Winter – SEMESTER 2022 - 23
Course Code: MCSE506P
Course-Title: – Database Systems Lab
DIGITAL ASSIGNMENT - 2
(LAB)

Name: Nidhi Singh
Reg. No:22MAI0015
Slot- L29+L30

Faculty: Dr. KARTHIK G M - SCOPE

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4. NUMERIC/ARITHMETIC FUNCTIONS:

 ABS(N) – returns the absolute value of the column or values passed.

SQL> select abs(-65) from dual;

```
SQL> select abs(-65) from dual;

  ABS(-65)
----------
        65
```

 CEIL(N)- finds the smallest integer greater than or equal to n.

SQL> select ceil(balance) "ceil(88.9)" from account where balance between 500 and 20000;

```
SQL> select ceil(balance) "ceil(88.9)" from account where balance between 500 an
d 20000;

ceil(88.9)
----------
       945
```

 FLOOR(N)- finds the largest integer less than or equal to n

```
SQL> select floor(balance),ceil(88.9) from account where balance between 500 and 20000;
FLOOR(BALANCE) CEIL(88.9)
-------------- ----------
           945         89
```

 MOD(M,N) – returns the remainder of m divided by n

SQL> select mod(200,30) from dual;

SQL> select mod(200,30) from dual;

```
MOD(200,30)
-----------
         20
```

- POWER(M,N) – returns m raised to the power of n

SQL> select balance, power(balance,2) from account where account_no='p01';

SQL> select balance, power(balance,2) from account where account_no='1008';

```
  BALANCE POWER(BALANCE,2)
--------- ---------------
   188685       3.5602E+10
```

- SIGN(N) – returns -1 if negative else 0 for positive.

SQL> select balance-1500,sign(balance-1500) from account where account_no='i01' ;

SQL> select balance-1500, sign(balance-1500) from account where account_no='1002';

```
BALANCE-1500 SIGN(BALANCE-1500)
------------ ------------------
  3026639.1                  1
```

- SQRT(N) – returns the square root if n

SQL> select balance,sqrt(balance) from account where account_no='i01' ;

SQL> select balance, sqrt(balance) from account where account_no='1003';

```
  BALANCE SQRT(BALANCE)
--------- -------------
 3004766.1    1733.42612
```

- TUNC(M,N) – truncates the m to n decimal places.

SQL> select balance, trunc(sqrt(balance),2), trunc(sqrt(balance)) trunc(sqrt(balance),-2) from account where branch_name='pnb';

SQL> select balance, trunc(sqrt(balance),2), trunc(sqrt(balance)), trunc(sqrt(balance),-2) from account where branch_name='pnb';

```
   BALANCE TRUNC(SQRT(BALANCE),2) TRUNC(SQRT(BALANCE))
TRUNC(SQRT(BALANCE),-2)
--------- -------------------- -------------------- ----------------------
 3004766.1              1733.42                 1733                   1700
```

 ROUND(M,N) – rounds the colums, expression or values of m to n decimal places.

SQL> select balance, round(sqrt(balance),2), round(sqrt(balance),-2) round(sqrt(balance)) from account where branch_name='pnb';

SQL> select balance, round(sqrt(balance),2), round(sqrt(balance),-2), round(sqrt(balance)) from account where branch_name='pnb';

```
   BALANCE ROUND(SQRT(BALANCE),2) ROUND(SQRT(BALANCE),-2)
ROUND(SQRT(BALANCE))
--------- -------------------- -------------------- -------------------
 3004766.1              1733.43                 1700                1733
```

 EXP(N) - returns e raised to the nth power.

SQL> select exp(4) from dual;

SQL> select exp(4) from dual;

```
    EXP(4)
----------
  54.59815
```

 CHARACTER FUNCTIONS:

 CHR(X)- returns the character that has the value equivalent to x in the db character set.

SQL> select chr(37) a, chr(100) b,chr(101) c from dual;

SQL> select chr(37)a, chr(100) b,chr(101) c from dual;

```
A B C
- - -
% d e
```

 CONCAT (STR1,STR2) – returns str1 concatened with str2.

SQL> select concat('sachin','tendulkar') from dual;

```
SQL> select concat('sachin','tendulkar') from dual;

CONCAT('SACHIN'
---------------
sachintendulkar
```

SQL> select concat(customer_name,customer_city) from customer;

```
SQL> select concat(customer_name,customer_city) from customer;

CONCAT(CUSTOMER_NAME,CUSTOMER_CITY)
-----------------------------------------------
neha singh          mirzapur
nilu singh          mirzapur
shishir singh       varanasi
shivani             bhuj
ayantika            bengal
shreya              haridwar
vivek               lala chauk
vaibhav             prayagraj
annu                lucknow
ishu               varanasi
divya pathak        sahajahapur

CONCAT(CUSTOMER_NAME,CUSTOMER_CITY)
-----------------------------------------------
saket               balia
janhavi             mumbai
ayat ibrahim khan   mumbai
yashodhara          assam

15 rows selected.
```

 INITCAP(STR) – capitalizes the first character of the each word of str

SQL> select initcap(customer_name) from customer;

```
SQL> select initcap(customer_name) from customer;

INITCAP(CUSTOMER_NAM
--------------------
Annu
Ayantika
Ayat Ibrahim Khan
Divya Pathak
Ishu
Janhavi
Neha Singh
Nilu Singh
Saket
Shishir Singh
Shivani

INITCAP(CUSTOMER_NAM
--------------------
Shreya
Vaibhav
Vivek
Yashodhara

15 rows selected.
```

 LOWER(STR) – converts string to lower case

SQL> select lower(customer_name),initcap(customer_name) from customer;

```
SQL> select lower(customer_name),initcap(customer_name) from customer;

LOWER(CUSTOMER_NAME) INITCAP(CUSTOMER_NAM
-------------------- --------------------
annu                 Annu
ayantika             Ayantika
ayat ibrahim khan    Ayat Ibrahim Khan
divya pathak         Divya Pathak
ishu                 Ishu
janhavi              Janhavi
neha singh           Neha Singh
nilu singh           Nilu Singh
saket                Saket
```

```
shishir singh       Shishir Singh
shivani             Shivani

LOWER(CUSTOMER_NAME) INITCAP(CUSTOMER_NAM
-------------------- --------------------
shreya              Shreya
vaibhav             Vaibhav
vivek               Vivek
yashodhara          Yashodhara

15 rows selected.
```

- UPPER(STR) –converts string to upper case

SQL> select upper(customer_name), lower(customer_name), initcap(customer_name) from customer;

SQL> select upper(customer_name), lower(customer_name), initcap (customer_name) from customer;

```
UPPER(CUSTOMER_NAME) LOWER(CUSTOMER_NAME) INITCAP(CUSTOMER_NAM
-------------------- -------------------- --------------------
ANNU                 annu                 Annu
AYANTIKA             ayantika             Ayantika
AYAT IBRAHIM KHAN    ayat ibrahim khan    Ayat Ibrahim Khan
DIVYA PATHAK         divya pathak         Divya Pathak
ISHU                 ishu                 Ishu
JANHAVI              janhavi              Janhavi
NEHA SINGH           neha singh           Neha Singh
NILU SINGH           nilu singh           Nilu Singh
SAKET                saket                Saket
SHISHIR SINGH        shishir singh        Shishir Singh
SHIVANI              shivani              Shivani

UPPER(CUSTOMER_NAME) LOWER(CUSTOMER_NAME) INITCAP(CUSTOMER_NAM
-------------------- -------------------- --------------------
SHREYA               shreya               Shreya
VAIBHAV              vaibhav              Vaibhav
VIVEK                vivek                Vivek
YASHODHARA           yashodhara           Yashodhara

15 rows selected.
```

- LPAD(CH1, N,CH2) – pads the column from left to total width of n chr positions. the leading spaces are filled with ch2.

SQL> select balance, lpad(balance,10,'$') from account where branch_name='iob';

```
SQL> select balance, lpad(balance,10,'$') from account where branch_name='iob';

   BALANCE LPAD(BALANCE,10,'$')
---------- ----------------------------------------
 1669166.1 $1669166.1
```

 RPAD(CH1,N,CH2) – pads the column to the right, to a total width of n character positions.

SQL> select balance, lpad(balance,10,'$'), rpad(balance,10,'$') from account where branch_name='iob';

```
SQL> select balance, lpad(balance,10,'$'), rpad(balance,10,'$') from account where
branch_name='iob';

   BALANCE LPAD(BALANCE,10,'$')
---------- ----------------------------------------
RPAD(BALANCE,10,'$')
----------------------------------------
 1669166.1 $1669166.1
1669166.1$
```

 LTRIM(STR,’CH’) – removes all blank spaces from the left, if char is specified it removes from the left leading occurrence of character.

SQL> select customer_name, ltrim(customer_name), ltrim(customer_name,'r') from customer;

```
SQL> select customer_name, ltrim(customer_name), ltrim(customer_name,'r') from c
ustomer;

CUSTOMER_NAME        LTRIM(CUSTOMER_NAME) LTRIM(CUSTOMER_NAME,
-------------------- -------------------- --------------------
annu                 annu                 annu
ayantika             ayantika             ayantika
ayat ibrahim khan    ayat ibrahim khan    ayat ibrahim khan
divya pathak         divya pathak         divya pathak
ishu                 ishu                 ishu
janhavi              janhavi              janhavi
neha singh           neha singh           neha singh
nilu singh           nilu singh           nilu singh
saket                saket                saket
shishir singh        shishir singh        shishir singh
shivani              shivani              shivani
```

```
CUSTOMER_NAME       LTRIM(CUSTOMER_NAME) LTRIM(CUSTOMER_NAME,
------------------- -------------------- --------------------
shreya              shreya               shreya
vaibhav             vaibhav              vaibhav
vivek               vivek                vivek
yashodhara          yashodhara           yashodhara

15 rows selected.
```

 RTRIM(STR,'CH') – removes all blank spaces from the right, if char is specified it removes from the right leading occurrence of character.

SQL> select customer_name, rtrim(customer_name), rtrim(customer_name,'m')from customer;

```
SQL> select customer_name, rtrim(customer_name), rtrim(customer_name,'m') from c
ustomer;

CUSTOMER_NAME       RTRIM(CUSTOMER_NAME) RTRIM(CUSTOMER_NAME,
------------------- -------------------- --------------------
annu                annu                 annu
ayantika            ayantika             ayantika
ayat ibrahim khan   ayat ibrahim khan    ayat ibrahim khan
divya pathak        divya pathak         divya pathak
ishu                ishu                 ishu
janhavi             janhavi              janhavi
neha singh          neha singh           neha singh
nilu singh          nilu singh           nilu singh
saket               saket                saket
shishir singh       shishir singh        shishir singh
shivani             shivani              shivani

CUSTOMER_NAME       RTRIM(CUSTOMER_NAME) RTRIM(CUSTOMER_NAME,
------------------- -------------------- --------------------
shreya              shreya               shreya
vaibhav             vaibhav              vaibhav
vivek               vivek                vivek
yashodhara          yashodhara           yashodhara

15 rows selected.
```

 REPLACE(STR, SSTR,CH) - str with every occurrence of sstr replaced with ch.

SQL> select customer_name,replace(customer_name,'e','x') from customer ;

SQL> select customer_name,replace(customer_name,'e','x') from customer;

```
CUSTOMER_NAME       REPLACE(CUSTOMER_NAM
------------------- -------------------
annu                annu
ayantika            ayantika
ayat ibrahim khan   ayat ibrahim khan
divya pathak        divya pathak
ishu                ishu
janhavi             janhavi
neha singh          nxha singh
nilu singh          nilu singh
saket               sakxt
shishir singh       shishir singh
shivani             shivani

CUSTOMER_NAME       REPLACE(CUSTOMER_NAM
------------------- -------------------
shreya              shrxya
vaibhav             vaibhav
vivek               vivxk
yashodhara          yashodhara

15 rows selected.
```

- SUBSTR(STR,M,N) – returns substring of n character from the str specified.

SQL> select customer_name, substr(customer_name,2,4), substr(customer_name,4) from customer;

SQL> select customer_name, substr(customer_name,2,4),substr(customer_name,4) fro
m customer;

```
CUSTOMER_NAME       SUBSTR(CUSTOMER_
------------------- ---------------
SUBSTR(CUSTOMER_NAME,4)
----------------------------------------------------------------
annu                nnu
u

ayantika            yant
ntika

ayat ibrahim khan   yat
t ibrahim khan
```

```
CUSTOMER_NAME       SUBSTR(CUSTOMER_
------------------- ---------------
SUBSTR(CUSTOMER_NAME,4)
----------------------------------------------------------------
divya pathak        ivya
ya pathak

ishu                shu
u

janhavi             anha
havi


CUSTOMER_NAME       SUBSTR(CUSTOMER_
------------------- ---------------
SUBSTR(CUSTOMER_NAME,4)
----------------------------------------------------------------
neha singh          eha
a singh

nilu singh          ilu
u singh

saket               aket
et


CUSTOMER_NAME       SUBSTR(CUSTOMER_
------------------- ---------------
SUBSTR(CUSTOMER_NAME,4)
----------------------------------------------------------------
shishir singh       hish
shir singh

shivani             hiva
vani

shreya              hrey
eya


CUSTOMER_NAME       SUBSTR(CUSTOMER_
------------------- ---------------
```

```
SUBSTR(CUSTOMER_NAME,4)
--------------------------------------------------------------
vaibhav             aibh
bhav

vivek               ivek
ek

yashodhara          asho
hodhara


15 rows selected.
```

 TRANSLATE(STR, FSTR,TSTR) – returns str with all occurrences of each character in fstr replaced by tstr.

SQL> select translate('abcdefghij','abcdef','12345') from dual;

```
SQL> select translate('abcdefghij','abcdef','12345') from dual;

TRANSLATE
---------
12345ghij
```

SQL> select translate('abcd','abcd','1') from dual;

```
SQL> select translate('abcd','abcd','1') from dual;

T
-
1
```

SQL> select customer_name, translate(customer_name,'e',1) from customer;

```
SQL> select customer_name, translate(customer_name,'e',1) from customer;

CUSTOMER_NAME
--------------------
TRANSLATE(CUSTOMER_NAME,'E',1)
--------------------------------------------------------------------------------

annu
```

annu

ayantika
ayantika

ayat ibrahim khan
ayat ibrahim khan

CUSTOMER_NAME

TRANSLATE(CUSTOMER_NAME,'E',1)
---

divya pathak
divya pathak

ishu
ishu

janhavi
janhavi

CUSTOMER_NAME

TRANSLATE(CUSTOMER_NAME,'E',1)
---

neha singh
n1ha singh

nilu singh
nilu singh

saket
sak1t

CUSTOMER_NAME

TRANSLATE(CUSTOMER_NAME,'E',1)
---

shishir singh
shishir singh

shivani
shivani

shreya
shr1ya

CUSTOMER_NAME

TRANSLATE(CUSTOMER_NAME,'E',1)
---

vaibhav
vaibhav

vivek
viv1k

yashodhara
yashodhara

15 rows selected.

SQL> select customer_name, soundex(customer_name) from customer;

SQL> select customer_name, soundex(customer_name) from customer;

CUSTOMER_NAME	SOUN
annu	A500
ayantika	A532
ayat ibrahim khan	A316
divya pathak	D113
ishu	I200
janhavi	J510
neha singh	N252
nilu singh	N425
saket	S230
shishir singh	S262
shivani	S150

CUSTOMER_NAME SOUN

```
shreya          S600
vaibhav          V110
vivek           V120
yashodhara        Y236

15 rows selected.
```

 CHARACTER FUNCTION RETURNING NUMERIC VALUE:

 ASCII(STR) :

SQL> select ascii('a') from dual;

```
SQL> select ascii('a') from dual;

ASCII('A')
----------
        97
```

SQL> select ascii('b') from dual;

```
SQL> select ascii('b') from dual;

ASCII('B')
----------
        98
```

 INSTR(STR,CH) – returns the position if furst occurrence of ch in str.

SQL> select customer_name,instr(customer_name,'e') from customer;

```
SQL> select customer_name,instr(customer_name,'e') from customer;

CUSTOMER_NAME       INSTR(CUSTOMER_NAME,'E')
------------------- ------------------------
annu                                       0
ayantika                                    0
ayat ibrahim khan                                0
divya pathak                                  0
ishu                                      0
janhavi                                     0
neha singh                                   2
nilu singh                                  0
```

```
saket                          4
shishir singh                    0
shivani                         0

CUSTOMER_NAME       INSTR(CUSTOMER_NAME,'E')
------------------- ------------------------
shreya                          4
vaibhav                          0
vivek                           4
yashodhara                       0

15 rows selected.
```

- INSTRB(STR1, STR2,A,B) – same as instr except that a and the return value are expressed as bytes.

SQL> select instrb('corporate floor','or',5,2) from dual ;

```
SQL> select instrb('corporate floor','or',5,2) from dual;

INSTRB('CORPORATEFLOOR','OR',5,2)
---------------------------------
                             14
```

- LENGTH(STR)

SQL> select customer_name,length(customer_name) from customer;

```
SQL> select customer_name,length(customer_name) from customer;

CUSTOMER_NAME       LENGTH(CUSTOMER_NAME)
------------------- ---------------------
annu                               20
ayantika                            20
ayat ibrahim khan                        20
divya pathak                         20
ishu                               20
janhavi                             20
neha singh                           20
nilu singh                          20
saket                              20
shishir singh                        20
shivani                            20

CUSTOMER_NAME       LENGTH(CUSTOMER_NAME)
```

```
------------------- --------------------
shreya                          20
vaibhav                          20
vivek                           20
yashodhara                          20

15 rows selected.
```

date functions:

- SYSDATE

SQL> select sysdate from dual;

```
SQL> select sysdate from dual;

SYSDATE
---------
19-APR-23
```

- ADD_MONTHS(D,N) – adds or subtracts months to or from a date.

SQL> select add_months('30jan08',5) from dual;

```
SQL> select add_months('30jan08',5) from dual;

ADD_MONTH
---------
30-JUN-08
```

- ROUND(D,F) – round d to the nearest day

SQL> select round(to_date('12jan08'),'mm') from dual;

```
SQL> select round(to_date('12jan08'),'mm') from dual;

ROUND(TO_
---------
01-JAN-08
```

- TRUNC(D,F) – returns the date d truncated to unit specified by f.

SQL> select trunc(to_date('27-oct-08','dd-mm-yyy') ,'year')from dual;

SQL> select trunc(to_date('27-oct-08','dd-mm-yy'),'year') from dual;

```
TRUNC(TO_
---------
01-JAN-08
```

 MONTHS_BETWEEN (D1,D2) – returns the number of months between d1 and d2

SQL> select months_between('12jan08','12jan09') from dual;

SQL> select months_between('12jan08','12jan09') from dual;

```
MONTHS_BETWEEN('12JAN08','12JAN09')
-----------------------------------
                                -12
```

 LAST_DAY(D) – returns the date of the last day of the month specified.

SQL> select sysdate,last_day(sysdate) from dual;

SQL> select sysdate,last_day(sysdate) from dual;

```
SYSDATE   LAST_DAY(
--------- ---------
19-APR-23 30-APR-23
```

 NEXT_DAY(DATE,DAY) – returns the date of next specified day of the week after the date.

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

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

```
SYSDATE   NEXT_DAY(
--------- ---------
19-APR-23 26-APR-23
```

 TO_CHAR(D,F) – converts the date d to character format f

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

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

SYSDATE TO_CHAR(SYSDATE,'DAY')
--------- ----------
19-APR-23 wednesday

- TO_DATE(CHAR,'F') – converts the character string date to date format.

SQL> select to_char(to_date('12jan08'),'rm') from dual;

SQL> select to_char(to_date('12jan08'),'rm') from dual;

TO_C

I

- GREATEST(EXP1,EXP2)

SQL> select greatest(10,'7',-1) from dual;

SQL> select greatest(10,'7',-1) from dual;

GREATEST(10,'7',-1)

10

- LEAST(EXP1,EXP2)

SQL> select least('abcd','abcd','a','xyz') from dual;

SQL> select least('abcd','abcd','a','xyz') from dual;

L
-
A

- NVL(COL,VAL) – col with null values are ignored in all of the group function.

SQL> select account_no,balance+100,nvl(balance+100,0) from account where branch_name='sbi';

SQL> select account_no,balance+100,nvl(balance+100,0) from account where branch_ name='sbi';

```
ACCOUNT_NO BALANCE+100 NVL(BALANCE+100,0)
---------- ---------- ----------------
1002        3028239.1        3028239.1
1001         940973.5         940973.5
```

 TRANSLATE(CH, F, N) – returns ch with each f changed to n.

SQL> select customer_name, translate(customer_name, ‘e’, ‘1’) from customer;

```
SQL> select customer_name, translate(customer_name,'e','1') from customer;

CUSTOMER_NAME
------------------
TRANSLATE(CUSTOMER_NAME,'E','1')
--------------------------------------------------------------------------------

annu
annu

ayantika
ayantika

ayat ibrahim khan
ayat ibrahim khan


CUSTOMER_NAME
------------------
TRANSLATE(CUSTOMER_NAME,'E','1')
--------------------------------------------------------------------------------

divya pathak
divya pathak

ishu
ishu

janhavi
janhavi


CUSTOMER_NAME
------------------
TRANSLATE(CUSTOMER_NAME,'E','1')
--------------------------------------------------------------------------------
```

```
neha singh
n1ha singh

nilu singh
nilu singh

saket
sak1t


CUSTOMER_NAME
------------------
TRANSLATE(CUSTOMER_NAME,'E','1')
--------------------------------------------------------------------------------

shishir singh
shishir singh

shivani
shivani

shreya
shr1ya


CUSTOMER_NAME
------------------
TRANSLATE(CUSTOMER_NAME,'E','1')
--------------------------------------------------------------------------------

vaibhav
vaibhav

vivek
viv1k

yashodhara
yashodhara


15 rows selected.

SQL>
```

- DECODE(C,V1,V2) = all occurrence of v1 replace by v2 in c column

SQL> select branch_name, branch_city, decode(branch_city, ‘mumbai’, ‘usa’, ‘delhi’, ‘uk’, branch_city) from branch;

```
SQL> select branch_name,branch_city,decode(branch_city,'mumbai','usa','delhi','u
k',branch_city) from branch;

BRANCH_NAME     BRANCH_CITY                DECODE(BRANCH_CITY,'MUMBAI','U
--------------- -------------------------- ------------------------------
sbi             lucknow                    lucknow
pnb              mirzapur                   mirzapur
iob             mumbai                     mumbai
icc             sahajahapur                sahajahapur
kvb              bengal                    bengal
icici           haridwar                   haridwar
hdfc             varanasi                  varanasi
hsbc             bhuj                      bhuj

8 rows selected.
```

 UID: returns an integer that uniquely identities the current database user.
SQL> select uid from dual;

```
SQL> select uid from dual;

       UID
----------
         9
```

 USER: returns a varchar2 value containing the name of the current oracle user.
SQL> select uid,user,userenv('language') from dual;

```
SQL> select uid,user,userenv('language') from dual;

       UID
----------
USER
------------------------------------------------------------------------------

USERENV('LANGUAGE')
----------------------------------------------------
         9
SYSTEM
AMERICAN_AMERICA.AL32UTF8
```

SQL WITHIN PL/SQL

5A. PL/SQL – USING DEFAULT //PL/SQL CODE TO UPDATE SALARY OF EMPLOYEE NUMBER IS '7788' TO 3050 IF SALARY IS LESS THAN OR EQUAL TO 3000.

SQL> CREATE table temp1 AS SELECT * FROM emp;

SQL> create table temp1 as select * from emp;

Table created.

SQL> SELECT * FROM emp WHERE empnp = 7788;

SQL> select *from emp where empno=7788;

```
    EMPNO ENAME              JOB                  MGR HIREDATE
--------- -------------------- ------------------ --------- --------
      SAL       COMM     DEPTNO
--------- ---------- ----------
     7788 scott              analyst              7566 09-DEC-82
     3000                  20
```

SQL> ED

```
DECLARE
x NUMBER(7,2);
BEGIN
SELECT sal INTO x FROM emp WHERE empno = 7788;
IF x <= 3000 THEN UPDATE emp SET sal = 3050 WHERE empno = 7788;
END IF;
dbms_output.put_line('UPDATE is done sucessfully');
END;
```

SQL> set serveroutput on;
SQL> ed
Wrote file afiedt.buf

```
  1  DECLARE
  2     x NUMBER(7,2);
  3  BEGIN
  4     SELECT sal INTO x FROM emp WHERE empno = 7788;
```

```
  5    IF x <= 3000 THEN UPDATE emp SET sal = 3050 WHERE empno = 7788;
  6    END IF;
  7    dbms_output.put_line('UPDATE is done sucessfully');
  8* END;
SQL> ed
Wrote file afiedt.buf

  1  DECLARE
  2    x NUMBER(7,2);
  3  BEGIN
  4    SELECT sal INTO x FROM emp WHERE empno = 7788;
  5    IF x <= 3000 THEN UPDATE emp SET sal = 3050 WHERE empno = 7788;
  6    END IF;
  7    dbms_output.put_line('UPDATE is done sucessfully');
  8* END;
SQL> /
UPDATE is done sucessfully

PL/SQL procedure successfully completed.

SQL>

SQL> select *from emp where empno=7788;

    EMPNO ENAME      JOB              MGR HIREDATE
---------- ---------- ---------- ---------- ---------
      SAL       COMM     DEPTNO
---------- ---------- ----------
     7788 scott      analyst          7566 09-DEC-82
     3000                    20
```

5.B PL/SQL USING %ROWTYPE //PL/SQL CODE TO INSERT ALL THE DETAILS OF EMPLOYEE NO 7698 TO NEW TABLE TEMP1 WHICH HAS SAME STRUCTURE AS EMP TABLE

SQL> CREATE table temp1 as SELECT * FROM emp;

```
SQL> create table temp1 as select * from emp;
create table temp1 as select * from emp
                      *
ERROR at line 1:
ORA-00955: name is already used by an existing object
```

SQL> DELETE temp1;

```
SQL> delete temp1;

14 rows deleted.
```

SQL> DESC temp1;

```
SQL> desc temp1;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 EMPNO                                              NUMBER(12,2)
 ENAME                                              VARCHAR2(20)
 JOB                                               VARCHAR2(20)
 MGR                                                NUMBER(12,2)
 HIREDATE                                             DATE
 SAL                                               NUMBER(12,2)
 COMM                                               NUMBER(12,2)
 DEPTNO                                             NUMBER(12,2)
```

```
SQL>
DECLARE
nr emp%ROWTYPE;
BEGIN
SELECT * INTO nr FROM emp WHERE empno=7698;
INSERT INTO temp1 VALUES (nr.empno, nr.ename, nr.job, nr.mgr, nr.hiredate,
nr.sal, nr.comm, nr.deptno);
dbms_output.put_line(' INSERT completed succefully');
END;
/
```

```
SQL> ed
Wrote file afiedt.buf

  1  DECLARE
  2    nr emp%ROWTYPE;
  3  BEGIN
  4    SELECT * INTO nr FROM emp WHERE empno=7698;
  5    INSERT INTO temp1 VALUES (nr.empno, nr.ename, nr.job, nr.mgr, nr.hiredat
e,
  6              nr.sal, nr.comm, nr.deptno);
  7    dbms_output.put_line(' INSERT completed succefully');
  8* END;
```

```
 9 /
INSERT completed succefully

PL/SQL procedure successfully completed.
```

SQL> SELECT * FROM temp1;

```
QL> select *from temp1;

   EMPNO ENAME              JOB                  MGR HIREDATE
--------- ------------------ ------------------ ---------- ---------
     SAL       COMM     DEPTNO
--------- ---------- ----------
    7698 blake              manager                 7839 01-MAY-81
    2850                    30
```

5C. PL/SQL – USING %TYPE // UPDATE THE COMMISSION OF THE EMPLOYEE NUMBER 7369 TO RS.300, IF IT IS NULL ELSE RAISE HIS COMMISSION BY 25 %.

SQL> SELECT * FROM emp WHERE empno=7369;

```
SQL> select *from emp where empno=7369;

    EMPNO ENAME              JOB                  MGR HIREDATE
---------- ------------------ ------------------ ---------- ---------
     SAL       COMM     DEPTNO
---------- ---------- ----------
     7369 smith              clerk                   7902 17-DEC-80
      800                    20
```

```
SQL> ed
DECLARE
eno NUMBER(4) := 7369;
com emp.comm%TYPE;
BEGIN
SELECT comm INTO com FROM emp WHERE empno = eno;
IF com IS NULL THEN
UPDATE emp SET comm =300 WHERE empno=eno;
ELSE
com :=com+com*0.25;
UPDATE emp SET comm = com WHERE empno = eno;
END IF;
dbms_output.put_line('UPDATE complete sucessfully');
END;
```

```
SQL> set serveroutput on;
SQL> ed
Wrote file afiedt.buf

  1  DECLARE
  2     eno NUMBER(4) := 7369;
  3     com emp.comm%TYPE;
  4  BEGIN
  5     SELECT comm INTO com FROM emp WHERE empno = eno;
  6     IF com IS NULL THEN
  7           UPDATE emp SET comm =300 WHERE empno=eno;
  8     ELSE
  9           com :=com+com*0.25;
 10           UPDATE emp SET comm = com WHERE empno = eno;
 11     END IF;
 12     dbms_output.put_line('UPDATE complete sucessfully');
 13* END;
SQL> /
UPDATE complete sucessfully

PL/SQL procedure successfully completed.
```

SQL> SELECT * FROM emp WHERE empno=7369;

```
SQL> select * from emp where empno=7369;

     EMPNO ENAME              JOB                  MGR HIREDATE
---------- ------------------ ------------------ ---------- ---------
       SAL       COMM     DEPTNO
---------- ---------- ----------
      7369 smith              clerk                7902 17-DEC-80
       800                    20
```

5.D //PL/SQL CODE WHICH PRODUCES THE FOLLOWING OUTPUT: (I.E PROGRAM TO FIND OUT WHO IS REPORTING TO WHOM STARTING FROM EMPNO 7876)

Empno	Ename	Reporting to
7876	ADAMS	SCOTT
7788	SCOTT	JONES
7566	JONES	KING
7839	KING	-

SQL> ed

```
DECLARE
mg emp.mgr%TYPE;
emnu emp.empno%TYPE;
en emp.ename%TYPE;
mn emp.ename%TYPE;
sn NUMBER(4);
BEGIN
sn := &sn;
SELECT empno,ename,mgr INTO emnu, en, mg FROM emp WHERE
empno = sn;
LOOP
SELECT empno,mgr,ename INTO emnu,mg,mn FROM emp
WHERE empno = mg;
dbms_output.put_line(sn||' '||en||' '||mn);
EXIT WHEN mg IS NULL;
sn :=emnu;
emnu :=mg;
en :=mn;
END LOOP;
dbms_output.put_line(emnu||' '||mn);
COMMIT;
END;
/
```

```
SQL> set serveroutput on;
SQL> ed
Wrote file afiedt.buf

  1  DECLARE
  2     mg emp.mgr%TYPE;
  3     emnu emp.empno%TYPE;
  4     en emp.ename%TYPE;
  5     mn emp.ename%TYPE;
  6     sn NUMBER(4);
  7  BEGIN
  8     sn := &sn;
  9     SELECT empno,ename,mgr INTO emnu, en, mg FROM emp WHERE
 10           empno = sn;
 11     LOOP
 12           SELECT empno,mgr,ename INTO emnu,mg,mn FROM emp
 13                 WHERE empno = mg;
 14           dbms_output.put_line(sn||' '||en||' '||mn);
 15           EXIT WHEN mg IS NULL;
 16           sn :=emnu;
 17           emnu :=mg;
```

```
 18           en :=mn;
 19     END LOOP;
 20     dbms_output.put_line(emnu||' '||mn);
 21     COMMIT;
 22* END;
 23  /
Enter value for sn: 7369
old   8:       sn := &sn;
new   8:       sn := 7369;
7369 smith ford
7902 ford jones
7566 jones king
7839 king

PL/SQL procedure successfully completed.
```

5.E // PL/SQL PROGRAM DISPLAYS THE TOTAL SALARY WHICH INCLUDES COMMISSION OF EMPNO 7368. IT SHOULD DISPLAY EMPLOYEE NAME HIS DEPARTMENT DETAILS AND HIS OLD AND NEW SALARY.

```
SQL> ed
DECLARE
x NUMBER(4);
TYPE dr IS RECORD ( dno dept.deptno%TYPE, vname dept.dname%TYPE,
vloc dept.loc%TYPE, name emp.ename%TYPE,
vsal emp.sal%TYPE, vcom emp.comm%TYPE,
newsal emp.sal%TYPE);
d dr;
BEGIN
SELECT ename,sal,comm,dept.deptno,dname,loc INTO d.name,d.vsal,
d.vcom,d.dno,d.vname,d.vloc FROM emp, dept WHERE
emp.deptno=dept.deptno AND empno = &x;
d.newsal := d.vsal+NVL(d.vcom,0);
dbms_output.put_line(d.dno||' '||d.vname||' '||d.vloc||' '|| d.name||' '||d.vsal||' '|| d.vcom||'
'||d.newsal);
END;
/
```

```
SQL> set serveroutput on;
SQL> ed
Wrote file afiedt.buf

  1  DECLARE
  2     x NUMBER(4);
  3     TYPE dr IS RECORD ( dno dept.deptno%TYPE, vname dept.dname%TYPE,
```

```
  4            vloc dept.loc%TYPE, name emp.ename%TYPE,
  5            vsal emp.sal%TYPE, vcom emp.comm%TYPE,
  6            newsal emp.sal%TYPE);
  7     d dr;
  8  BEGIN
  9     SELECT ename,sal,comm,dept.deptno,dname,loc INTO d.name,d.vsal,
 10             d.vcom,d.dno,d.vname,d.vloc FROM emp, dept WHERE
 11             emp.deptno=dept.deptno AND empno = &x;
 12     d.newsal := d.vsal+NVL(d.vcom,0);
 13     dbms_output.put_line(d.dno||' '||d.vname||' '||d.vloc||' '|| d.name||' '
||d.vsal||' '||         d.vcom||' '||d.newsal);
 14* END;
SQL> /
Enter value for x: 7368
old  11:               emp.deptno=dept.deptno AND empno = &x;
new  11:                emp.deptno=dept.deptno AND empno = 7368;
DECLARE
*
ERROR at line 1:
ORA-01403: no data found
ORA-06512: at line 9

SQL> select *from emp where empno=7369;

     EMPNO ENAME                JOB                       MGR HIREDATE
---------- -------------------- -------------------- ---------- ---------
       SAL       COMM     DEPTNO
---------- ---------- ----------
      7369 smssith               clerk                     7902 17-DEC-80
       800                  20
```