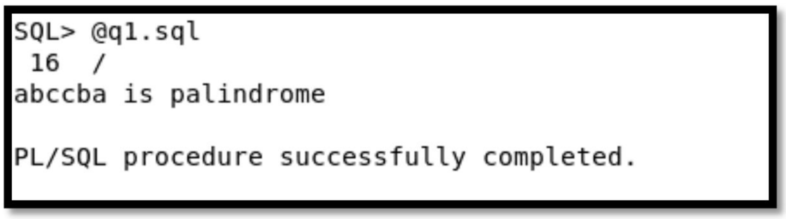
Lab Cycle 2

1) Write a PL/SQL code to accept the text and reverse the given text. Check the text is palindrome or not.

PROGRAM CODE

```
DECLARE
 s VARCHAR2(10) := 'abccba';
 l VARCHAR2(20);
 t VARCHAR2(10);
BEGIN
 FOR i IN REVERSE 1..Length(s) LOOP
 l := Substr(s, i, 1);
 t := t||''||l;
 END LOOP;
 IF t = s THEN
 dbms_output.Put_line(t ||''||' is palindrome');
 ELSE
 dbms_output.Put_line(t||''||' is not palindrome');
 END IF;
END;
```

OUTPUT



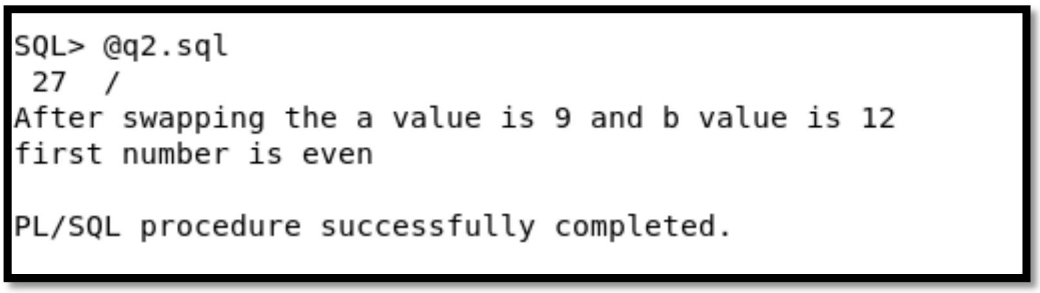
```
SQL> @q1.sql
 16  /
abccba is palindrome

PL/SQL procedure successfully completed.
```

2) Write a program to read two numbers; If the first no > 2nd no, then swap the numbers; if the first number is an odd number, then find its cube; if first no < 2nd no then raise it to its power; if both the numbers are equal, then find its sqrt.

PROGRAM CODE

```
DECLARE
 a INTEGER:=12;
 b INTEGER:=9;
 temp INTEGER:=0;
 c INTEGER;
 cube INTEGER;
BEGIN
 IF a > b THEN
 temp:=a;
 a:=b;
 b:=temp;
 DBMS_OUTPUT.PUT_LINE('After swapping the a value is '||a ||' and b value is '||b);
 IF MOD(b,2) !=0 THEN
 cube:=a * a * a;
 DBMS_OUTPUT.PUT_LINE('Cube is :'||cube);
 ELSE
 DBMS_OUTPUT.PUT_LINE('first number is even');
 END IF;
 ELSIF a < b THEN
 c:=a **b;
 DBMS_OUTPUT.PUT_LINE('Power is :'||c);
 ELSIF a=b THEN
 DBMS_OUTPUT.PUT_LINE('Square root of a is :'||(SQRT(a)));
 DBMS_OUTPUT.PUT_LINE('Square root of b is :'||(SQRT(b)));
 END IF;
END;
```

OUTPUT



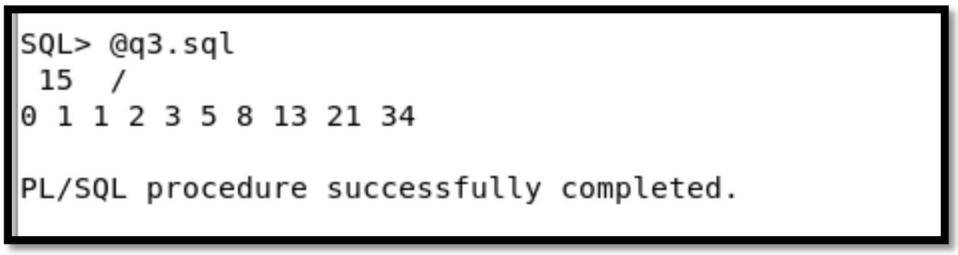
```
SQL> @q2.sql
 27  /
After swapping the a value is 9 and b value is 12
first number is even

PL/SQL procedure successfully completed.
```

3)Write a program to generate first 10 terms of the Fibonacci series

PROGRAM CODE

```
DECLARE
 a NUMBER:=0;
 b NUMBER:=1;
 c NUMBER;
BEGIN
 DBMS_OUTPUT.PUT(a||''||B||'');
 FOR I IN 3..10 LOOP
 c:=a+b;
 DBMS_OUTPUT.PUT(c||'');
 a:=b;
 b:=c;
 END LOOP;
DBMS_OUTPUT.PUT_LINE('');
END;
```

OUTPUT



```
SQL> @q3.sql
 15  /
0 1 1 2 3 5 8 13 21 34

PL/SQL procedure successfully completed.
```

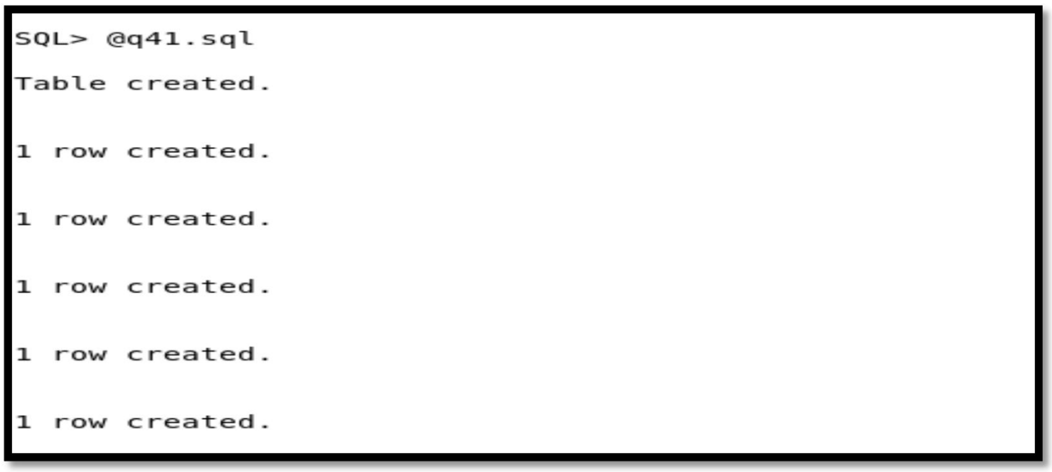
4) Write a PL/SQL program to find the salary of an employee in the EMP table (Get the empno from the user). Find the employee drawing minimum salary. If the minimum salary is less than 7500, then give an increment of 15%. Also create an emp %rowtype record. Accept the empno from the user, and display all the information about the employee.

PROGRAM CODE

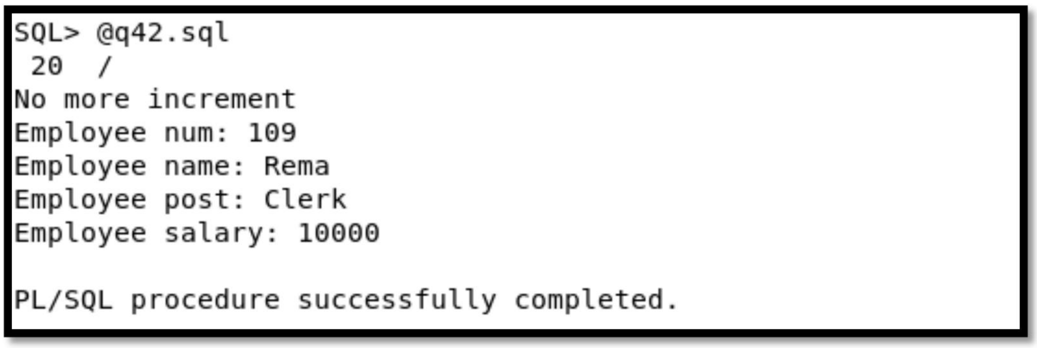
```
create table employee(emp_no int,emp_name varchar(20),emp_post

varchar(20),emp_salary decimal(10,2));

insert into employee values(103,'Rahul','MD',25000);

insert into employee values(105,'Ravi','HR',20000);

insert into employee values(107,'Rani','Accountant',15000);

insert into employee values(109,'Rema','Clerk',10000);

insert into employee values(201,'Ramu','Peon',5000);
```

```
Declare
 emno employee.emp_no%type;
 salary employee.emp_salary%type;
 emp_rec employee%rowtype;
begin
 emno:=109;
 select emp_salary into salary from employee where emp_no=emno;
 if salary<7500 then
 update employee set emp_salary=emp_salary * 15/100 where
emp_no=emno;
 else
 dbms_output.put_line('No more increment');
 end if;
 select * into emp_rec from employee where emp_no=emno;
 dbms_output.put_line('Employee num: '||emp_rec.emp_no);
 dbms_output.put_line('Employee name: '||emp_rec.emp_name);
 dbms_output.put_line('Employee post: '||emp_rec.emp_post);
 dbms_output.put_line('Employee salary: '||emp_rec.emp_salary);
end;
```

output



```
SQL> @q41.sql
Table created.

1 row created.

1 row created.

1 row created.

1 row created.

1 row created.
```



```
SQL> @q42.sql
 20  /
No more increment
Employee num: 109
Employee name: Rema
Employee post: Clerk
Employee salary: 10000

PL/SQL procedure successfully completed.
```

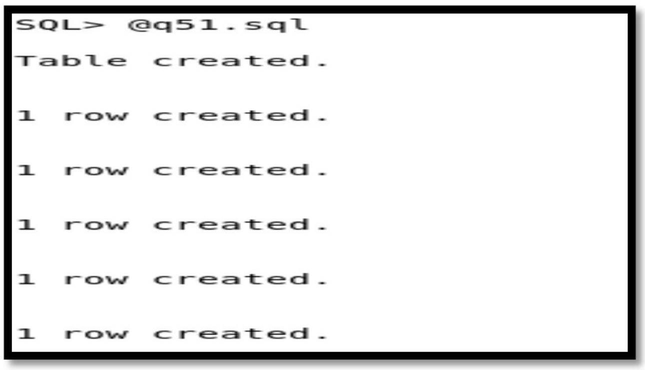
5) Write a PL/SQL function to find the total strength of students present in different classes of the MCA department using the table Class(ClassId, ClassName, Strength);

PROGRAM CODE

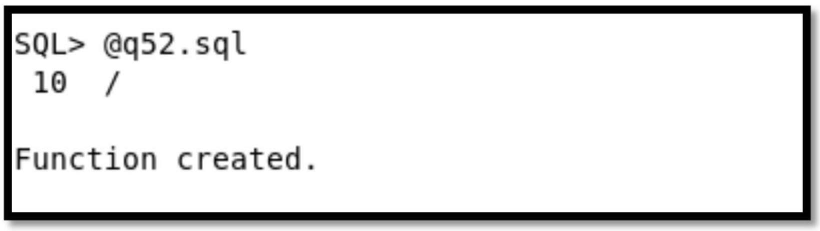
```
create table class(cls_id int,cls_name varchar(20),cls_std int);

insert into class values(201,'mca',60);

insert into class values(202,'mca',60);

insert into class values(203,'bca',57);

insert into class values(204,'bca',59);

insert into class values(205,'msc',62);


CREATE OR REPLACE FUNCTION total_std
```

```
RETURN NUMBER IS
total NUMBER(5):=0;
BEGIN
SELECT sum(cls_std) INTO total FROM class WHERE cls_name='mca';
RETURN total;
END;

DECLARE
c NUMBER(5);
BEGIN
c:=total_std();
DBMS_OUTPUT.PUT_LINE('Total students in MCA department is:'||c);
END;
```

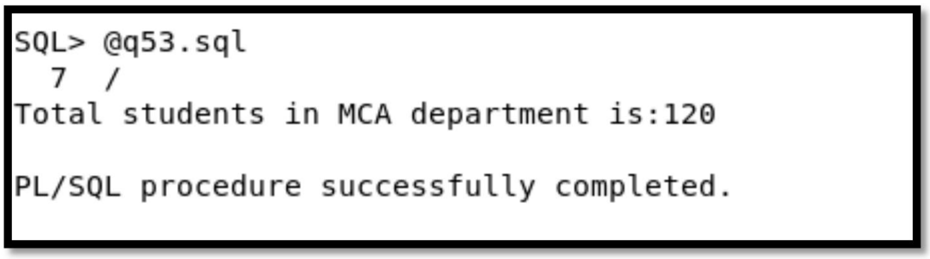
Output



```
SQL> @q51.sql
Table created.

1 row created.

1 row created.

1 row created.

1 row created.

1 row created.
```



```
SQL> @q52.sql
 10  /

Function created.
```



```
SQL> @q53.sql
  7  /
Total students in MCA department is:120

PL/SQL procedure successfully completed.
```

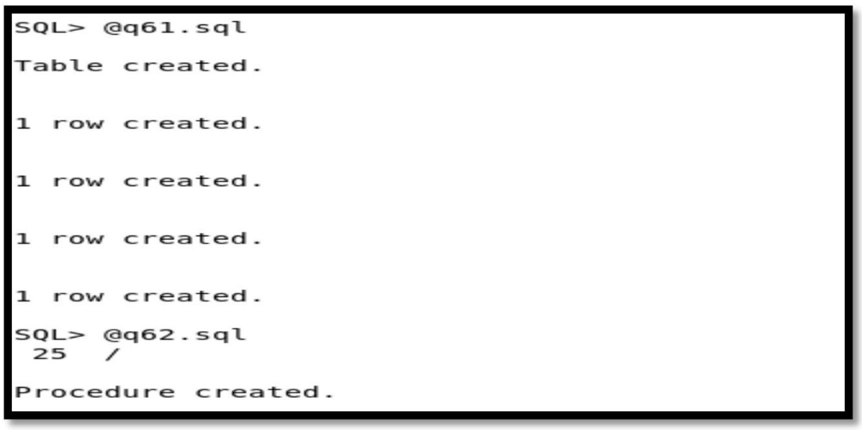
6) Write a PL/SQL **procedure** to increase the salary for the specified employee. Using empno in the employee table based on the following criteria: increase the salary by 5% for clerks, 7% for salesman, 10% for analyst and 20 % for manager. Activate using PL/SQL block.

PROGRAM CODE

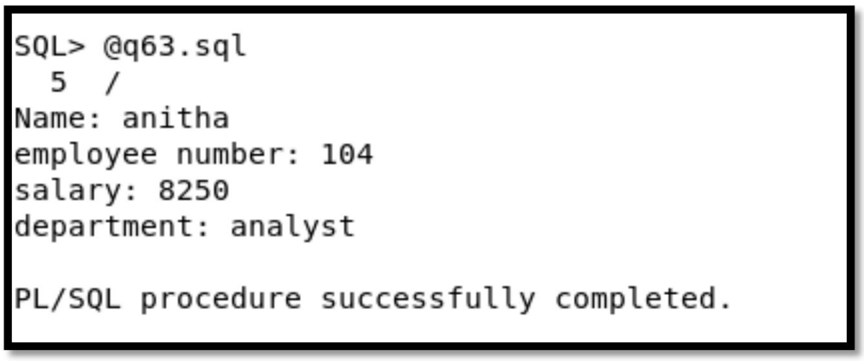
```
create table emp(emp_no int,emp_name varchar(20),salary int,emp_dpt
varchar(20));
insert into emp values(101,'arun',50000,'salesman');
insert into emp values(102,'appu',6500,'manager');
insert into emp values(103,'ammu',7500,'clerk');
insert into emp values(104,'anitha',7500,'analyst');


CREATE OR REPLACE PROCEDURE increSalary
IS
emp1 emp%rowtype;
sal emp.salary%type;
dpt emp.emp_dpt%type;
BEGIN
SELECT salary,emp_dpt INTO sal,dpt FROM emp WHERE emp_no = 104;
  IF dpt ='clerk' THEN
    UPDATE emp SET salary = salary+salary* 5/100 ;
  ELSIF dpt = 'salesman' THEN
    UPDATE emp SET salary = salary+salary* 7/100  ;
  ELSIF dpt = 'analyst' THEN
    UPDATE emp SET salary = salary+salary* 10/100  ;
 ELSIF dpt = 'manager' THEN
    UPDATE emp SET salary = salary+salary* 20/100  ;
 ELSE
    DBMS_OUTPUT.PUT_LINE ('NO INCREMENT');
  END IF;
  SELECT * into emp1 FROM emp WHERE emp_no = 104;
```

```
   DBMS_OUTPUT.PUT_LINE ('Name: '||emp1.emp_name);
   DBMS_OUTPUT.PUT_LINE ('employee number: '||emp1.emp_no);
   DBMS_OUTPUT.PUT_LINE ('salary: '|| emp1.salary);
   DBMS_OUTPUT.PUT_LINE ('department: '|| emp1.emp_dpt);
END;

DECLARE
BEGIN
  increSalary();
END;
```

Output



```
SQL> @q61.sql
Table created.

1 row created.

1 row created.

1 row created.

1 row created.
SQL> @q62.sql
 25  /
Procedure created.
```



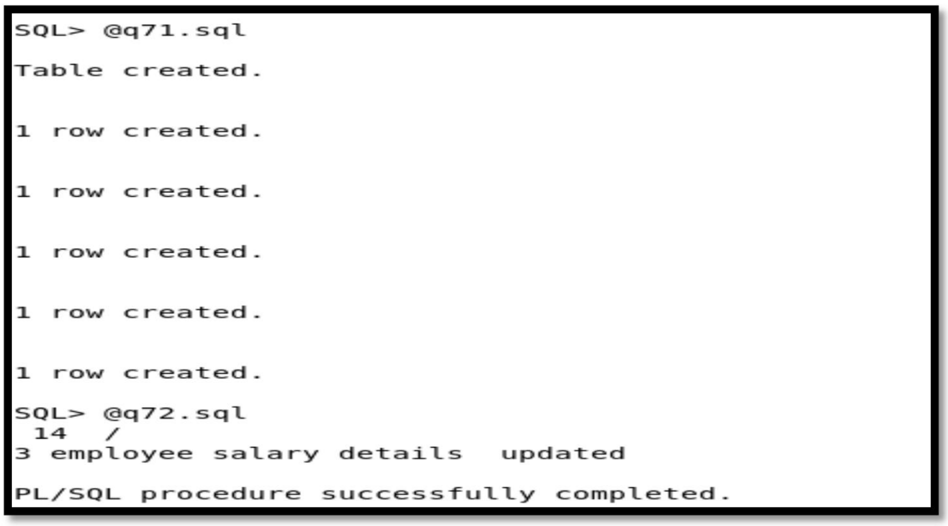
```
SQL> @q63.sql
  5  /
Name: anitha
employee number: 104
salary: 8250
department: analyst

PL/SQL procedure successfully completed.
```

7) Create a **cursor** to modify the salary of ‘president’ belonging to all departments by 50%

PROGRAM CODE

```
create table emp(emp_no int,emp_name varchar(20),salary int,emp_dpt varchar(20),dsgt varchar(20));
insert into emp values(101,'arun',50000,'sales','president');
insert into emp values(102,'appu',6500,'Ac','president');
insert into emp values(103,'ammu',7500,'HR','manager');
insert into emp values(104,'anitha',7500,'Ac','snr grade');
insert into emp values(105,'anitha.c',7500,'HR','president');

DECLARE
   total_rows number(2);
   emp1 EMP%rowtype;
BEGIN

 UPDATE emp SET salary = salary + salary * 50/100 where dsgt = 'president';
 IF sql%notfound THEN
    dbms_output.put_line('no employee salary updated');
 ELSIF sql%found THEN
   total_rows := sql%rowcount;
   dbms_output.put_line( total_rows || ' employee salary details  updated');
 end if;
end;
```

output



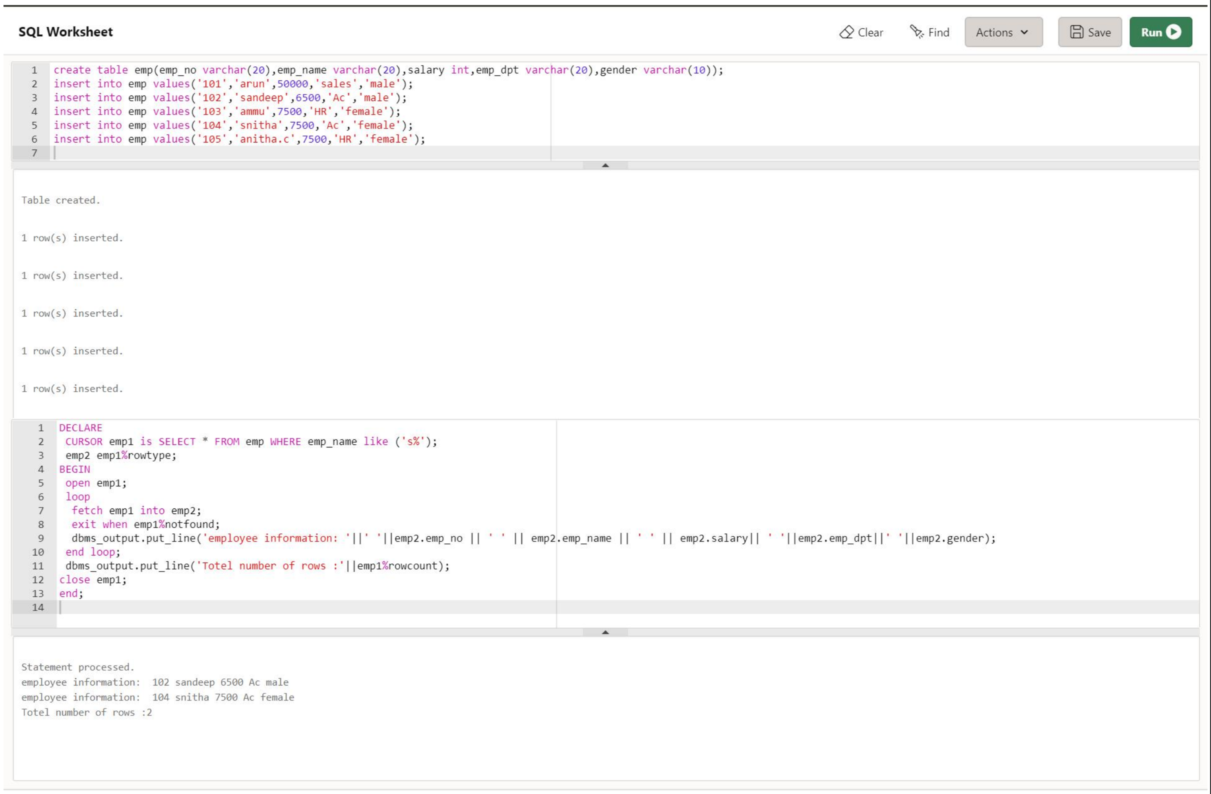
```
SQL> @q71.sql
Table created.


1 row created.


1 row created.


1 row created.


1 row created.


1 row created.

SQL> @q72.sql
 14  /
3 employee salary details  updated

PL/SQL procedure successfully completed.
```

8) Write a **cursor** to display list of Male and Female employees whose name starts with S.

PROGRAM CODE

```
create table emp(emp_no varchar(20),emp_name varchar(20),salary int,emp_dpt
varchar(20),gender varchar(10));
insert into emp values('101','arun',50000,'sales','male');
insert into emp values('102','sandeep',6500,'Ac','male');
insert into emp values('103','ammu',7500,'HR','female');
insert into emp values('104','snitha',7500,'Ac','female');
insert into emp values('105','anitha.c',7500,'HR','female');

DECLARE
 CURSOR emp1 is SELECT * FROM emp WHERE emp_name like ('s%');
 emp2 emp1%rowtype;
BEGIN
 open emp1;
 loop
  fetch emp1 into emp2;
  exit when emp1%notfound;
  dbms_output.put_line('employee information: '||' '||emp2.emp_no || ' ' || emp2.emp_name || ' ' || emp2.salary|| ' '||emp2.emp_dpt||' '||emp2.gender);
 end loop;
 dbms_output.put_line('Totel number of rows :'||emp1%rowcount);
close emp1;
end;
```

output



SQL Worksheet

```
create table emp(emp_no varchar(20),emp_name varchar(20),salary int,emp_dpt varchar(20),gender varchar(10));
insert into emp values('101','arun',50000,'sales','male');
insert into emp values('102','sandeep',6500,'Ac','male');
insert into emp values('103','ammu',7500,'HR','female');
insert into emp values('104','snitha',7500,'Ac','female');
insert into emp values('105','anitha.c',7500,'HR','female');
```

```
Table created.


1 row(s) inserted.


1 row(s) inserted.


1 row(s) inserted.


1 row(s) inserted.


1 row(s) inserted.
```

```
DECLARE
 CURSOR emp1 is SELECT * FROM emp WHERE emp_name like ('s%');
 emp2 emp1%rowtype;
BEGIN
 open emp1;
 loop
  fetch emp1 into emp2;
  exit when emp1%notfound;
  dbms_output.put_line('employee information: '||' '||emp2.emp_no || ' ' || emp2.emp_name || ' ' || emp2.salary|| ' '||emp2.emp_dpt||' '||emp2.gender);
 end loop;
 dbms_output.put_line('Totel number of rows :'||emp1%rowcount);
close emp1;
end;
```

```
Statement processed.
employee information:  102 sandeep 6500 Ac male
employee information:  104 snitha 7500 Ac female
Totel number of rows :2
```

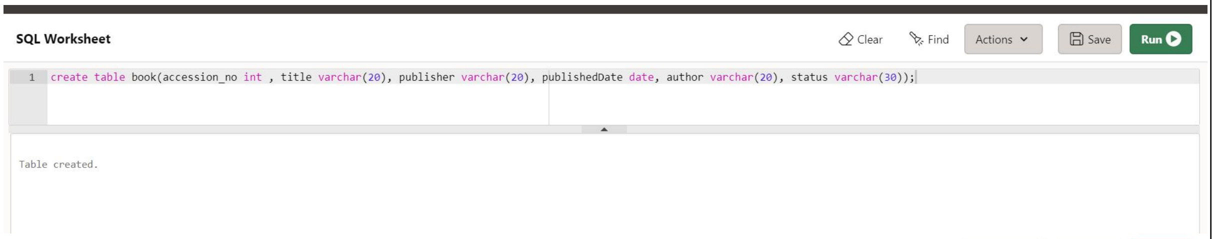
9) Create the following tables for Library Information System: Book : (accession-no, title, publisher, publishedDate, author, status). Status could be issued, present in the library, sent for binding, and cannot be issued. Write a **trigger** which sets the status of a book to "cannot be issued", if it is published 15 years back.

PROGRAM CODE

```
create table book(accession_no int , title varchar(20), publisher varchar(20), publishedDate date, author varchar(20), status varchar(30));

CREATE OR REPLACE TRIGGER search1
```

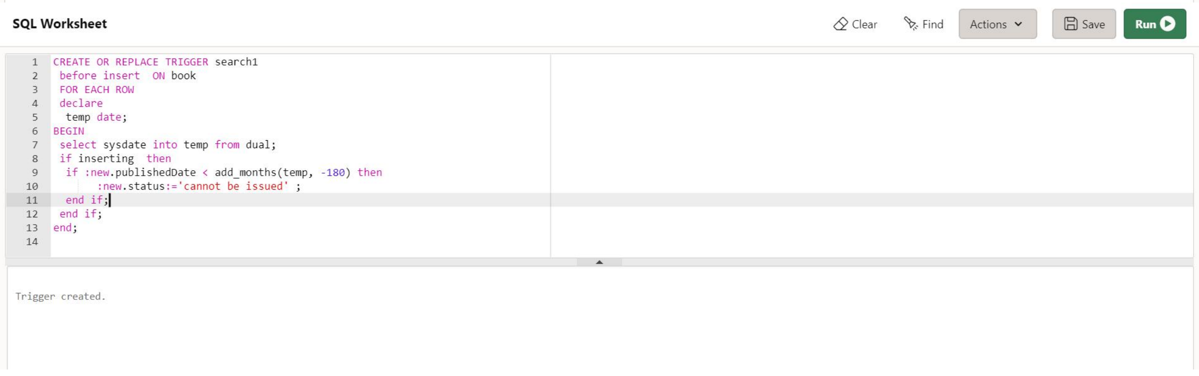
```
 before insert  ON book
 FOR EACH ROW
 declare
  temp date;
BEGIN
 select sysdate into temp from dual;
 if inserting  then
  if :new.publishedDate < add_months(temp, -180) then
       :new.status:='cannot be issued' ;
  end if;
 end if;
end;

insert into book values( 2511,'abcd','cp','21-jan-2009','john','issued');
insert into book values( 2512,'efhj','cp','30-mar-2010','malik','present in the library');
insert into book values( 2513,'hijk','cp','21-june-2011','sonu','sent for binding');
insert into book values( 2514,'lmno','cp','01-sep-2016','johns','issued');
insert into book values( 2515,'pqrst','cp','21-jan-2004','joppy','can not be issued');
insert into book values( 2516,'uvwx','cp','21-jan-2006','juosoop',' issued');

SELECT * FROM book;
```

Output



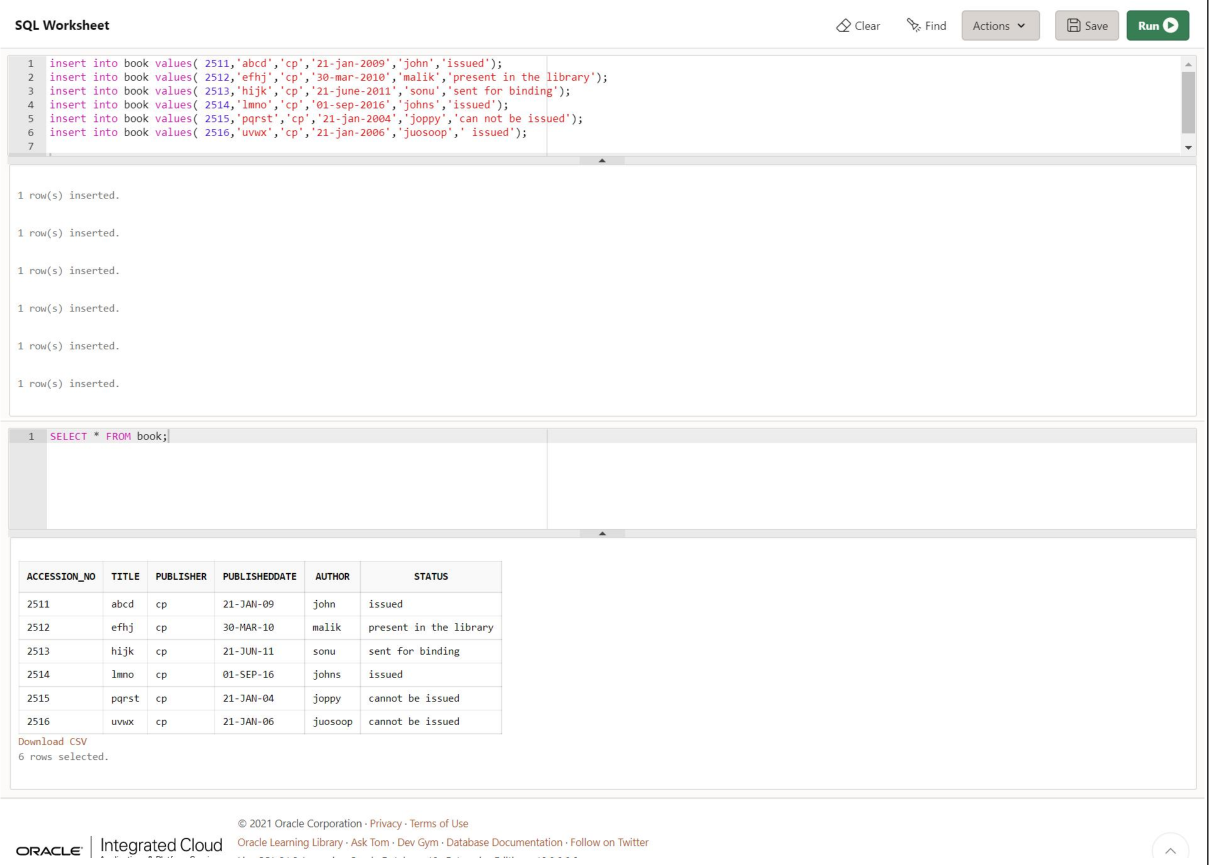
```
create table book(accession_no int , title varchar(20), publisher varchar(20), publishedDate date, author varchar(20), status varchar(30));
```

```
Table created.
```



```
CREATE OR REPLACE TRIGGER search1
 before insert  ON book
 FOR EACH ROW
 declare
  temp date;
BEGIN
 select sysdate into temp from dual;
 if inserting  then
  if :new.publishedDate < add_months(temp, -180) then
       :new.status:='cannot be issued' ;
  end if;
 end if;
end;
```

```
Trigger created.
```



```
insert into book values( 2511,'abcd','cp','21-jan-2009','john','issued');
insert into book values( 2512,'efhj','cp','30-mar-2010','malik','present in the library');
insert into book values( 2513,'hijk','cp','21-june-2011','sonu','sent for binding');
insert into book values( 2514,'lmno','cp','01-sep-2016','johns','issued');
insert into book values( 2515,'pqrst','cp','21-jan-2004','joppy','can not be issued');
insert into book values( 2516,'uvwx','cp','21-jan-2006','juosoop',' issued');
```

```
1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.
```

```
SELECT * FROM book;
```

ACCESSION_NO	TITLE	PUBLISHER	PUBLISHEDDATE	AUTHOR	STATUS
2511	abcd	cp	21-JAN-09	john	issued
2512	efhj	cp	30-MAR-10	malik	present in the library
2513	hijk	cp	21-JUN-11	sonu	sent for binding
2514	lmno	cp	01-SEP-16	johns	issued
2515	pqrst	cp	21-JAN-04	joppy	cannot be issued
2516	uvwx	cp	21-JAN-06	juosoop	cannot be issued

```
Download CSV
6 rows selected.
```

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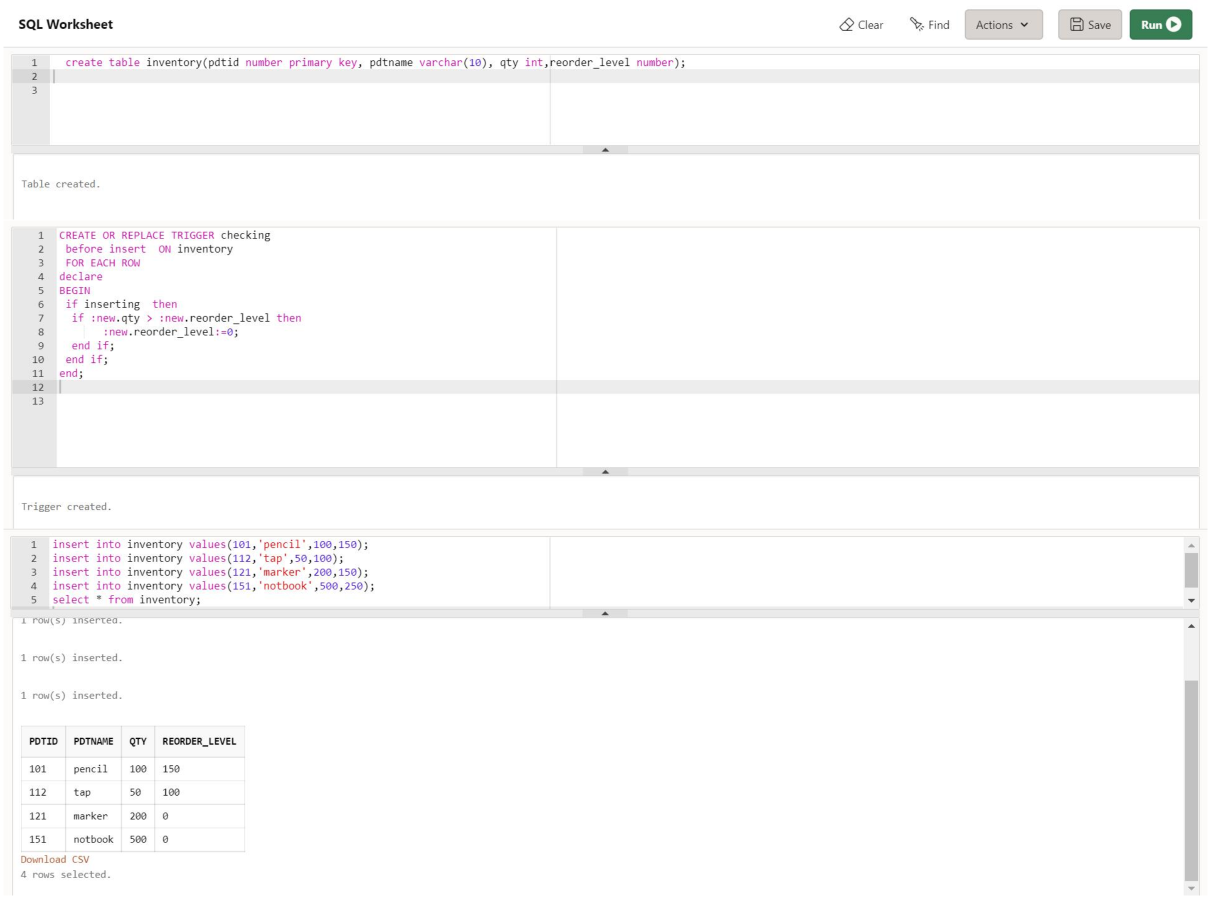
10) Create a table Inventory with fields pdtid, pdtname, qty and reorder_level. Create a **trigger** control on the table for checking whether qty<reorder_level while inserting values.

PROGRAM CODE

```
create table inventory(pdtid number primary key, pdtname varchar(10), qty
int,reorder_level number);

CREATE OR REPLACE TRIGGER checking

 before insert  ON inventory

 FOR EACH ROW

declare

BEGIN

 if inserting  then

  if :new.qty > :new.reorder_level then

      :new.reorder_level:=0;

  end if;
 end if;
end;
insert into inventory values(101,'pencil',100,150);
insert into inventory values(112,'tap',50,100);
insert into inventory values(121,'marker',200,150);
insert into inventory values(151,'notbook',500,250);
select * from inventory;
```

OUTPUT



```
 create table inventory(pdtid number primary key, pdtname varchar(10), qty int,reorder_level number);
```

```
Table created.
```

```
CREATE OR REPLACE TRIGGER checking
 before insert  ON inventory
 FOR EACH ROW
declare
BEGIN
 if inserting  then
  if :new.qty > :new.reorder_level then
       :new.reorder_level:=0;
  end if;
 end if;
end;
```

```
Trigger created.
```

```
insert into inventory values(101,'pencil',100,150);
insert into inventory values(112,'tap',50,100);
insert into inventory values(121,'marker',200,150);
insert into inventory values(151,'notbook',500,250);
select * from inventory;
```

```
1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.
```

PDTID	PDTNAME	QTY	REORDER_LEVEL
101	pencil	100	150
112	tap	50	100
121	marker	200	0
151	notbook	500	0

Download CSV
4 rows selected.