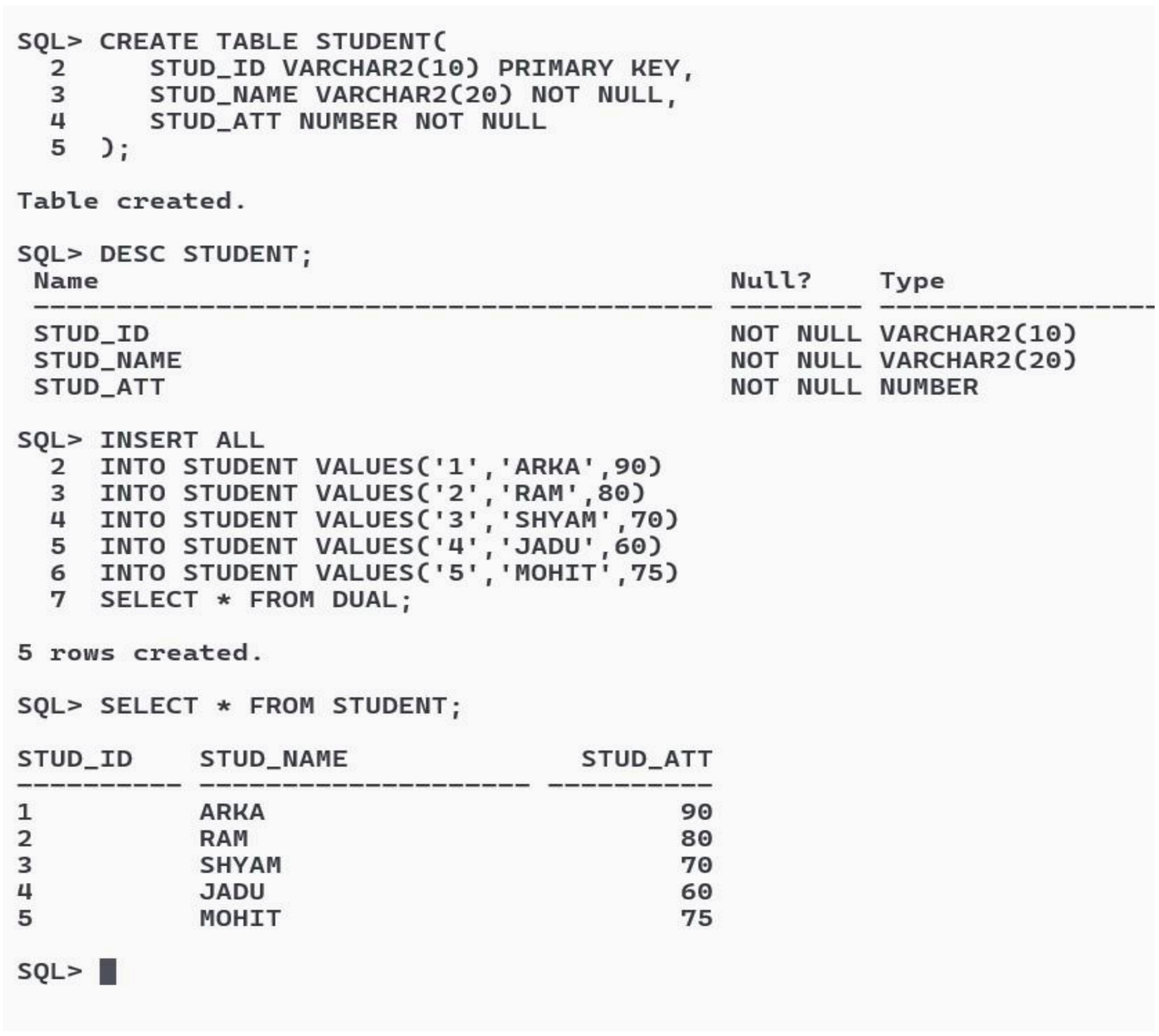
ASSIGNMENT 8

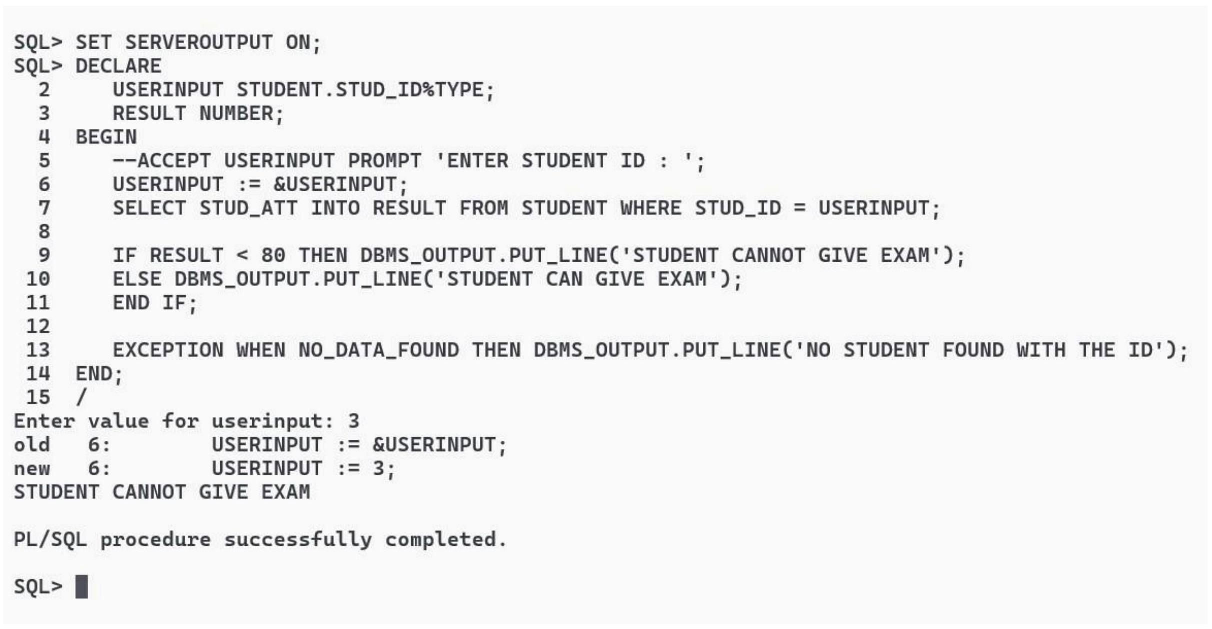
i.Implement a PL/SQL block that will accept student id number from the user, and check is student attendance is less than 80% then display message that student cannot appear in exam. [Table: STUDENT (STUD_ID, primary key, STUD_NAME, STUD_ATT)].

```
CREATE TABLE STUDENT(
        STUD_ID VARCHAR2(10) PRIMARY KEY,
        STUD_NAME VARCHAR2(20) NOT NULL,
        STUD_ATT NUMBER NOT NULL
);

INSERT ALL
INTO STUDENT VALUES('1','ARKA',90)
INTO STUDENT VALUES('2','RAM',80)
INTO STUDENT VALUES('3','SHYAM',70)
INTO STUDENT VALUES('4','JADU',60)
INTO STUDENT VALUES('5','MOHIT',75)
SELECT * FROM DUAL;
```



```
SQL> CREATE TABLE STUDENT(
  2      STUD_ID VARCHAR2(10) PRIMARY KEY,
  3      STUD_NAME VARCHAR2(20) NOT NULL,
  4      STUD_ATT NUMBER NOT NULL
  5  );

Table created.

SQL> DESC STUDENT;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 STUD_ID                                   NOT NULL VARCHAR2(10)
 STUD_NAME                                 NOT NULL VARCHAR2(20)
 STUD_ATT                                  NOT NULL NUMBER

SQL> INSERT ALL
  2  INTO STUDENT VALUES('1','ARKA',90)
  3  INTO STUDENT VALUES('2','RAM',80)
  4  INTO STUDENT VALUES('3','SHYAM',70)
  5  INTO STUDENT VALUES('4','JADU',60)
  6  INTO STUDENT VALUES('5','MOHIT',75)
  7  SELECT * FROM DUAL;

5 rows created.

SQL> SELECT * FROM STUDENT;

STUD_ID    STUD_NAME              STUD_ATT
---------- -------------------- ----------
1          ARKA                         90
2          RAM                          80
3          SHYAM                        70
4          JADU                         60
5          MOHIT                        75

SQL>
```

```
SET SERVEROUTPUT ON;
DECLARE
        USERINPUT STUDENT.STUD_ID%TYPE;
        RESULT NUMBER;
BEGIN
        USERINPUT := '&SID';
        SELECT STUD_ATT INTO RESULT FROM STUDENT WHERE STUD_ID =
USERINPUT;
        IF RESULT < 80 THEN DBMS_OUTPUT.PUT_LINE('STUDENT CANNOT GIVE
EXAM');
        ELSE DBMS_OUTPUT.PUT_LINE('STUDENT CAN GIVE EXAM');
        END IF;
END;
/
```



```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
       USERINPUT STUDENT.STUD_ID%TYPE;
       RESULT NUMBER;
     BEGIN
       --ACCEPT USERINPUT PROMPT 'ENTER STUDENT ID : ';
       USERINPUT := &USERINPUT;
       SELECT STUD_ATT INTO RESULT FROM STUDENT WHERE STUD_ID = USERINPUT;

       IF RESULT < 80 THEN DBMS_OUTPUT.PUT_LINE('STUDENT CANNOT GIVE EXAM');
       ELSE DBMS_OUTPUT.PUT_LINE('STUDENT CAN GIVE EXAM');
       END IF;

       EXCEPTION WHEN NO_DATA_FOUND THEN DBMS_OUTPUT.PUT_LINE('NO STUDENT FOUND WITH THE ID');
     END;
     /
Enter value for userinput: 3
old   6:        USERINPUT := &USERINPUT;
new   6:        USERINPUT := 3;
STUDENT CANNOT GIVE EXAM

PL/SQL procedure successfully completed.

SQL> █
```

ii.Implement a PL/SQL code block that will accept an account number from the user. Check if the user's balance is less than the minimum balance, only then deduct Rs.100 from the balance. The process is fired on the ACCT_MSTR table.
[Table: ACCT_MSTR (ACCT_NO, ACCT_HOLDR_NAME, CURBAL].

```
CREATE TABLE ACCT_MSTR(
        ACCT_NO VARCHAR2(15) PRIMARY KEY,
        ACCT_HOLDER_NAME VARCHAR2(20) NOT NULL,
        CURBAL NUMBER
);
```

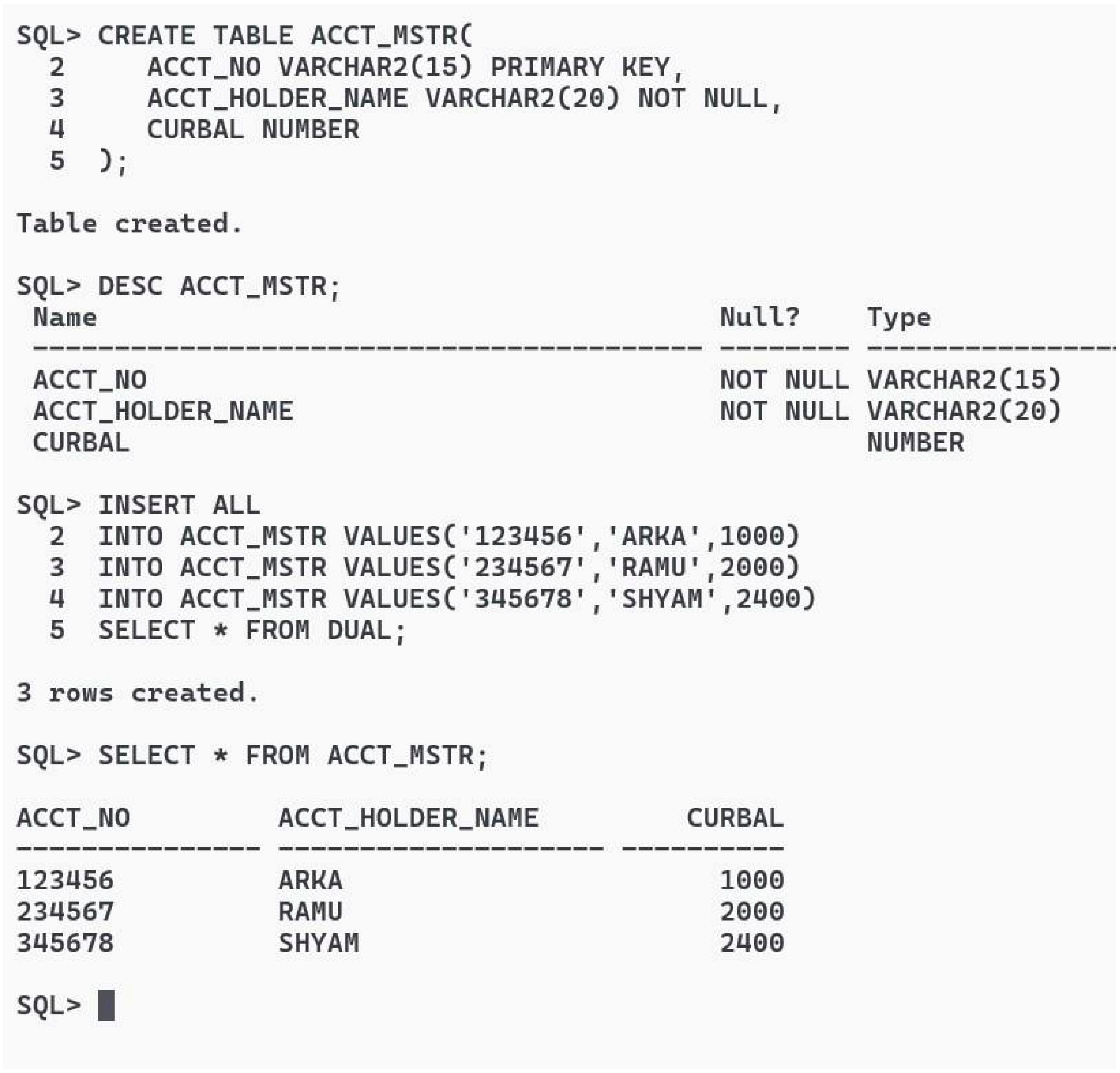
INSERT ALL

INTO ACCT_MSTR VALUES('123456','ARKA',1000)

INTO ACCT_MSTR VALUES('234567','RAMU',2000)

INTO ACCT_MSTR VALUES('345678','SHYAM',2400)

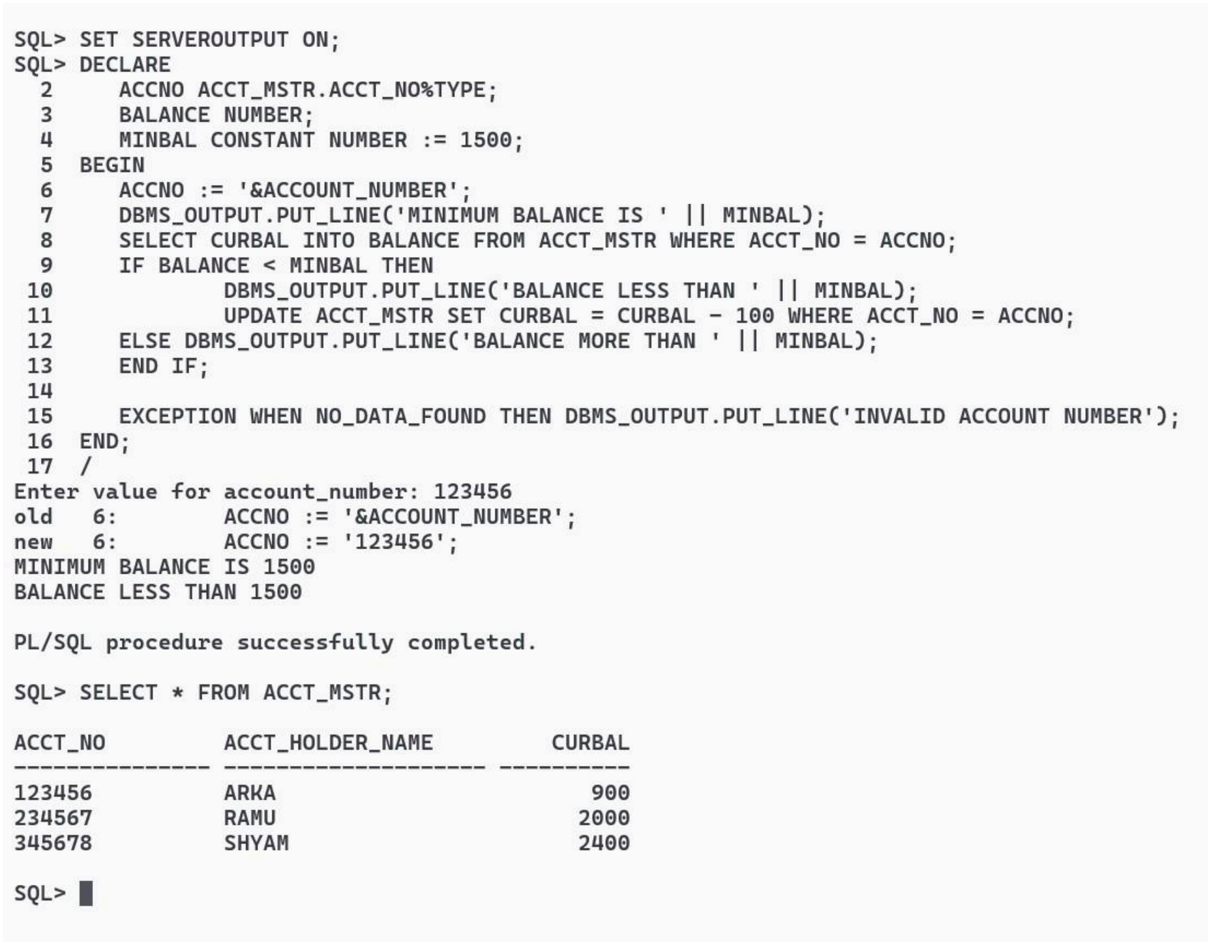
SELECT * FROM DUAL;



```
SQL> CREATE TABLE ACCT_MSTR(
  2     ACCT_NO VARCHAR2(15) PRIMARY KEY,
  3     ACCT_HOLDER_NAME VARCHAR2(20) NOT NULL,
  4     CURBAL NUMBER
  5  );

Table created.

SQL> DESC ACCT_MSTR;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 ACCT_NO                                   NOT NULL VARCHAR2(15)
 ACCT_HOLDER_NAME                          NOT NULL VARCHAR2(20)
 CURBAL                                             NUMBER

SQL> INSERT ALL
  2  INTO ACCT_MSTR VALUES('123456','ARKA',1000)
  3  INTO ACCT_MSTR VALUES('234567','RAMU',2000)
  4  INTO ACCT_MSTR VALUES('345678','SHYAM',2400)
  5  SELECT * FROM DUAL;

3 rows created.

SQL> SELECT * FROM ACCT_MSTR;

ACCT_NO         ACCT_HOLDER_NAME         CURBAL
--------------- -------------------- ----------
123456          ARKA                       1000
234567          RAMU                       2000
345678          SHYAM                      2400

SQL> 
```

SET SERVEROUTPUT ON;

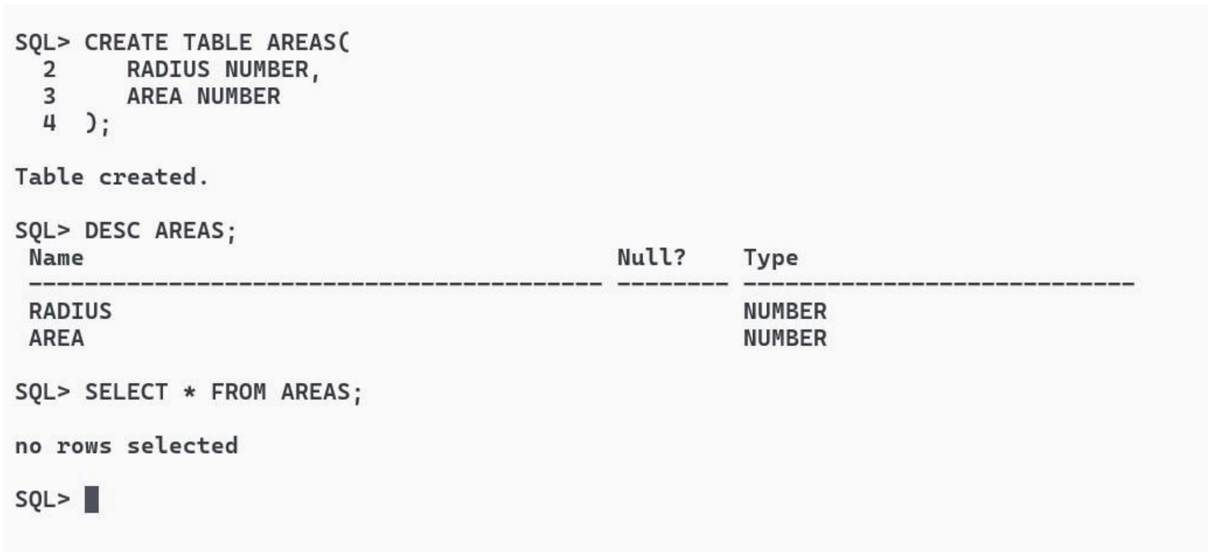
```
DECLARE
        ACCNO ACCT_MSTR.ACCT_NO%TYPE;
        BALANCE NUMBER;
        MINBAL CONSTANT NUMBER := 1500;
BEGIN
        ACCNO := '&ACCOUNT_NUMBER';
        DBMS_OUTPUT.PUT_LINE('MINIMUM BALANCE IS ' || MINBAL);
        SELECT CURBAL INTO BALANCE FROM ACCT_MSTR WHERE ACCT_NO =
ACCNO;
        IF BALANCE < MINBAL THEN
                DBMS_OUTPUT.PUT_LINE('BALANCE LESS THAN ' || MINBAL);
                UPDATE ACCT_MSTR SET CURBAL = CURBAL - 100 WHERE
ACCT_NO = ACCNO;
        ELSE DBMS_OUTPUT.PUT_LINE('BALANCE MORE THAN ' || MINBAL);
        END IF;

        EXCEPTION WHEN NO_DATA_FOUND THEN
DBMS_OUTPUT.PUT_LINE('INVALID ACCOUNT NUMBER');
END;
/
```



```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
  2     ACCNO ACCT_MSTR.ACCT_NO%TYPE;
  3     BALANCE NUMBER;
  4     MINBAL CONSTANT NUMBER := 1500;
  5  BEGIN
  6     ACCNO := '&ACCOUNT_NUMBER';
  7     DBMS_OUTPUT.PUT_LINE('MINIMUM BALANCE IS ' || MINBAL);
  8     SELECT CURBAL INTO BALANCE FROM ACCT_MSTR WHERE ACCT_NO = ACCNO;
  9     IF BALANCE < MINBAL THEN
 10             DBMS_OUTPUT.PUT_LINE('BALANCE LESS THAN ' || MINBAL);
 11             UPDATE ACCT_MSTR SET CURBAL = CURBAL - 100 WHERE ACCT_NO = ACCNO;
 12     ELSE DBMS_OUTPUT.PUT_LINE('BALANCE MORE THAN ' || MINBAL);
 13     END IF;
 14
 15     EXCEPTION WHEN NO_DATA_FOUND THEN DBMS_OUTPUT.PUT_LINE('INVALID ACCOUNT NUMBER');
 16  END;
 17  /
Enter value for account_number: 123456
old   6:        ACCNO := '&ACCOUNT_NUMBER';
new   6:        ACCNO := '123456';
MINIMUM BALANCE IS 1500
BALANCE LESS THAN 1500

PL/SQL procedure successfully completed.

SQL> SELECT * FROM ACCT_MSTR;

ACCT_NO         ACCT_HOLDER_NAME         CURBAL
--------------- -------------------- ----------
123456          ARKA                        900
234567          RAMU                       2000
345678          SHYAM                      2400

SQL> █
```

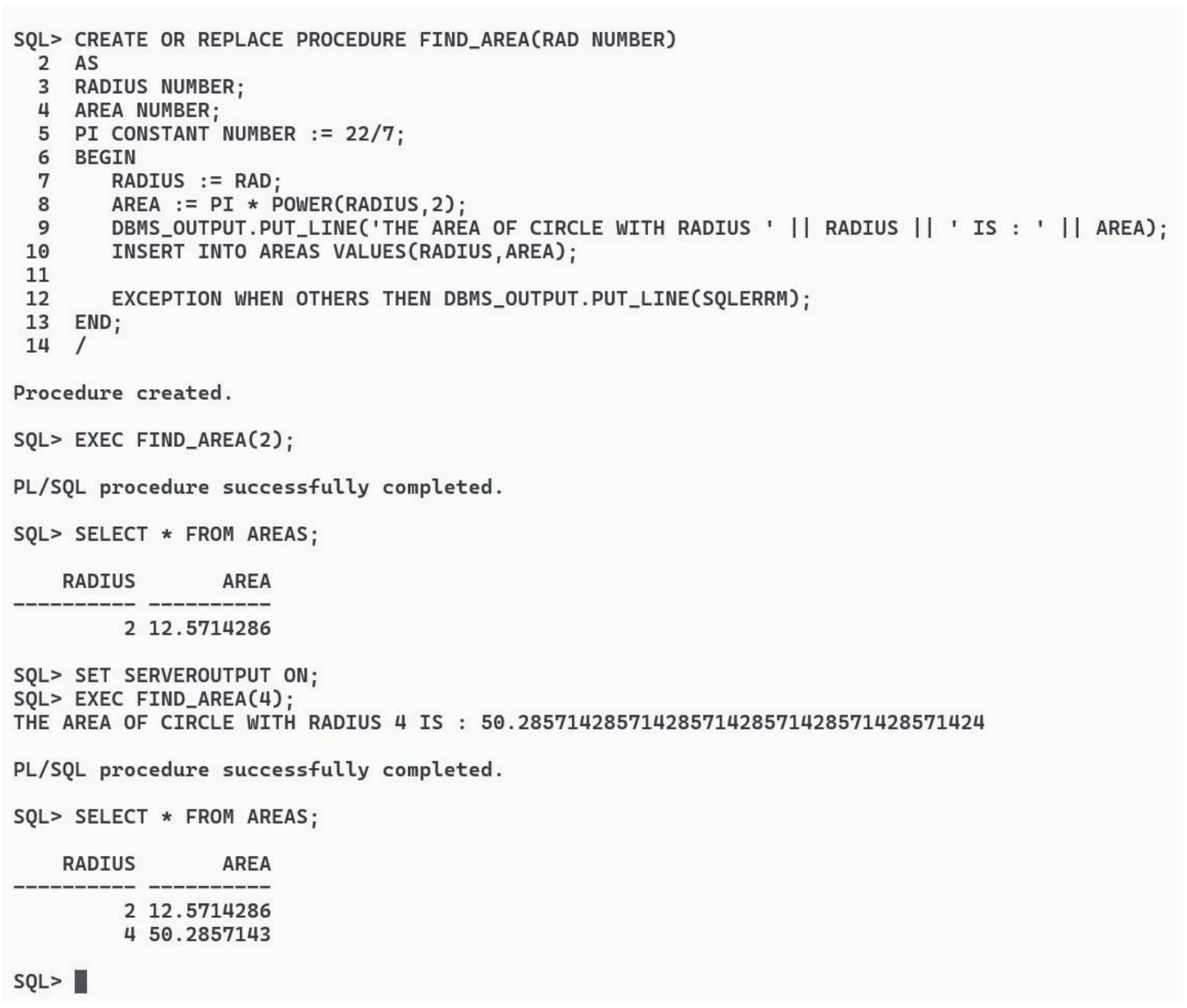
iii.Implement a PL/SQL code block to calculate the area of a circle for a value of radius varying from 3 to 7. Store the radius and the corresponding values of calculated area in an empty table named AREAS, consisting of two columns Radius and Area.
[Table: AREAS (RADIUS, AREA)].

```
CREATE TABLE AREAS(
	RADIUS NUMBER,
	AREA NUMBER
);
```



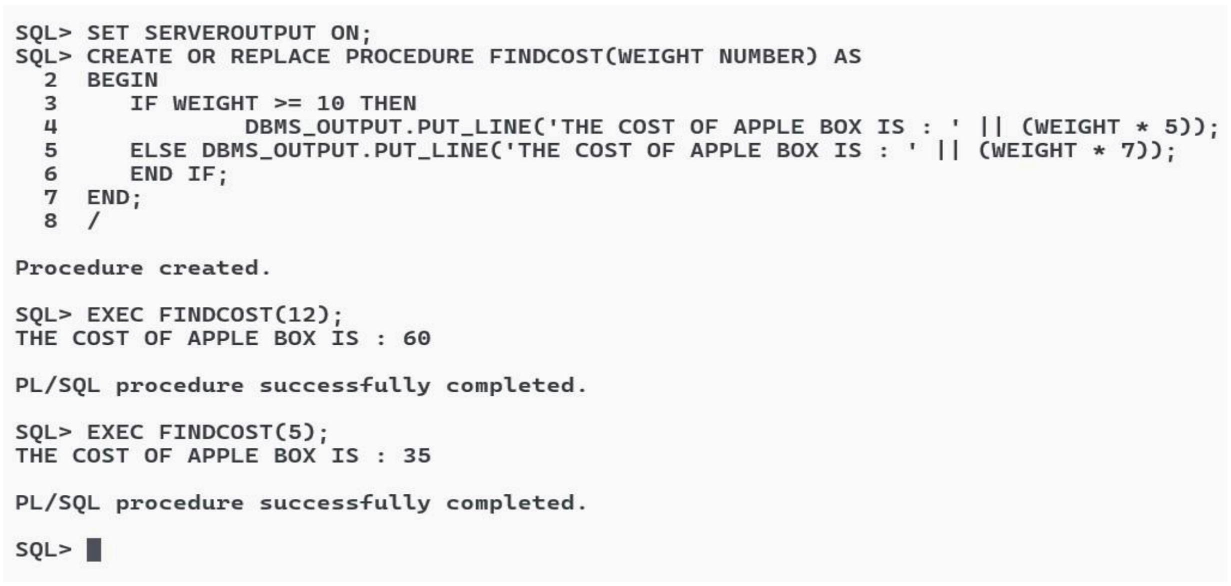
```
SQL> CREATE TABLE AREAS(
  2     RADIUS NUMBER,
  3     AREA NUMBER
  4  );

Table created.

SQL> DESC AREAS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 RADIUS                                             NUMBER
 AREA                                               NUMBER

SQL> SELECT * FROM AREAS;

no rows selected

SQL> █
```

```
CREATE OR REPLACE PROCEDURE FIND_AREA(RAD NUMBER)
AS
RADIUS NUMBER;
AREA NUMBER;
PI CONSTANT NUMBER := 22/7;
BEGIN
	RADIUS := RAD;
	AREA := PI * POWER(RADIUS,2);
	DBMS_OUTPUT.PUT_LINE('THE AREA OF CIRCLE WITH RADIUS ' ||
RADIUS || ' IS : ' || AREA);
	INSERT INTO AREAS VALUES(RADIUS,AREA);

	EXCEPTION WHEN OTHERS THEN DBMS_OUTPUT.PUT_LINE(SQLERRM);
END;
/
```



```
SQL> CREATE OR REPLACE PROCEDURE FIND_AREA(RAD NUMBER)
  2  AS
  3  RADIUS NUMBER;
  4  AREA NUMBER;
  5  PI CONSTANT NUMBER := 22/7;
  6  BEGIN
  7     RADIUS := RAD;
  8     AREA := PI * POWER(RADIUS,2);
  9     DBMS_OUTPUT.PUT_LINE('THE AREA OF CIRCLE WITH RADIUS ' || RADIUS || ' IS : ' || AREA);
 10     INSERT INTO AREAS VALUES(RADIUS,AREA);
 11
 12     EXCEPTION WHEN OTHERS THEN DBMS_OUTPUT.PUT_LINE(SQLERRM);
 13  END;
 14  /

Procedure created.

SQL> EXEC FIND_AREA(2);

PL/SQL procedure successfully completed.

SQL> SELECT * FROM AREAS;

    RADIUS       AREA
---------- ----------
         2 12.5714286

SQL> SET SERVEROUTPUT ON;
SQL> EXEC FIND_AREA(4);
THE AREA OF CIRCLE WITH RADIUS 4 IS : 50.28571428571428571428571428571428571424

PL/SQL procedure successfully completed.

SQL> SELECT * FROM AREAS;

    RADIUS       AREA
---------- ----------
         2 12.5714286
         4 50.2857143

SQL> 
```

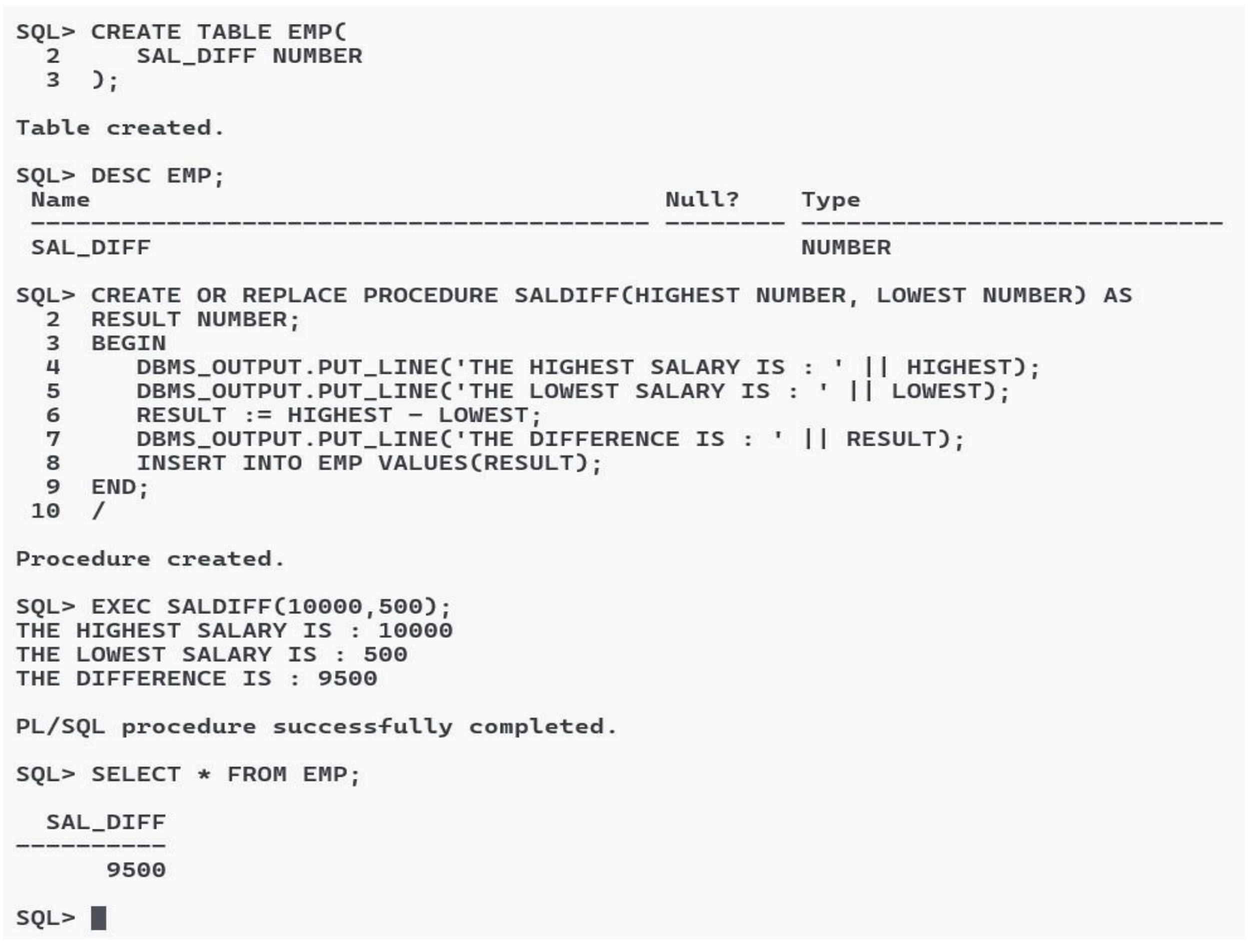
iv.Implement a PL/SQL procedure that takes weight of an apple box as input from the user. If the weight is >= 10 kg, rate =Rs. 5/kg. If weight is < 10 kg, rate = Rs. 7/kg. Calculate the cost of the apple box. Display the output on the screen.



```
SQL> SET SERVEROUTPUT ON;
SQL> CREATE OR REPLACE PROCEDURE FINDCOST(WEIGHT NUMBER) AS
  2  BEGIN
  3     IF WEIGHT >= 10 THEN
  4             DBMS_OUTPUT.PUT_LINE('THE COST OF APPLE BOX IS : ' || (WEIGHT * 5));
  5     ELSE DBMS_OUTPUT.PUT_LINE('THE COST OF APPLE BOX IS : ' || (WEIGHT * 7));
  6     END IF;
  7  END;
  8  /

Procedure created.

SQL> EXEC FINDCOST(12);
THE COST OF APPLE BOX IS : 60

PL/SQL procedure successfully completed.

SQL> EXEC FINDCOST(5);
THE COST OF APPLE BOX IS : 35

PL/SQL procedure successfully completed.

SQL> 
```

v.Implement a PL/SQL procedure to calculate the difference between highest salaried and lowest salaried employee. Store the information in a table.

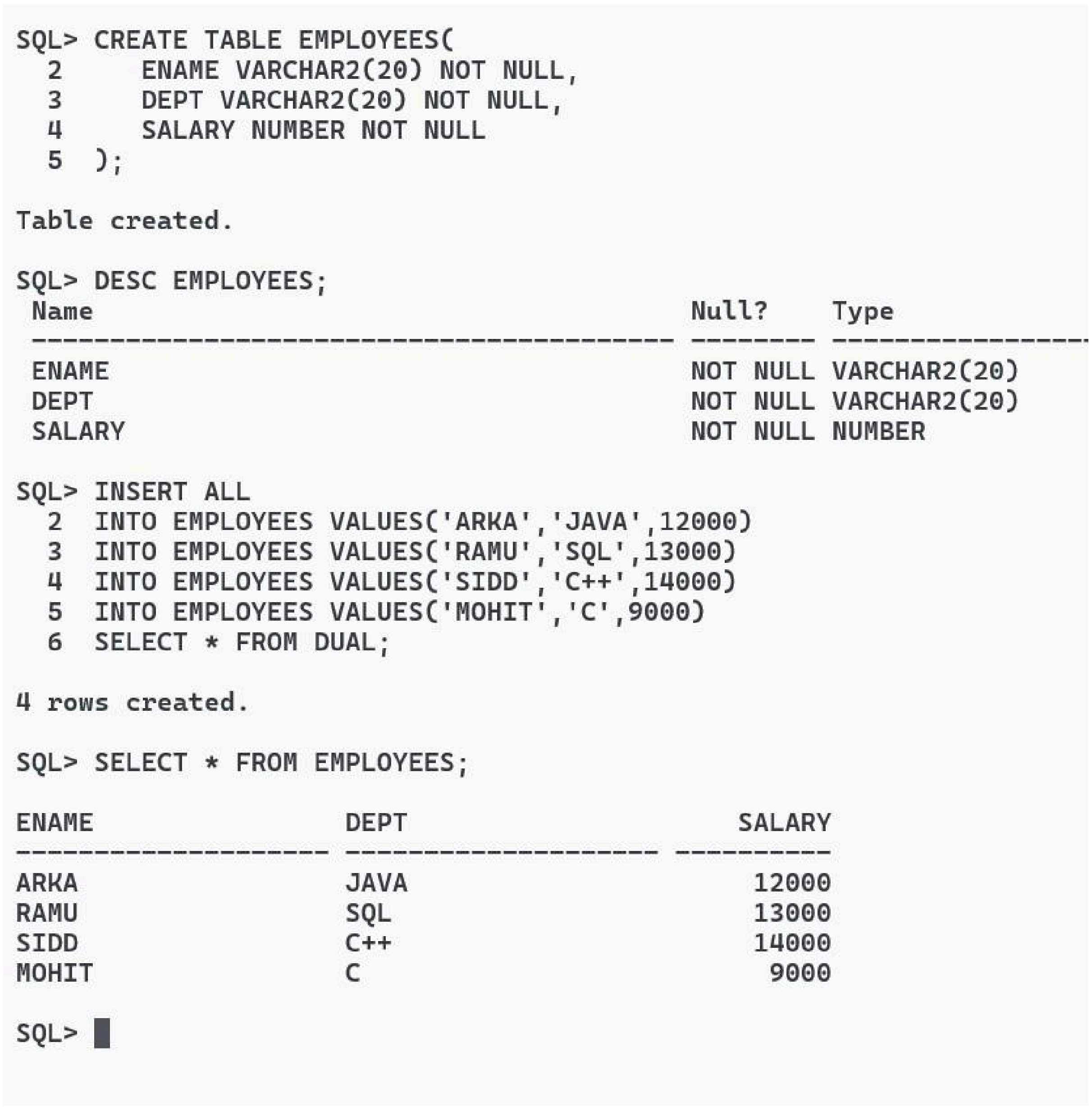
```
CREATE TABLE EMP(
        SAL_DIFF NUMBER
);
CREATE OR REPLACE PROCEDURE SALDIFF(HIGHEST NUMBER, LOWEST
NUMBER) AS
RESULT NUMBER;
BEGIN
        DBMS_OUTPUT.PUT_LINE('THE HIGHEST SALARY IS : ' || HIGHEST);
        DBMS_OUTPUT.PUT_LINE('THE LOWEST SALARY IS : ' || LOWEST);
        RESULT := HIGHEST - LOWEST;
        DBMS_OUTPUT.PUT_LINE('THE DIFFERENCE IS : ' || RESULT);
        INSERT INTO EMP VALUES(RESULT);
END;
/
```



```
SQL> CREATE TABLE EMP(
         SAL_DIFF NUMBER
     );

Table created.

SQL> DESC EMP;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SAL_DIFF                                           NUMBER

SQL> CREATE OR REPLACE PROCEDURE SALDIFF(HIGHEST NUMBER, LOWEST NUMBER) AS
     RESULT NUMBER;
     BEGIN
        DBMS_OUTPUT.PUT_LINE('THE HIGHEST SALARY IS : ' || HIGHEST);
        DBMS_OUTPUT.PUT_LINE('THE LOWEST SALARY IS : ' || LOWEST);
        RESULT := HIGHEST - LOWEST;
        DBMS_OUTPUT.PUT_LINE('THE DIFFERENCE IS : ' || RESULT);
        INSERT INTO EMP VALUES(RESULT);
     END;
     /

Procedure created.

SQL> EXEC SALDIFF(10000,500);
THE HIGHEST SALARY IS : 10000
THE LOWEST SALARY IS : 500
THE DIFFERENCE IS : 9500

PL/SQL procedure successfully completed.

SQL> SELECT * FROM EMP;

  SAL_DIFF
----------
      9500

SQL>
```

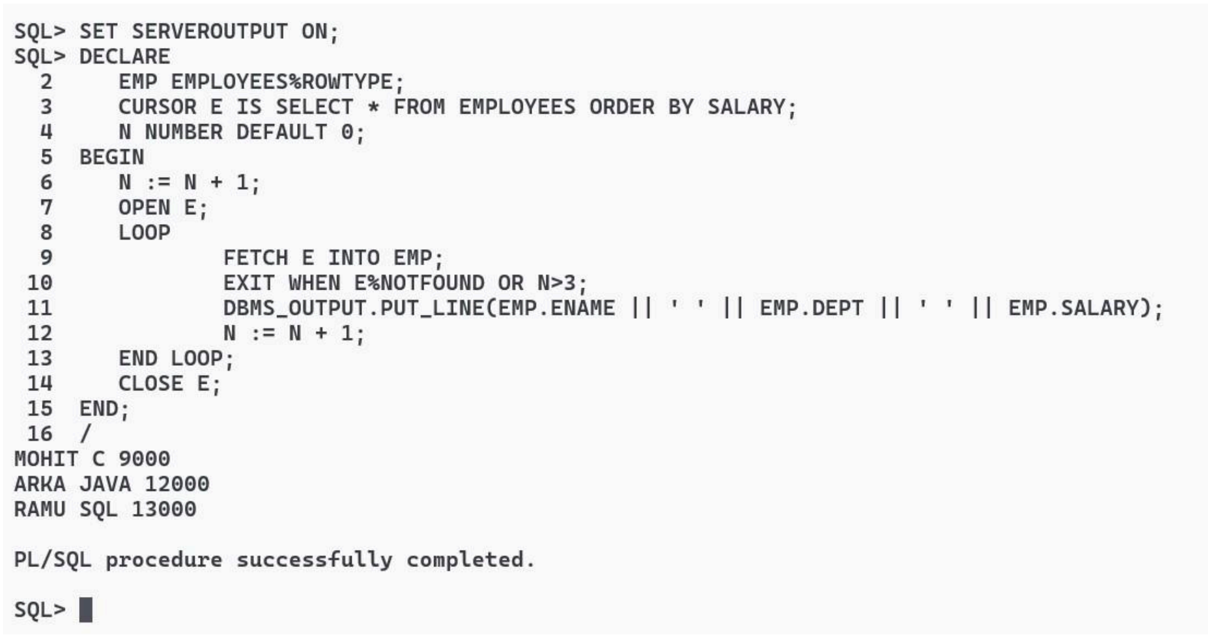
vi.Implement a PL/SQL block using cursor that will display the name, department and the salary of the first 3 employees getting lowest salary.
[Table: Employee (ename, dept, salary)]

```
CREATE TABLE EMPLOYEES(
        ENAME VARCHAR2(20) NOT NULL,
        DEPT VARCHAR2(20) NOT NULL,
        SALARY NUMBER NOT NULL
);
```



```
SQL> CREATE TABLE EMPLOYEES(
  2     ENAME VARCHAR2(20) NOT NULL,
  3     DEPT VARCHAR2(20) NOT NULL,
  4     SALARY NUMBER NOT NULL
  5  );

Table created.

SQL> DESC EMPLOYEES;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 ENAME                                     NOT NULL VARCHAR2(20)
 DEPT                                      NOT NULL VARCHAR2(20)
 SALARY                                    NOT NULL NUMBER

SQL> INSERT ALL
  2  INTO EMPLOYEES VALUES('ARKA','JAVA',12000)
  3  INTO EMPLOYEES VALUES('RAMU','SQL',13000)
  4  INTO EMPLOYEES VALUES('SIDD','C++',14000)
  5  INTO EMPLOYEES VALUES('MOHIT','C',9000)
  6  SELECT * FROM DUAL;

4 rows created.

SQL> SELECT * FROM EMPLOYEES;

ENAME                DEPT                     SALARY
-------------------- -------------------- ----------
ARKA                 JAVA                      12000
RAMU                 SQL                       13000
SIDD                 C++                       14000
MOHIT                C                          9000

SQL>
```

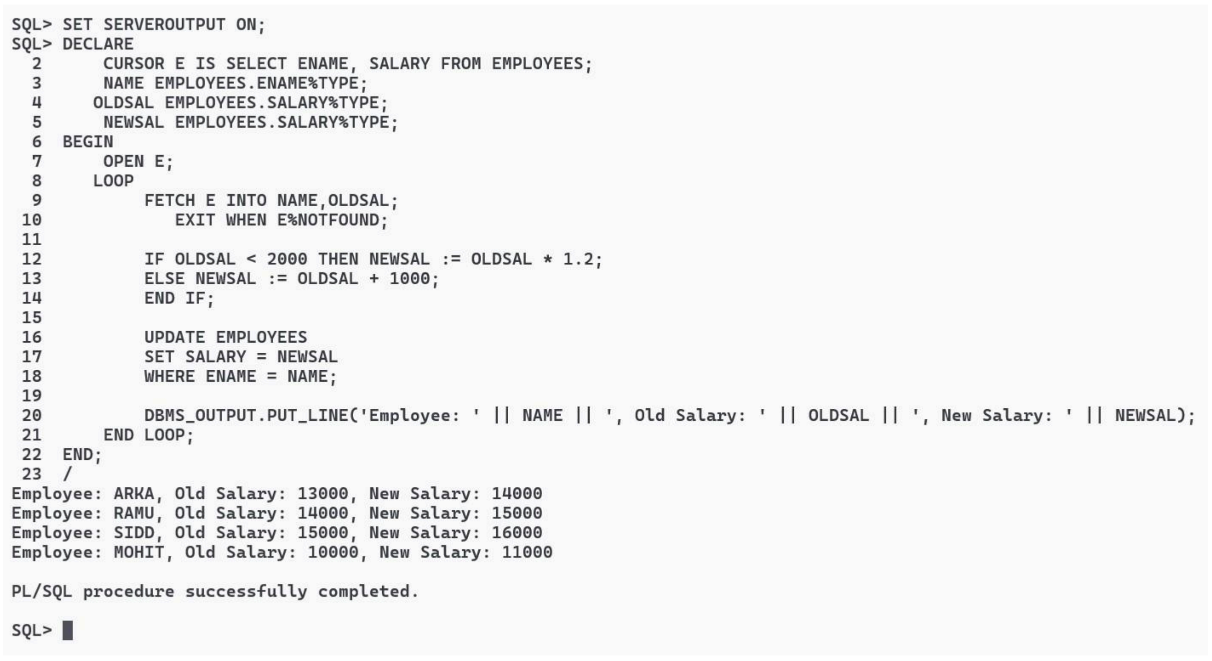
```
INSERT ALL
INTO EMPLOYEES VALUES('ARKA','JAVA',12000)
INTO EMPLOYEES VALUES('RAMU','SQL',13000)
INTO EMPLOYEES VALUES('SIDD','C++',14000)
INTO EMPLOYEES VALUES('MOHIT','C',9000)
SELECT * FROM DUAL;

SET SERVEROUTPUT ON;
DECLARE
        EMP EMPLOYEES%ROWTYPE;
        CURSOR E IS SELECT * FROM EMPLOYEES ORDER BY SALARY;
        N NUMBER DEFAULT 0;
BEGIN
        N := N + 1;
        OPEN E;
        LOOP
                FETCH E INTO EMP;
                EXIT WHEN E%NOTFOUND OR N>3;
                DBMS_OUTPUT.PUT_LINE(EMP.ENAME || ' ' || EMP.DEPT || ' ||
EMP.SALARY);
                N := N + 1;
        END LOOP;
        CLOSE E;
END;
/
```



```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
  2     EMP EMPLOYEES%ROWTYPE;
  3     CURSOR E IS SELECT * FROM EMPLOYEES ORDER BY SALARY;
  4     N NUMBER DEFAULT 0;
  5  BEGIN
  6     N := N + 1;
  7     OPEN E;
  8     LOOP
  9             FETCH E INTO EMP;
 10             EXIT WHEN E%NOTFOUND OR N>3;
 11             DBMS_OUTPUT.PUT_LINE(EMP.ENAME || ' ' || EMP.DEPT || ' ' || EMP.SALARY);
 12             N := N + 1;
 13     END LOOP;
 14     CLOSE E;
 15  END;
 16  /
MOHIT C 9000
ARKA JAVA 12000
RAMU SQL 13000

PL/SQL procedure successfully completed.

SQL>
```

vii.Implement a PL/SQL cursor that will update salary of all employees, such that, it allows an increment of 20% if the salary is less than 2000 otherwise increment of Rs.1000. It should print old and new salary for all employees.
[Table: Employee (ename, dept, salary)]

```
SET SERVEROUTPUT ON;
DECLARE
   CURSOR E IS SELECT ENAME, SALARY FROM EMPLOYEES;
   NAME EMPLOYEES.ENAME%TYPE;
         OLDSAL EMPLOYEES.SALARY%TYPE;
   NEWSAL EMPLOYEES.SALARY%TYPE;
BEGIN
   OPEN E;
         LOOP
      FETCH E INTO NAME,OLDSAL;
                  EXIT WHEN E%NOTFOUND;

      IF OLDSAL < 2000 THEN NEWSAL := OLDSAL * 1.2;
      ELSE NEWSAL := OLDSAL + 1000;
      END IF;

      UPDATE EMPLOYEES
      SET SALARY = NEWSAL
      WHERE ENAME = NAME;

      DBMS_OUTPUT.PUT_LINE('Employee: ' || NAME || ', Old Salary: ' || OLDSAL || ',
New Salary: ' || NEWSAL);
   END LOOP;
END;
/
```



```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
         CURSOR E IS SELECT ENAME, SALARY FROM EMPLOYEES;
         NAME EMPLOYEES.ENAME%TYPE;
        OLDSAL EMPLOYEES.SALARY%TYPE;
         NEWSAL EMPLOYEES.SALARY%TYPE;
     BEGIN
         OPEN E;
        LOOP
             FETCH E INTO NAME,OLDSAL;
                EXIT WHEN E%NOTFOUND;

             IF OLDSAL < 2000 THEN NEWSAL := OLDSAL * 1.2;
             ELSE NEWSAL := OLDSAL + 1000;
             END IF;

             UPDATE EMPLOYEES
             SET SALARY = NEWSAL
             WHERE ENAME = NAME;

             DBMS_OUTPUT.PUT_LINE('Employee: ' || NAME || ', Old Salary: ' || OLDSAL || ', New Salary: ' || NEWSAL);
         END LOOP;
     END;
     /
Employee: ARKA, Old Salary: 13000, New Salary: 14000
Employee: RAMU, Old Salary: 14000, New Salary: 15000
Employee: SIDD, Old Salary: 15000, New Salary: 16000
Employee: MOHIT, Old Salary: 10000, New Salary: 11000

PL/SQL procedure successfully completed.

SQL>
```