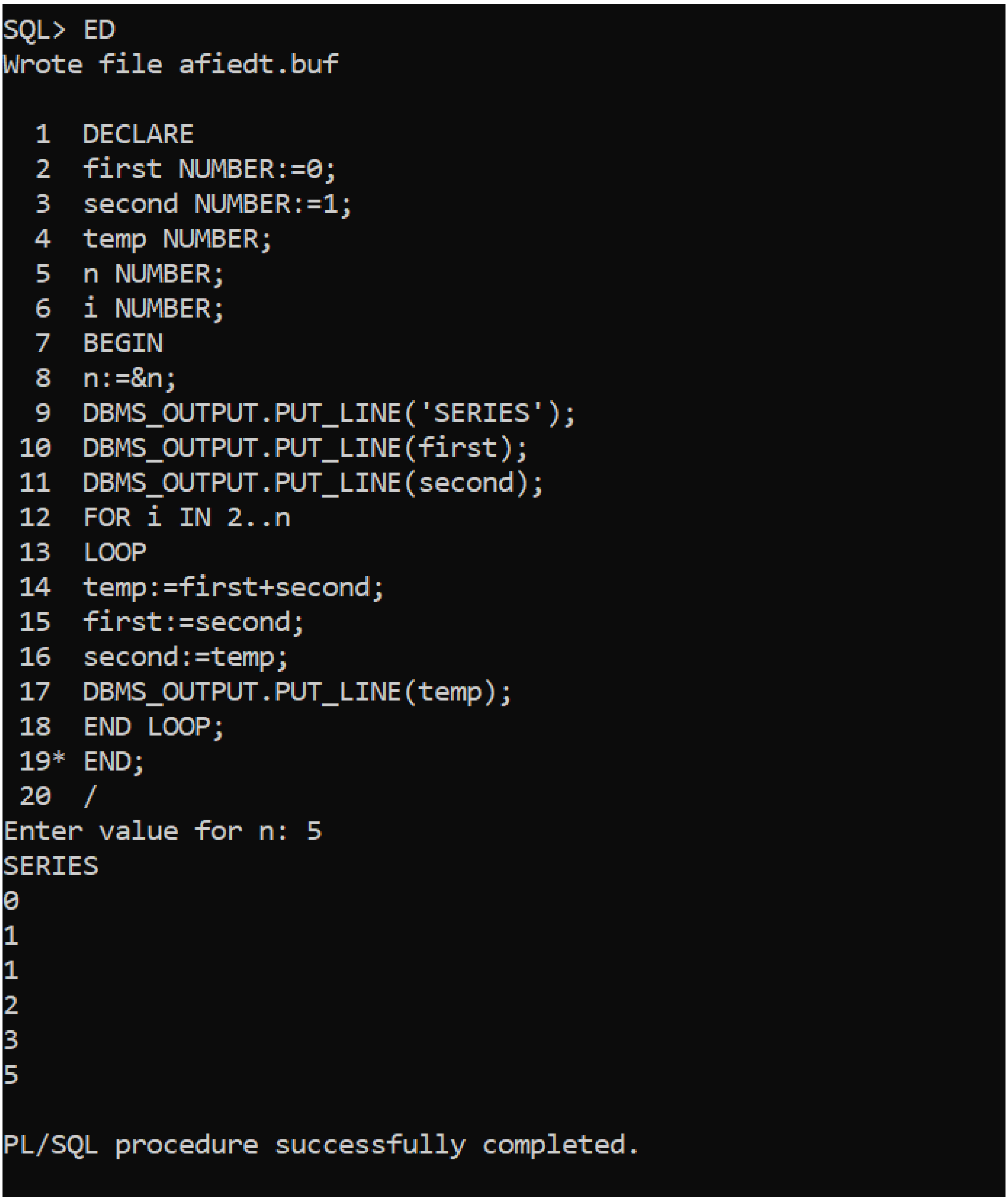
EXPERIMENT-11



```
SQL> ED
Wrote file afiedt.buf

DECLARE
n NUMBER;
i NUMBER;
temp NUMBER;
BEGIN
n:=&n;
i:=2;
temp:=1;
FOR I IN 2..n/2
LOOP
IF MOD(n,i)=0
THEN
temp:=0;
EXIT;
END IF;
END LOOP;
IF temp=1
THEN
DBMS_OUTPUT.PUT_LINE(n||' is a prime number');
ELSE
DBMS_OUTPUT.PUT_LINE(n||' is not a prime number');
END IF;
END;
SQL> /
Enter value for n: 12
12 is not a prime number

PL/SQL procedure successfully completed.

SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> /
Enter value for n: 3
3 is a prime number

PL/SQL procedure successfully completed.
```

EXPERIMENT-12

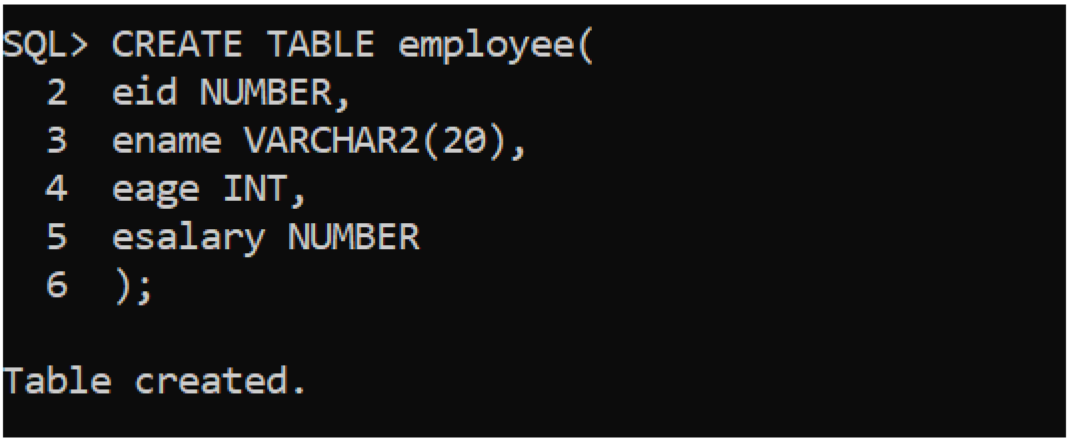
224G1A0546 MAHAMMAD THANVEER P



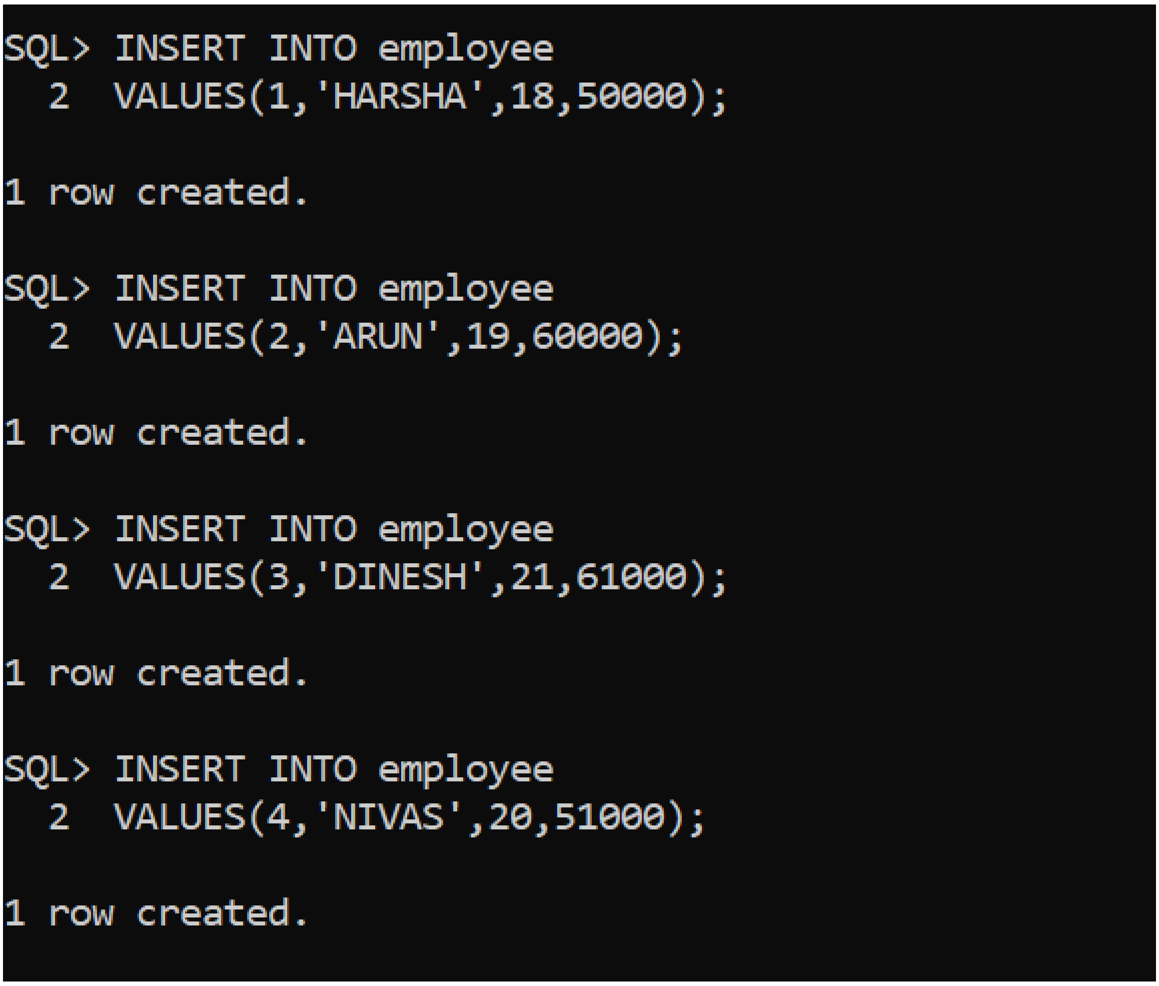
```
SQL> ED
Wrote file afiedt.buf

DECLARE
first NUMBER:=0;
second NUMBER:=1;
temp NUMBER;
n NUMBER;
i NUMBER;
BEGIN
n:=&n;
DBMS_OUTPUT.PUT_LINE('SERIES');
DBMS_OUTPUT.PUT_LINE(first);
DBMS_OUTPUT.PUT_LINE(second);
FOR i IN 2..n
LOOP
temp:=first+second;
first:=second;
second:=temp;
DBMS_OUTPUT.PUT_LINE(temp);
END LOOP;
END;
/
Enter value for n: 5
SERIES
0
1
1
2
3
5

PL/SQL procedure successfully completed.
```

EXPERIMENT_2

Roll no : 224G1A0546 Name : MAHAMMAD THANVEER P



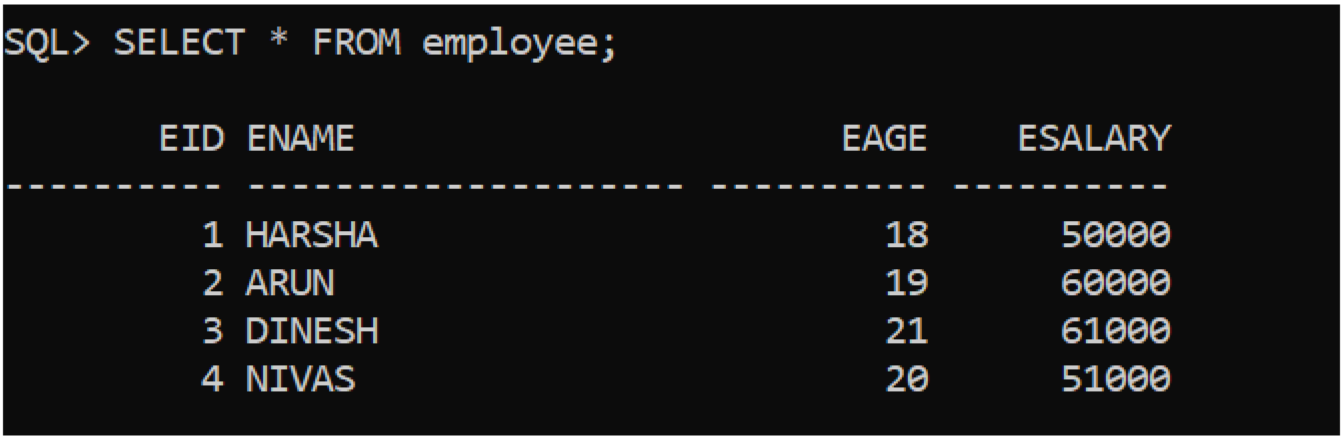
```
SQL> CREATE TABLE employee(
  2  eid NUMBER,
  3  ename VARCHAR2(20),
  4  eage INT,
  5  esalary NUMBER
  6  );

Table created.
```



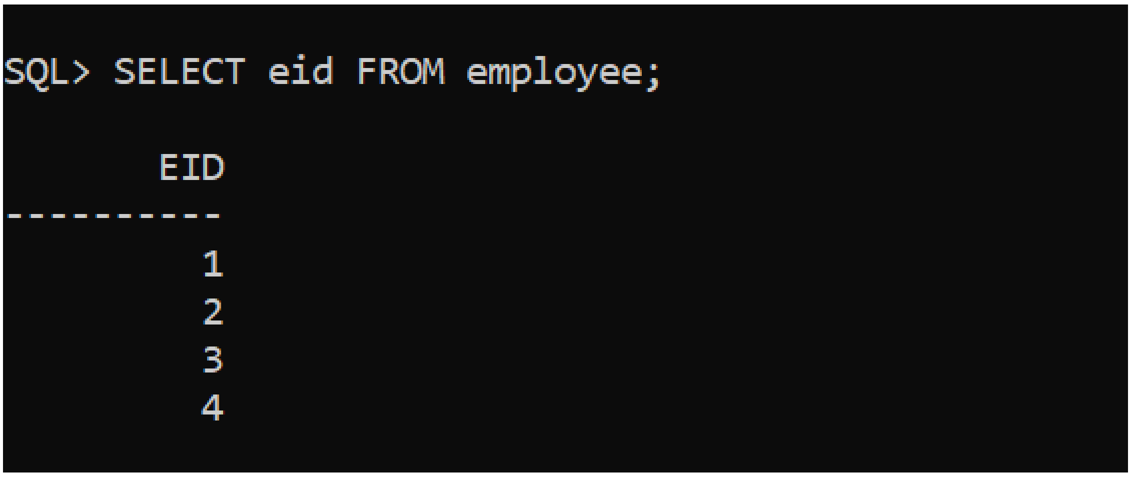
```
SQL> INSERT INTO employee
  2  VALUES(1,'HARSHA',18,50000);

1 row created.

SQL> INSERT INTO employee
  2  VALUES(2,'ARUN',19,60000);

1 row created.

SQL> INSERT INTO employee
  2  VALUES(3,'DINESH',21,61000);

1 row created.

SQL> INSERT INTO employee
  2  VALUES(4,'NIVAS',20,51000);

1 row created.
```

EXPERIMENT_2

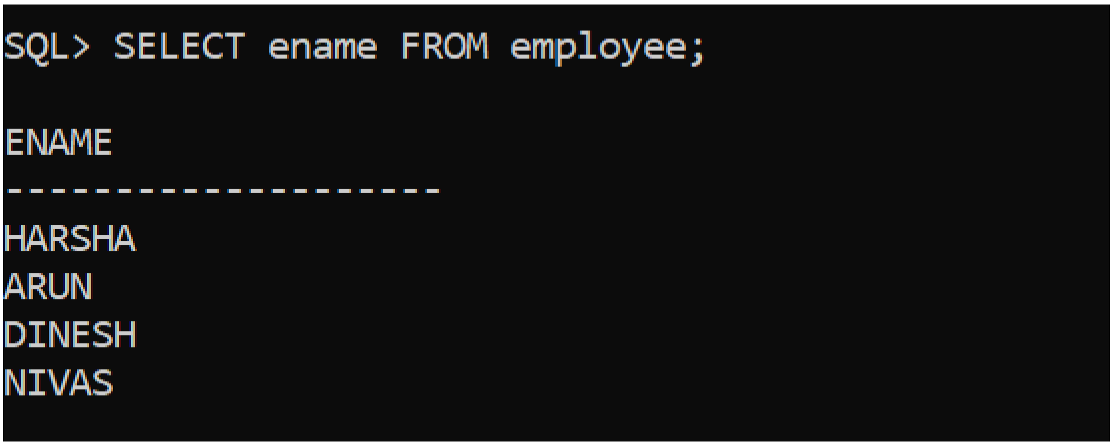
Roll no : 224G1A0546 Name : MAHAMMAD THANVEER P



```
SQL> SELECT * FROM employee;

       EID ENAME                      EAGE    ESALARY
---------- -------------------- ---------- ----------
         1 HARSHA                       18      50000
         2 ARUN                         19      60000
         3 DINESH                       21      61000
         4 NIVAS                        20      51000
```



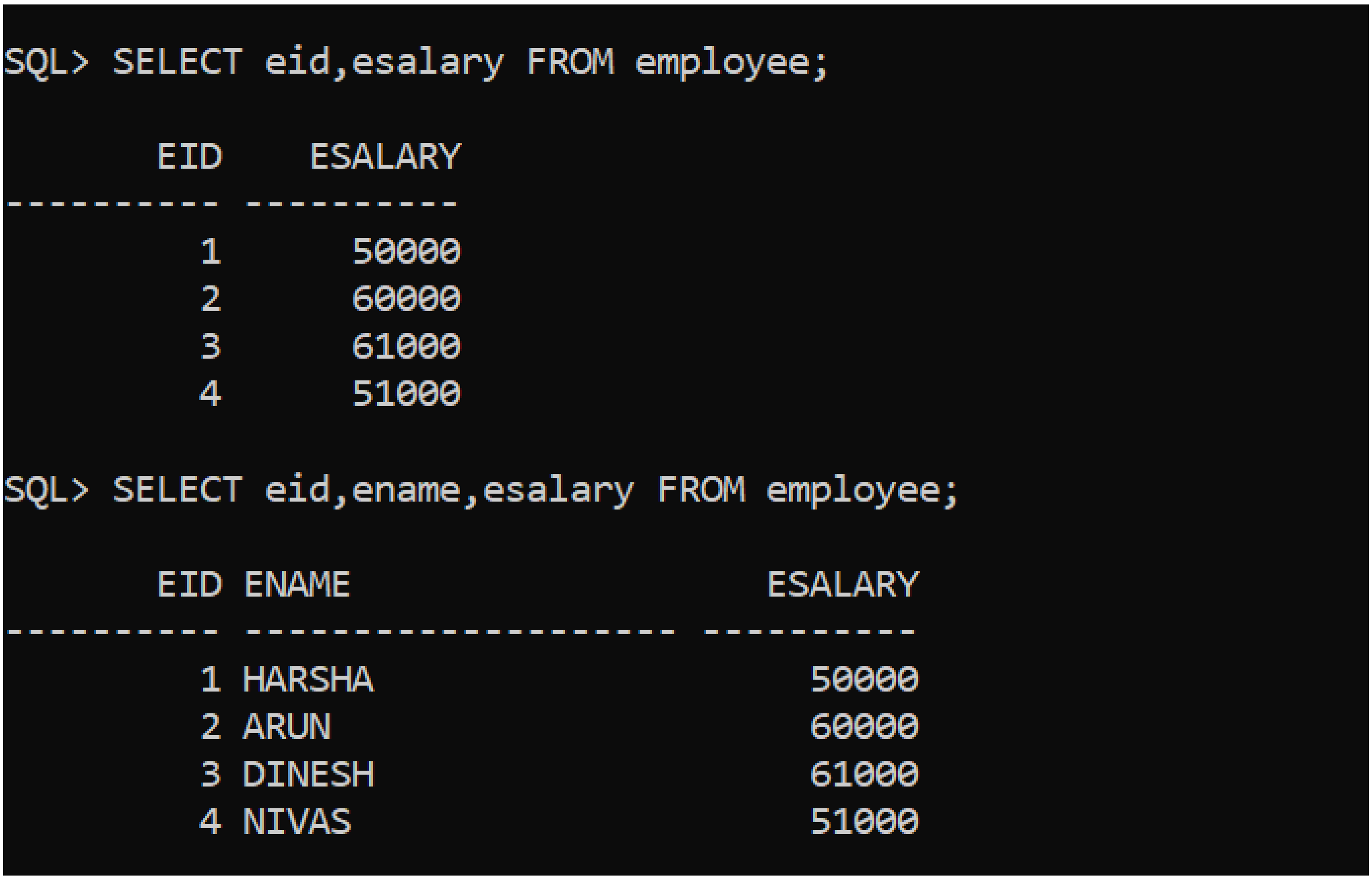
```
SQL> SELECT eid FROM employee;

       EID
----------
         1
         2
         3
         4
```



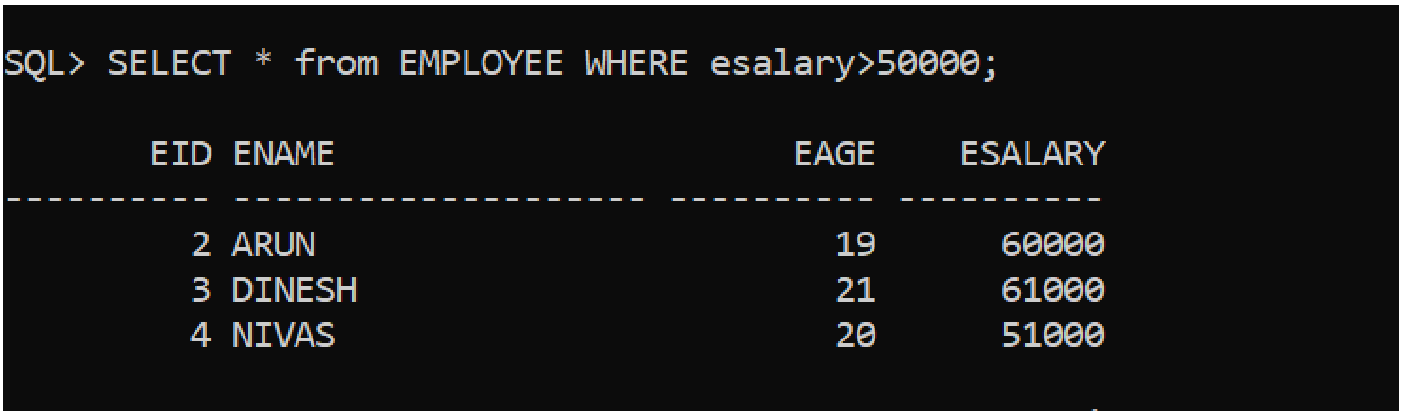
```
SQL> SELECT ename FROM employee;

ENAME
--------------------
HARSHA
ARUN
DINESH
NIVAS
```

EXPERIMENT_2

Roll no : 224G1A0546 Name : MAHAMMAD THANVEER P



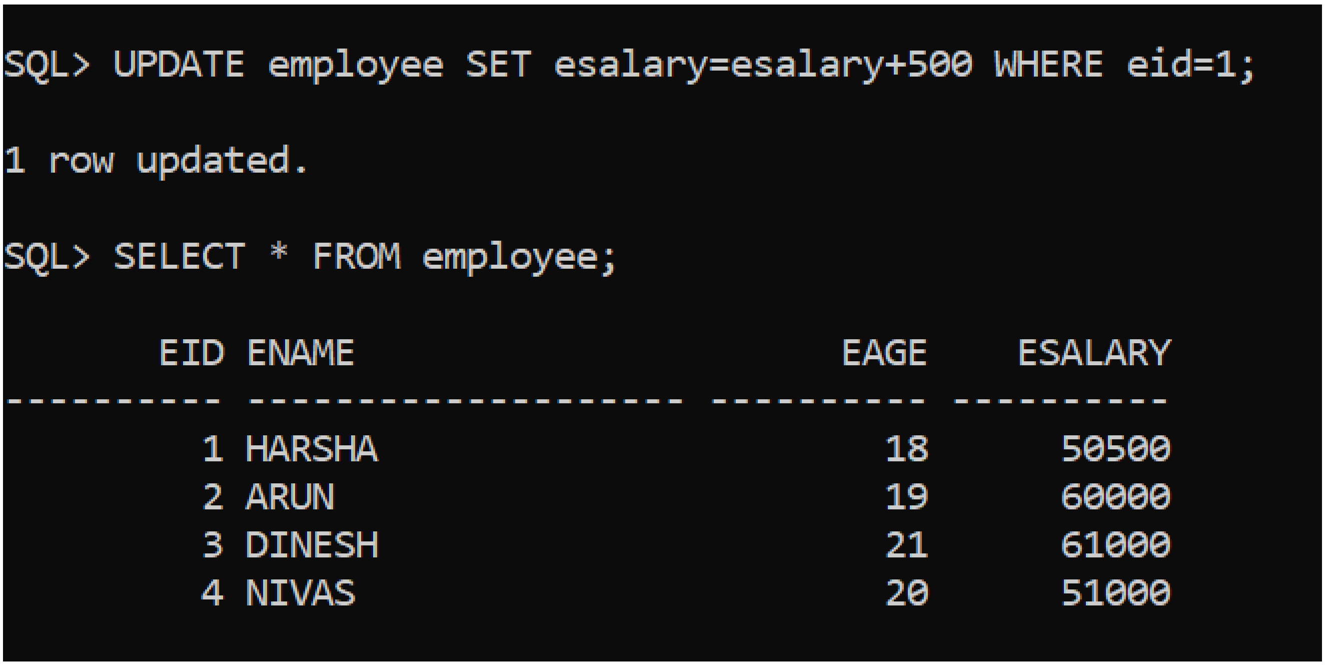
```
SQL> SELECT eid,esalary FROM employee;

       EID    ESALARY
---------- ----------
         1      50000
         2      60000
         3      61000
         4      51000

SQL> SELECT eid,ename,esalary FROM employee;

       EID ENAME                   ESALARY
---------- -------------------- ----------
         1 HARSHA                    50000
         2 ARUN                      60000
         3 DINESH                    61000
         4 NIVAS                     51000
```



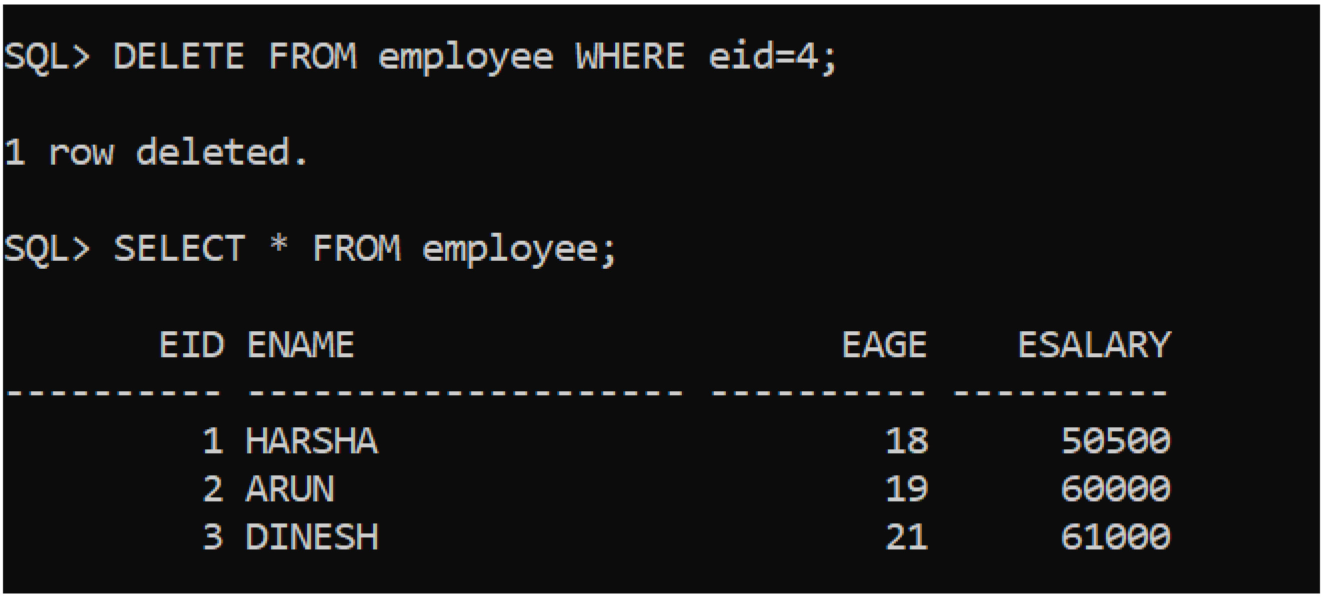
```
SQL> SELECT * from EMPLOYEE WHERE esalary>50000;

       EID ENAME                      EAGE    ESALARY
---------- -------------------- ---------- ----------
         2 ARUN                         19      60000
         3 DINESH                       21      61000
         4 NIVAS                        20      51000
```

EXPERIMENT_2

Roll no : 224G1A0546 Name : MAHAMMAD THANVEER P



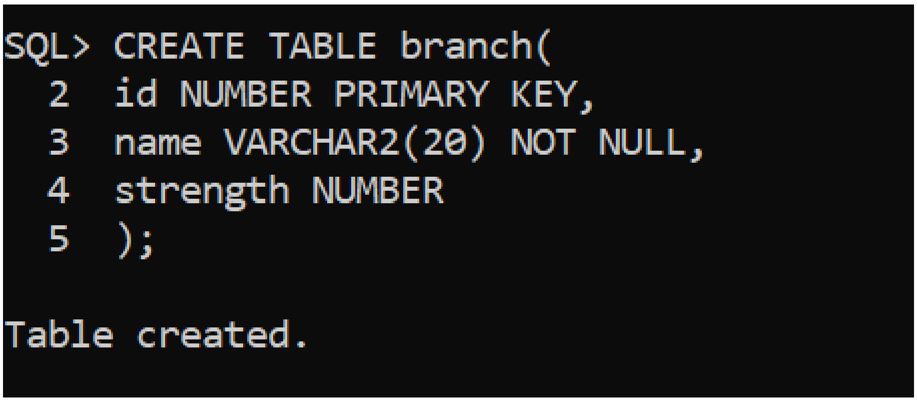
```
SQL> UPDATE employee SET esalary=esalary+500 WHERE eid=1;

1 row updated.

SQL> SELECT * FROM employee;

       EID ENAME                      EAGE    ESALARY
---------- -------------------- ---------- ----------
         1 HARSHA                       18      50500
         2 ARUN                         19      60000
         3 DINESH                       21      61000
         4 NIVAS                        20      51000
```



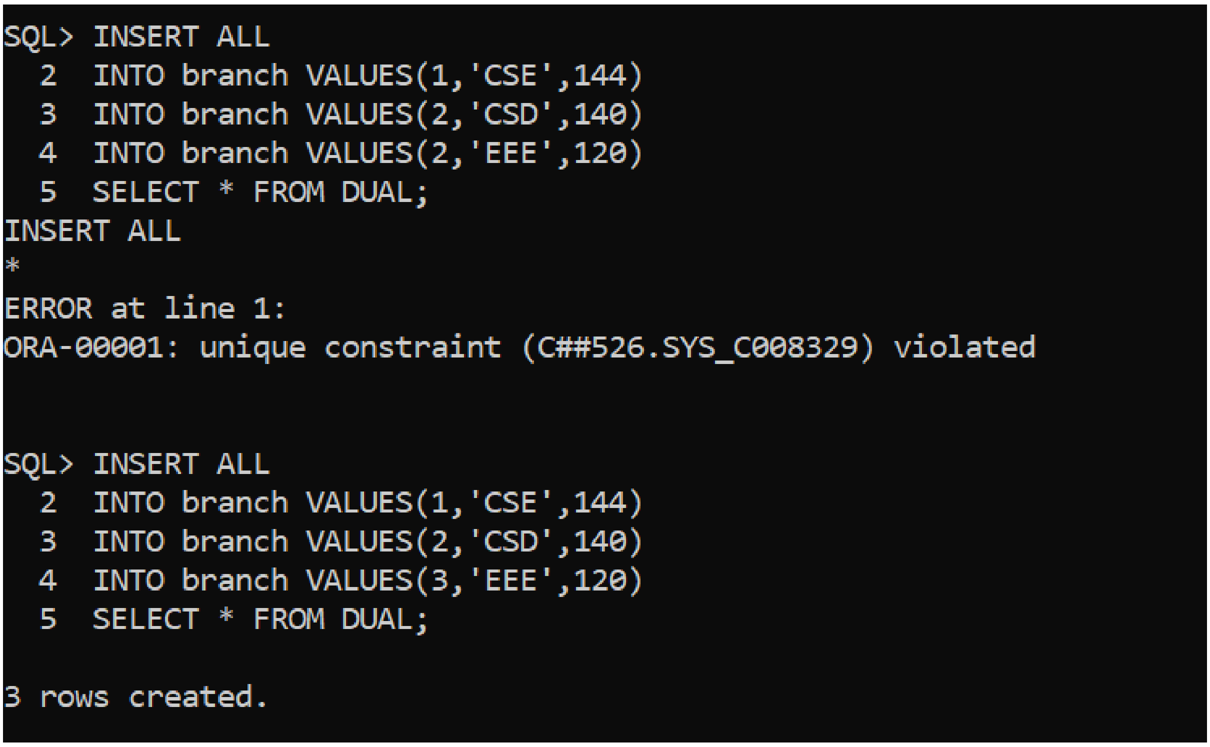
```
SQL> DELETE FROM employee WHERE eid=4;

1 row deleted.

SQL> SELECT * FROM employee;

       EID ENAME                      EAGE    ESALARY
---------- -------------------- ---------- ----------
         1 HARSHA                       18      50500
         2 ARUN                         19      60000
         3 DINESH                       21      61000
```

EXPERIMENT-14

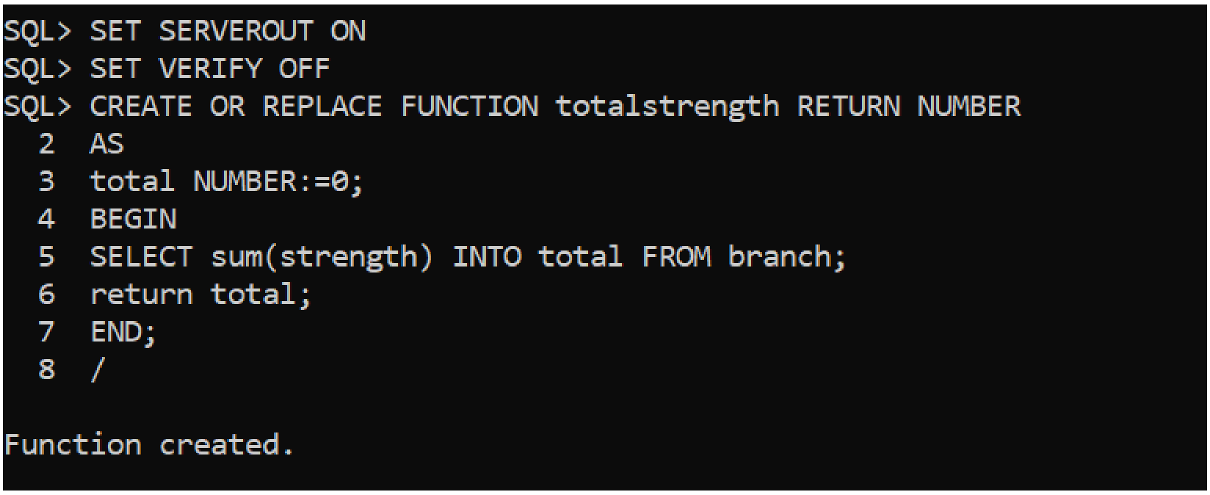
224G1A0546 MAHAMMAD THANVEER P



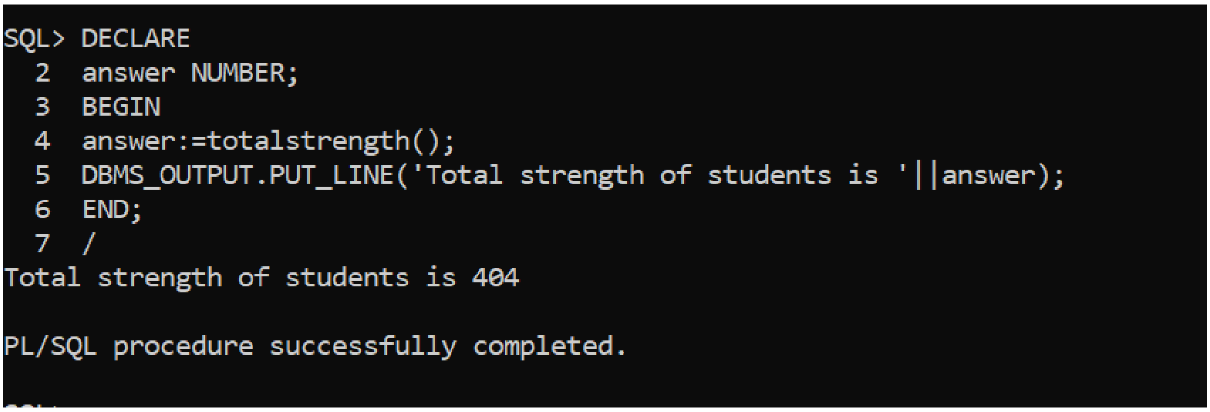
```
SQL> CREATE TABLE branch(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(20) NOT NULL,
  4  strength NUMBER
  5  );

Table created.
```



```
SQL> INSERT ALL
  2  INTO branch VALUES(1,'CSE',144)
  3  INTO branch VALUES(2,'CSD',140)
  4  INTO branch VALUES(2,'EEE',120)
  5  SELECT * FROM DUAL;
INSERT ALL
*
ERROR at line 1:
ORA-00001: unique constraint (C##526.SYS_C008329) violated


SQL> INSERT ALL
  2  INTO branch VALUES(1,'CSE',144)
  3  INTO branch VALUES(2,'CSD',140)
  4  INTO branch VALUES(3,'EEE',120)
  5  SELECT * FROM DUAL;

3 rows created.
```

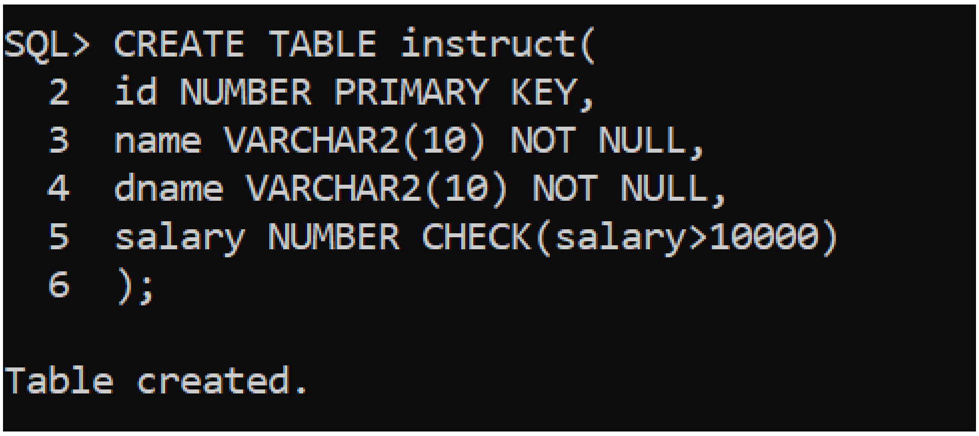


```
SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> CREATE OR REPLACE FUNCTION totalstrength RETURN NUMBER
AS
total NUMBER:=0;
BEGIN
SELECT sum(strength) INTO total FROM branch;
return total;
END;
/

Function created.
```

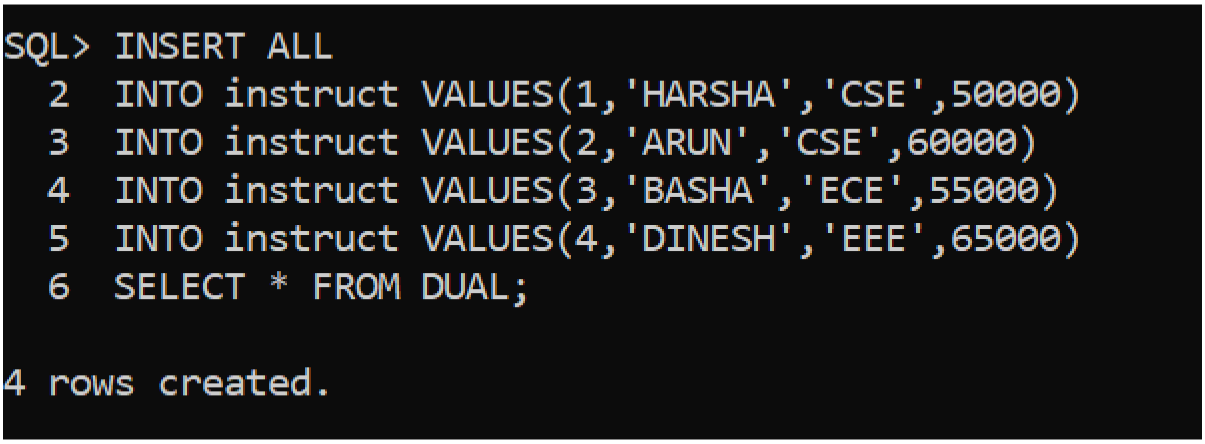


```
SQL> DECLARE
answer NUMBER;
BEGIN
answer:=totalstrength();
DBMS_OUTPUT.PUT_LINE('Total strength of students is '||answer);
END;
/
Total strength of students is 404

PL/SQL procedure successfully completed.
```

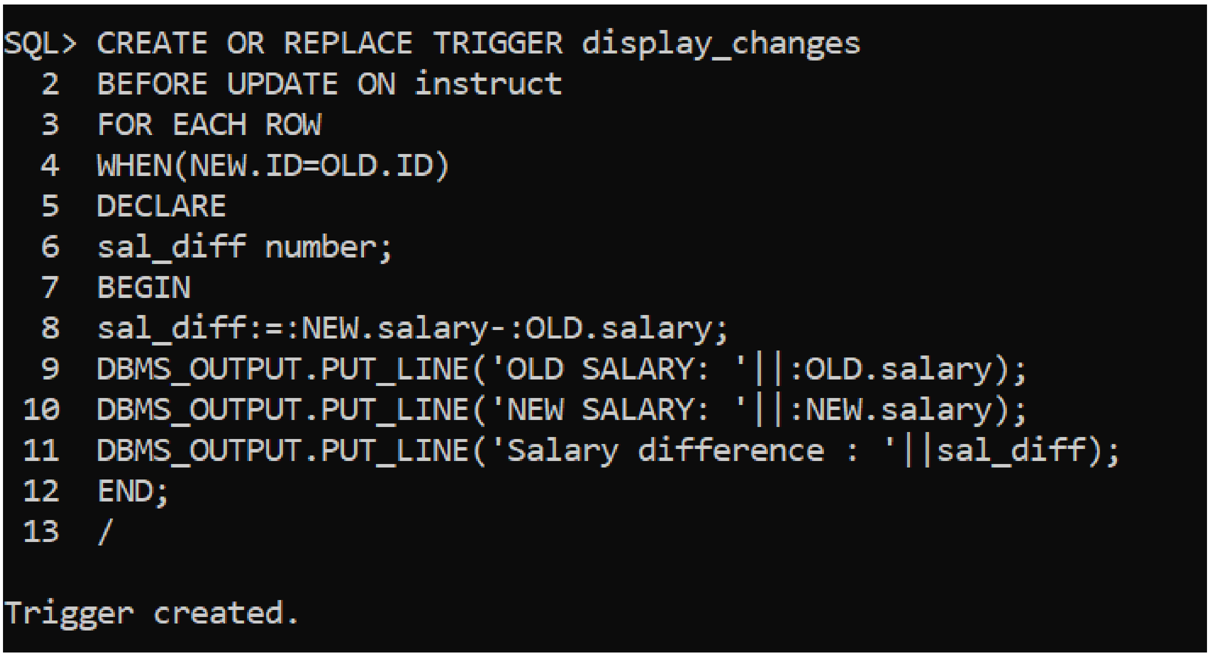
EXPERIMENT-15



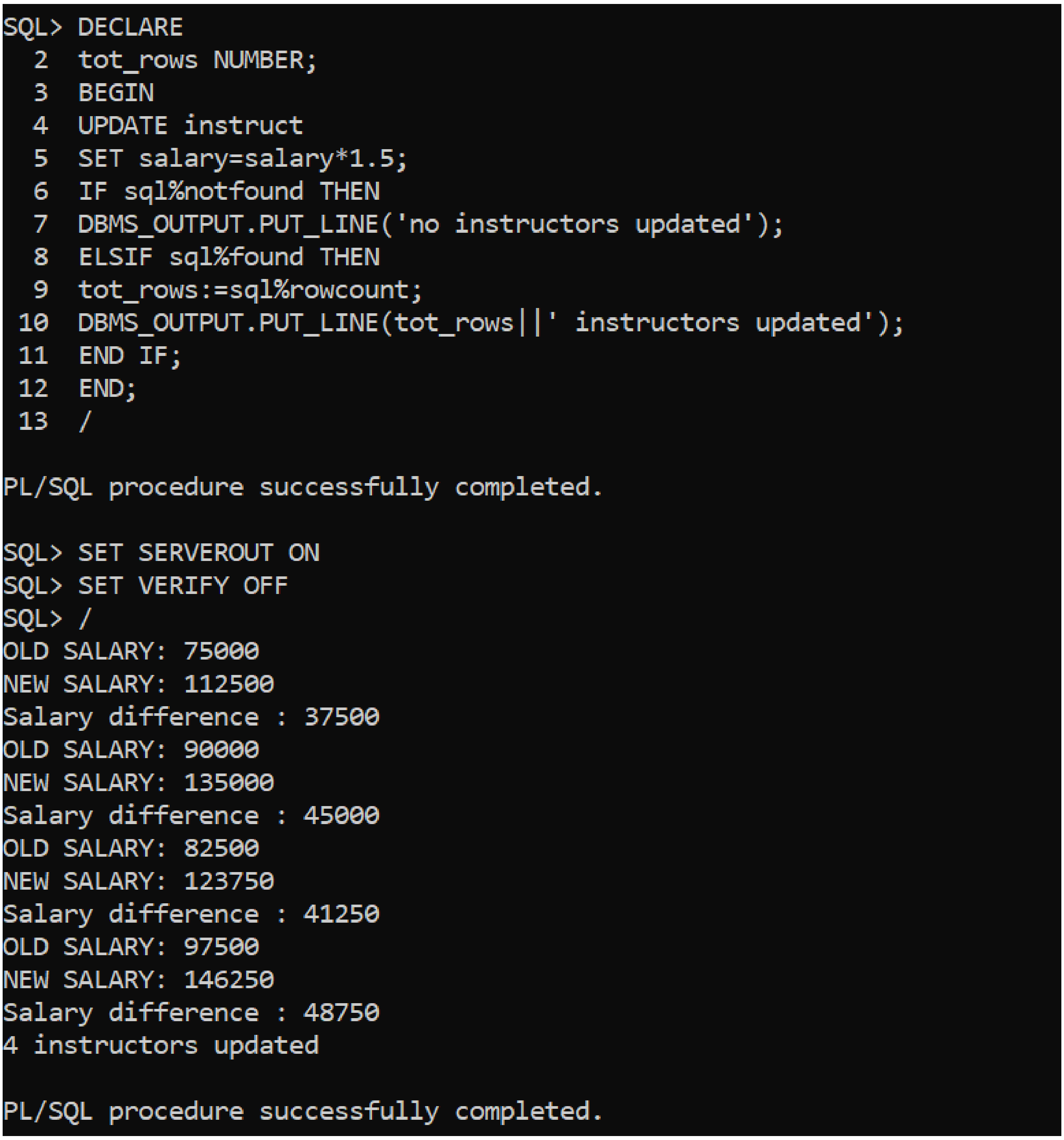
```
SQL> CREATE TABLE instruct(
     id NUMBER PRIMARY KEY,
     name VARCHAR2(10) NOT NULL,
     dname VARCHAR2(10) NOT NULL,
     salary NUMBER CHECK(salary>10000)
     );

Table created.
```



```
SQL> INSERT ALL
     INTO instruct VALUES(1,'HARSHA','CSE',50000)
     INTO instruct VALUES(2,'ARUN','CSE',60000)
     INTO instruct VALUES(3,'BASHA','ECE',55000)
     INTO instruct VALUES(4,'DINESH','EEE',65000)
     SELECT * FROM DUAL;

4 rows created.
```



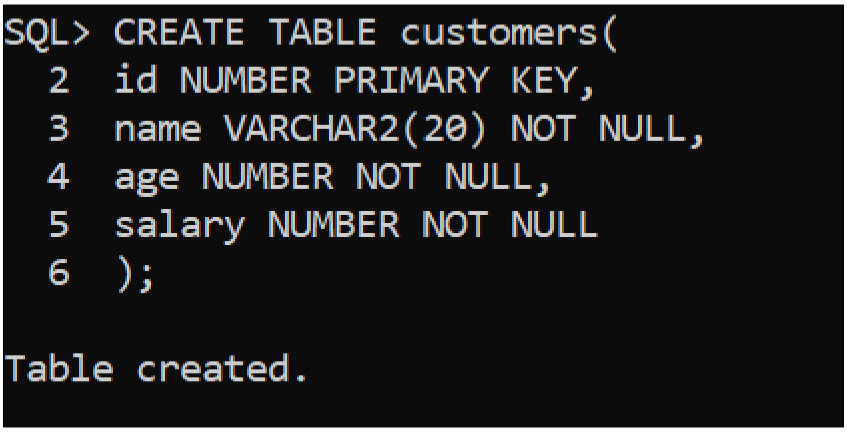
```
SQL> CREATE OR REPLACE TRIGGER display_changes
     BEFORE UPDATE ON instruct
     FOR EACH ROW
     WHEN(NEW.ID=OLD.ID)
     DECLARE
     sal_diff number;
     BEGIN
     sal_diff:=:NEW.salary-:OLD.salary;
     DBMS_OUTPUT.PUT_LINE('OLD SALARY: '||:OLD.salary);
     DBMS_OUTPUT.PUT_LINE('NEW SALARY: '||:NEW.salary);
     DBMS_OUTPUT.PUT_LINE('Salary difference : '||sal_diff);
     END;
     /

Trigger created.
```



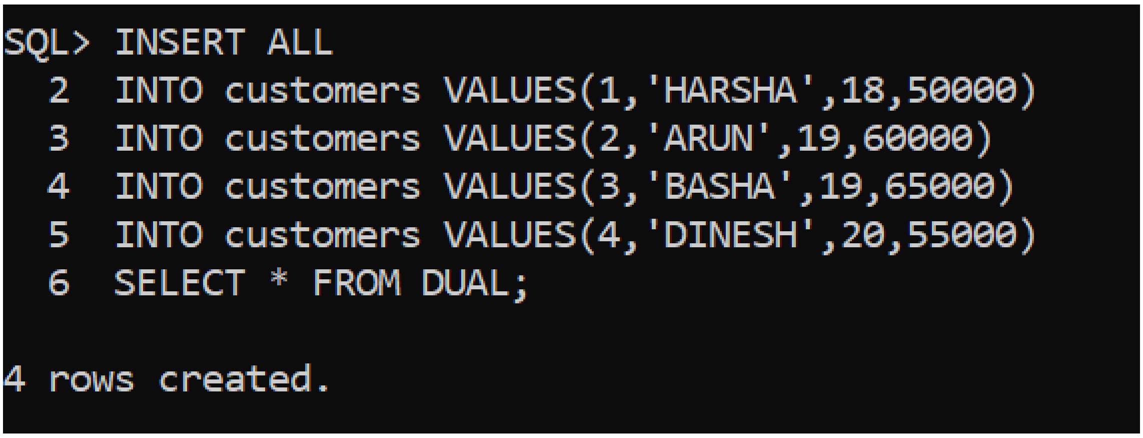
```
SQL> DECLARE
     tot_rows NUMBER;
     BEGIN
     UPDATE instruct
     SET salary=salary*1.5;
     IF sql%notfound THEN
     DBMS_OUTPUT.PUT_LINE('no instructors updated');
     ELSIF sql%found THEN
     tot_rows:=sql%rowcount;
     DBMS_OUTPUT.PUT_LINE(tot_rows||' instructors updated');
     END IF;
     END;
     /

PL/SQL procedure successfully completed.

SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> /
OLD SALARY: 75000
NEW SALARY: 112500
Salary difference : 37500
OLD SALARY: 90000
NEW SALARY: 135000
Salary difference : 45000
OLD SALARY: 82500
NEW SALARY: 123750
Salary difference : 41250
OLD SALARY: 97500
NEW SALARY: 146250
Salary difference : 48750
4 instructors updated

PL/SQL procedure successfully completed.
```

EXPERIMENT-16

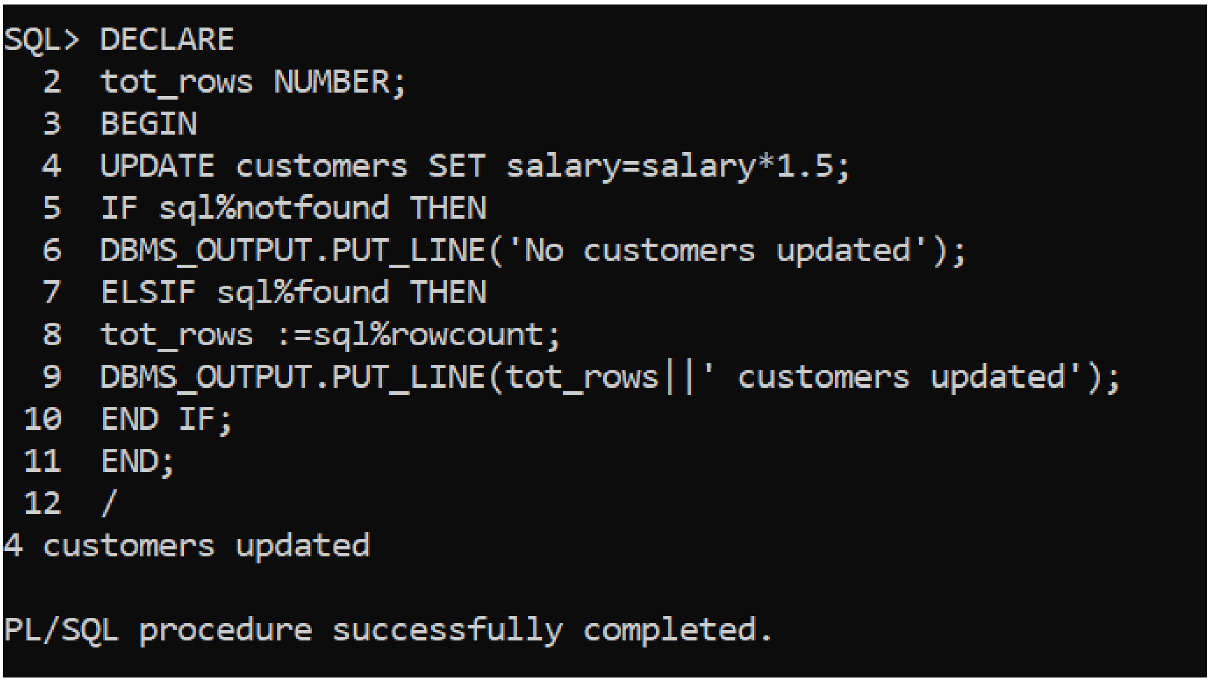
224G1A0546 MAHAMMAD THANVEER P



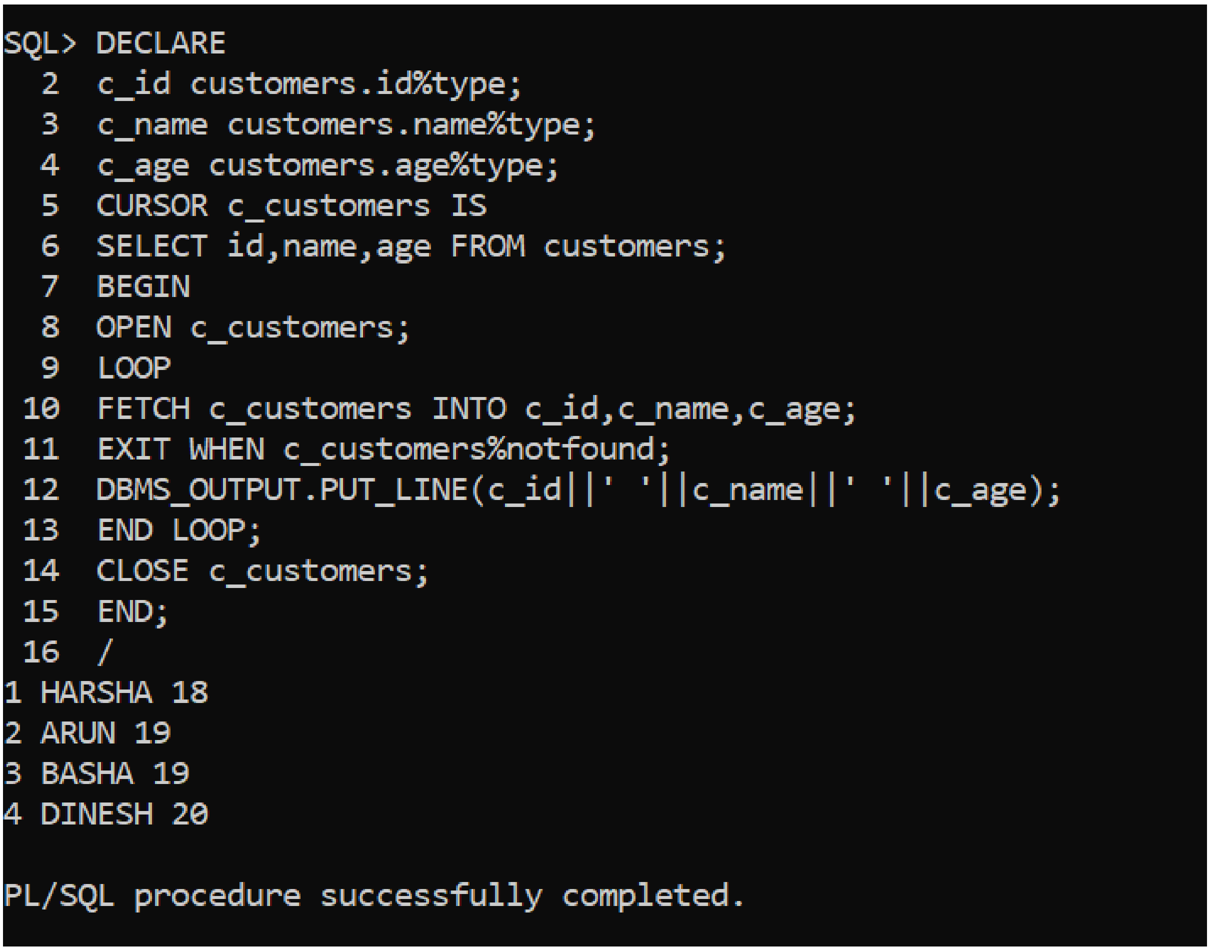
```
SQL> CREATE TABLE customers(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(20) NOT NULL,
  4  age NUMBER NOT NULL,
  5  salary NUMBER NOT NULL
  6  );

Table created.
```



```
SQL> INSERT ALL
  2  INTO customers VALUES(1,'HARSHA',18,50000)
  3  INTO customers VALUES(2,'ARUN',19,60000)
  4  INTO customers VALUES(3,'BASHA',19,65000)
  5  INTO customers VALUES(4,'DINESH',20,55000)
  6  SELECT * FROM DUAL;

4 rows created.
```



```
SQL> DECLARE
  2  tot_rows NUMBER;
  3  BEGIN
  4  UPDATE customers SET salary=salary*1.5;
  5  IF sql%notfound THEN
  6  DBMS_OUTPUT.PUT_LINE('No customers updated');
  7  ELSIF sql%found THEN
  8  tot_rows :=sql%rowcount;
  9  DBMS_OUTPUT.PUT_LINE(tot_rows||' customers updated');
 10  END IF;
 11  END;
 12  /
4 customers updated

PL/SQL procedure successfully completed.
```

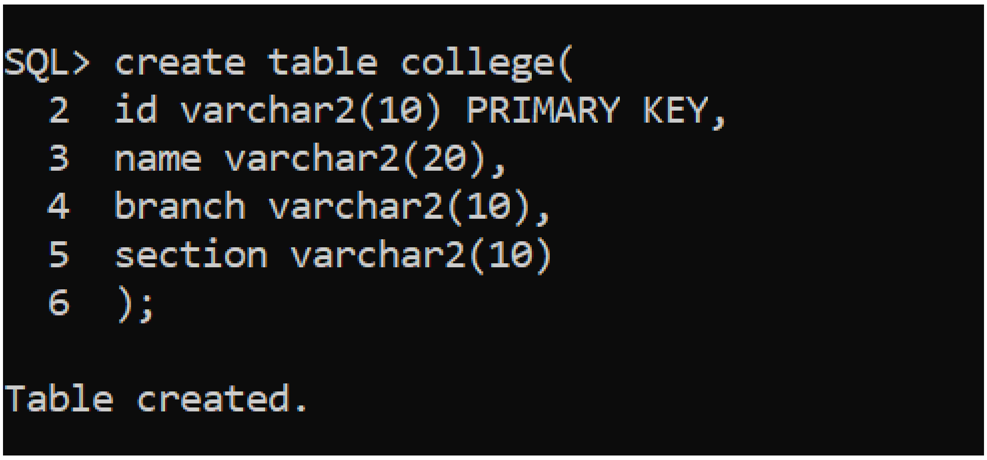


```
SQL> DECLARE
     c_id customers.id%type;
     c_name customers.name%type;
     c_age customers.age%type;
     CURSOR c_customers IS
     SELECT id,name,age FROM customers;
     BEGIN
     OPEN c_customers;
     LOOP
     FETCH c_customers INTO c_id,c_name,c_age;
     EXIT WHEN c_customers%notfound;
     DBMS_OUTPUT.PUT_LINE(c_id||' '||c_name||' '||c_age);
     END LOOP;
     CLOSE c_customers;
     END;
     /
1 HARSHA 18
2 ARUN 19
3 BASHA 19
4 DINESH 20

PL/SQL procedure successfully completed.
```

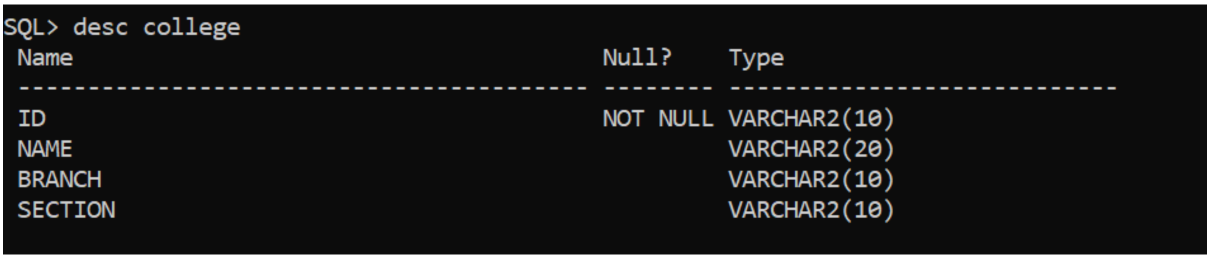
EXPERIMENT-9

224G1A0546 MAHAMMAAD THANVEER P

Primary key :

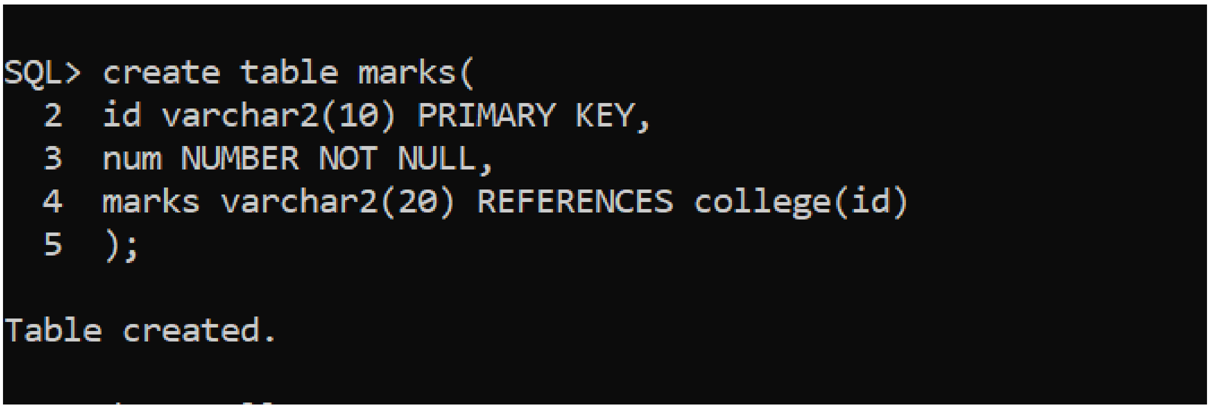


```
SQL> create table college(
  2  id varchar2(10) PRIMARY KEY,
  3  name varchar2(20),
  4  branch varchar2(10),
  5  section varchar2(10)
  6  );

Table created.
```

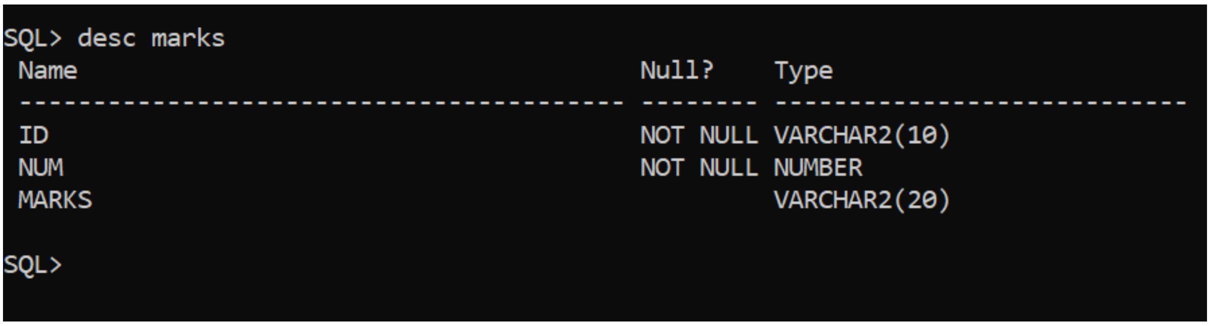


```
SQL> desc college
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL VARCHAR2(10)
 NAME                                               VARCHAR2(20)
 BRANCH                                             VARCHAR2(10)
 SECTION                                            VARCHAR2(10)
```

Foreign key :



```
SQL> create table marks(
  2  id varchar2(10) PRIMARY KEY,
  3  num NUMBER NOT NULL,
  4  marks varchar2(20) REFERENCES college(id)
  5  );

Table created.
```



```
SQL> desc marks
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL VARCHAR2(10)
 NUM                                       NOT NULL NUMBER
 MARKS                                              VARCHAR2(20)

SQL>
```