**TY B.Tech. (CSE) – II [ 2022-23 ]**
**5CS372 : Advanced Database System Lab.**
**Assignment No. 1**

**PRN: 2020BTECS00033**
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**Batch: T6**

## I. PL / SQL Review :

a) Create a table called test_table with 2 columns RecordNumber (type : Number(3)) and CurrentDate (type : Date)). Write PL/SQL block which will insert 50 records into test_table. Insert the current date value into the table.

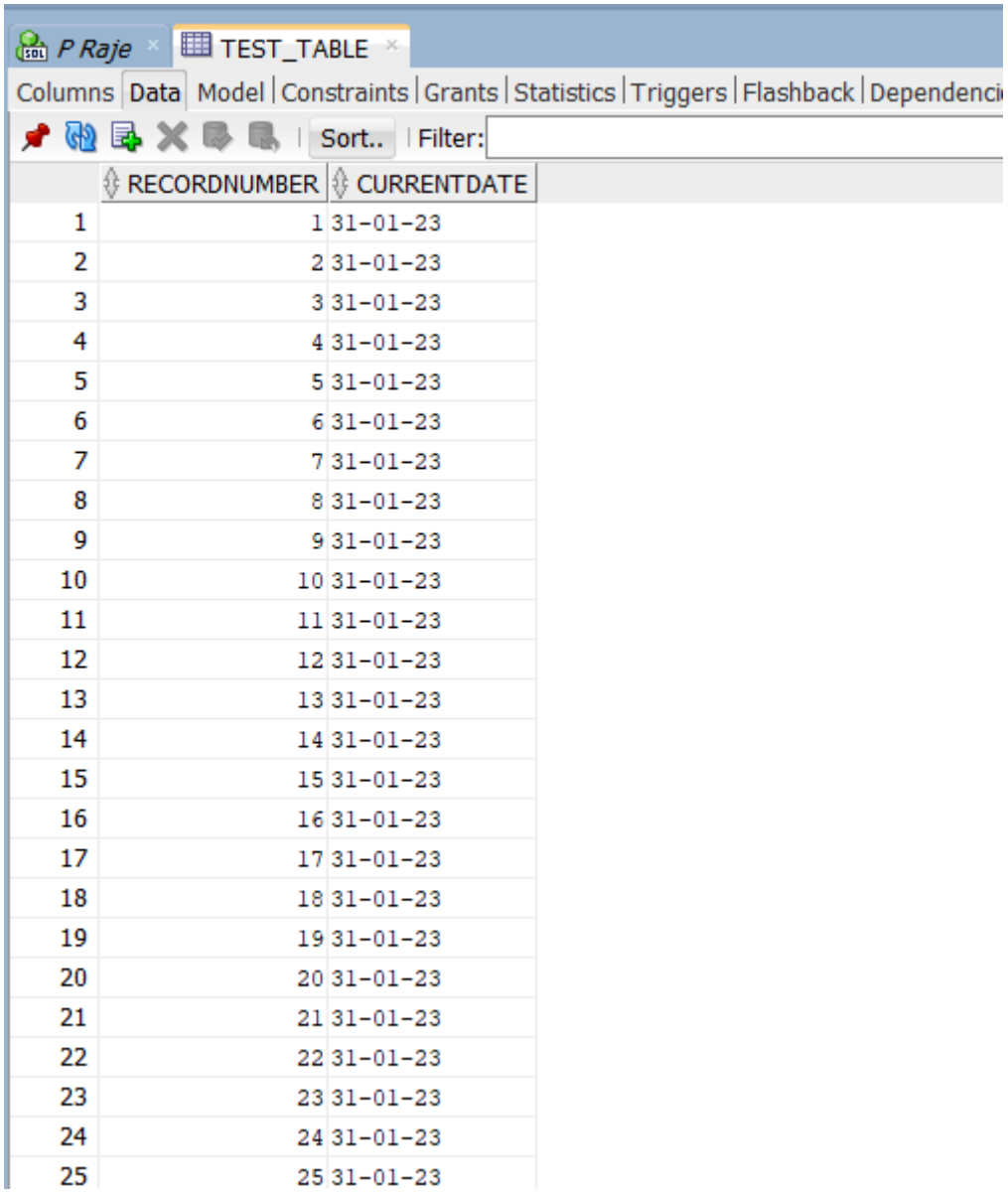
```
create table test_table(
        RecordNumber number(3),
        CurrentDate date
);

Declare
i number(3);
begin
for i in 1..50
LOOP
insert into test_table values(i,sysdate);
END LOOP;
END;
```

Script Output x

Task completed in 0.417 seconds

```
Table TEST_TABLE created.


PL/SQL procedure successfully completed.
```

Output:



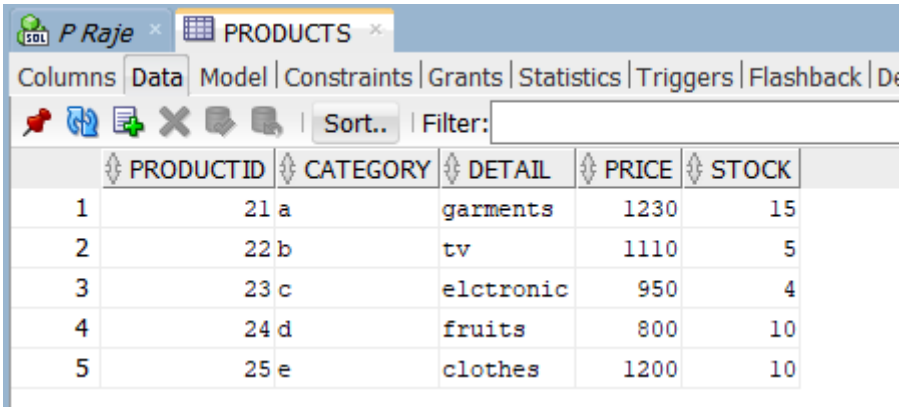

| | RECORDNUMBER | CURRENTDATE |
|---|---|---|
| 1 | 1 | 31-01-23 |
| 2 | 2 | 31-01-23 |
| 3 | 3 | 31-01-23 |
| 4 | 4 | 31-01-23 |
| 5 | 5 | 31-01-23 |
| 6 | 6 | 31-01-23 |
| 7 | 7 | 31-01-23 |
| 8 | 8 | 31-01-23 |
| 9 | 9 | 31-01-23 |
| 10 | 10 | 31-01-23 |
| 11 | 11 | 31-01-23 |
| 12 | 12 | 31-01-23 |
| 13 | 13 | 31-01-23 |
| 14 | 14 | 31-01-23 |
| 15 | 15 | 31-01-23 |
| 16 | 16 | 31-01-23 |
| 17 | 17 | 31-01-23 |
| 18 | 18 | 31-01-23 |
| 19 | 19 | 31-01-23 |
| 20 | 20 | 31-01-23 |
| 21 | 21 | 31-01-23 |
| 22 | 22 | 31-01-23 |
| 23 | 23 | 31-01-23 |
| 24 | 24 | 31-01-23 |
| 25 | 25 | 31-01-23 |

| | | |
|---|---|---|
| 26 | 26 | 31-01-23 |
| 27 | 27 | 31-01-23 |
| 28 | 28 | 31-01-23 |
| 29 | 29 | 31-01-23 |
| 30 | 30 | 31-01-23 |
| 31 | 31 | 31-01-23 |
| 32 | 32 | 31-01-23 |
| 33 | 33 | 31-01-23 |
| 34 | 34 | 31-01-23 |
| 35 | 35 | 31-01-23 |
| 36 | 36 | 31-01-23 |
| 37 | 37 | 31-01-23 |
| 38 | 38 | 31-01-23 |
| 39 | 39 | 31-01-23 |
| 40 | 40 | 31-01-23 |
| 41 | 41 | 31-01-23 |
| 42 | 42 | 31-01-23 |
| 43 | 43 | 31-01-23 |
| 44 | 44 | 31-01-23 |
| 45 | 45 | 31-01-23 |
| 46 | 46 | 31-01-23 |
| 47 | 47 | 31-01-23 |
| 48 | 48 | 31-01-23 |
| 49 | 49 | 31-01-23 |
| 50 | 50 | 31-01-23 |

b) Create a products table products(ProductID number(4),category char(3),detail varchar2(30),price number(10,2),stock number(5)). Insert the sample data.
Write PL/SQL procedure with two arguments X & Y which will increase price by X% for all products in category Y. X and Y will be given by user.

```
Create table products(
    ProductID number(4) primary key,
    category char(3),
    detail varchar2(30),
    price number(10,2),
    stock number(5)
);

insert into products values(21,'a','garments',1230,15);
insert into products values(22,'b','tv',1110,5);
insert into products values(23,'c','elctronic',950,4);
insert into products values(24,'d','fruits',800,10);
insert into products values(25,'e','clothes',1200,10);
```

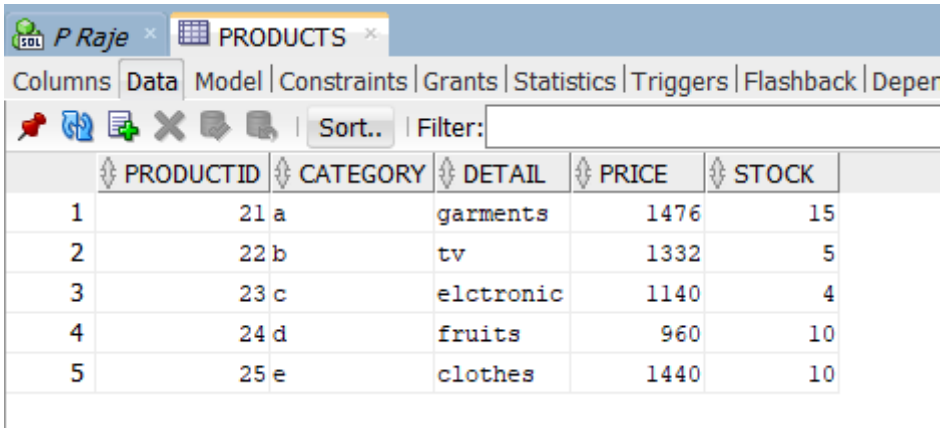
Table before Changes:




| | PRODUCTID | CATEGORY | DETAIL | PRICE | STOCK |
|---|---|---|---|---|---|
| 1 | 21 | a | garments | 1230 | 15 |
| 2 | 22 | b | tv | 1110 | 5 |
| 3 | 23 | c | elctronic | 950 | 4 |
| 4 | 24 | d | fruits | 800 | 10 |
| 5 | 25 | e | clothes | 1200 | 10 |

```
set serveroutput on;

CREATE OR REPLACE procedure increase_price(x in number,y in char)
as
begin
   update products set
   price=price+price*(x/100) where category=y;
end;

execute increase_price(20,'a');
execute increase_price(20,'b');
execute increase_price(20,'c');
execute increase_price(20,'d');
execute increase_price(20,'e');
```

Table After Changes:




| | PRODUCTID | CATEGORY | DETAIL | PRICE | STOCK |
|---|---|---|---|---|---|
| 1 | 21 | a | garments | 1476 | 15 |
| 2 | 22 | b | tv | 1332 | 5 |
| 3 | 23 | c | elctronic | 1140 | 4 |
| 4 | 24 | d | fruits | 960 | 10 |
| 5 | 25 | e | clothes | 1440 | 10 |

## II. Object Relational Databases:

a) Create Object Table containing field “name” of size 50 characters and member function “countNoOfWords” which returns the no. of words in the “name” field.
Demonstrate the working by entering different data.

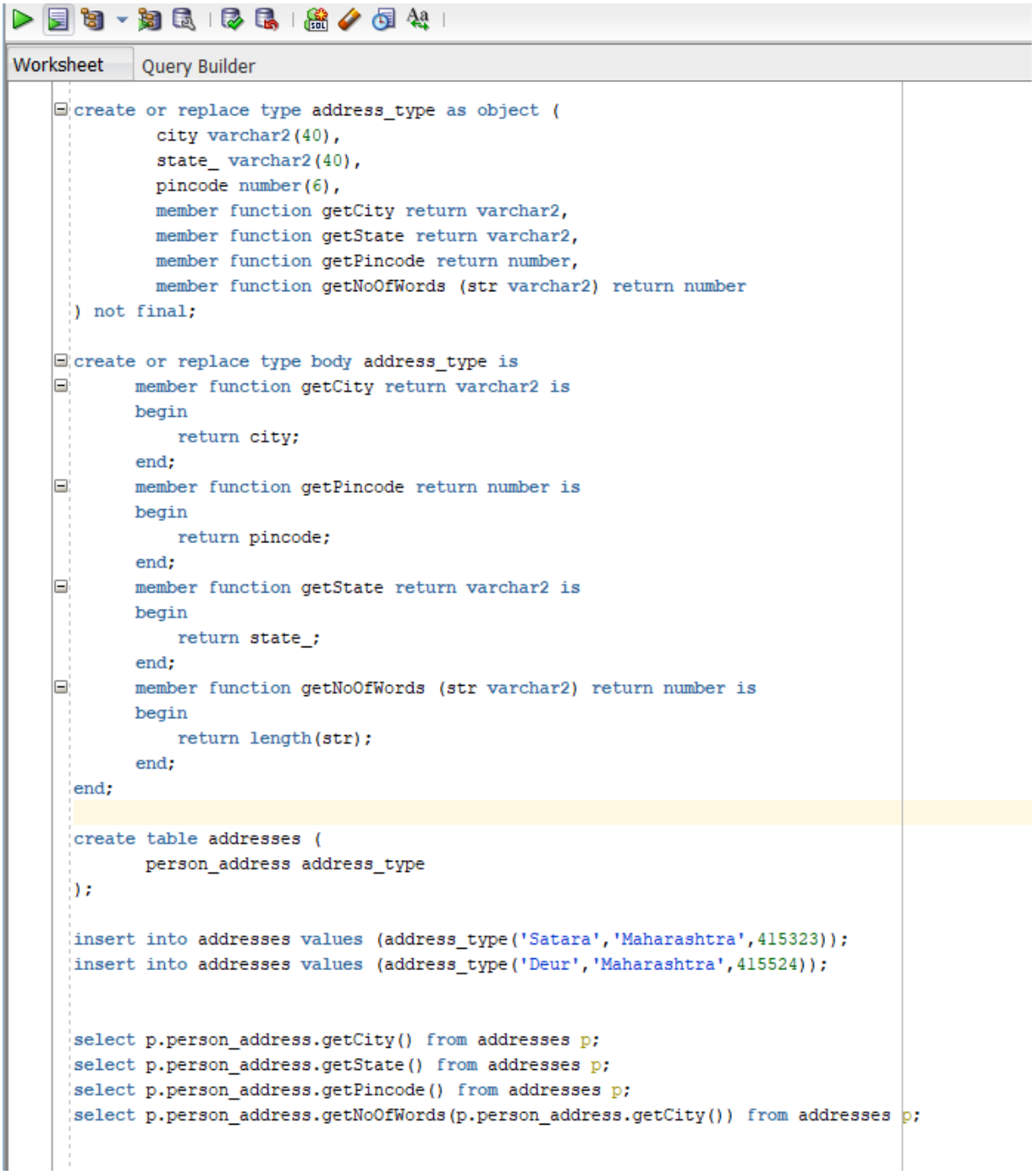
```
set serveroutput on;

create or replace TYPE name_object as object (
    person_name varchar2(50),
    member function countNoOfWords return number
) not final;

set serveroutput on;

create or replace type body name_object as
member function countNoOfWords return number is
    begin
        DBMS_OUTPUT.PUT_LINE('LENGTH');
        return length(person_name)-length(replace(person_name,' ',''))+1;
    end;
end;

create table person_table (
     person_name name_object
);

insert into person_table values (name_object('Prathamesh Santosh Raje'));


select P.person_name.countNoOfWords() from person_table P;
```

Script Output | Query Result

SQL | All Rows Fetched: 1 in 0.006 seconds

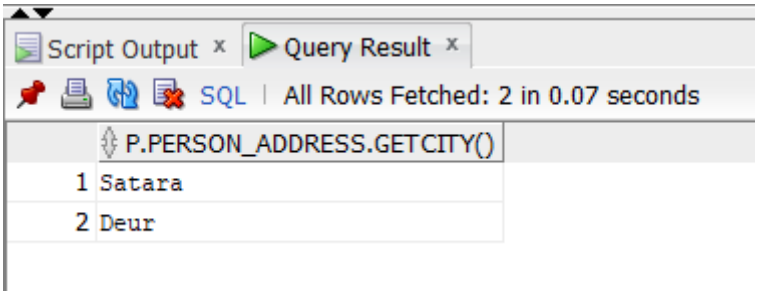
| | P.PERSON_NAME.COUNTNOOFWORDS() |
|---|---|
| 1 | 3 |

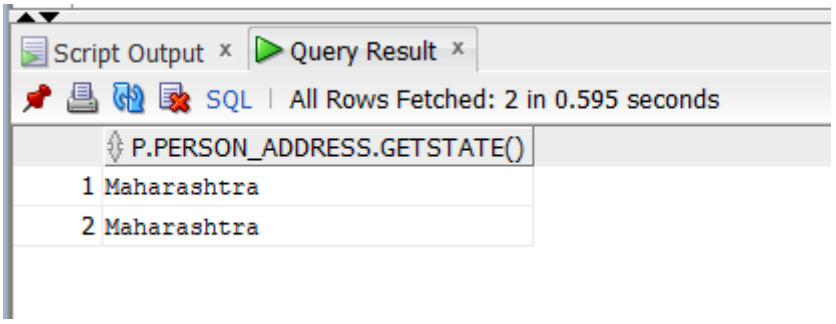
b) Create an address type with the following attributes : address, city, state & pincode. Include the following methods
i. to extract the addresses based on the given keyword.
j. to return the no. of words in each given field (method should accept the name of attribute/field)

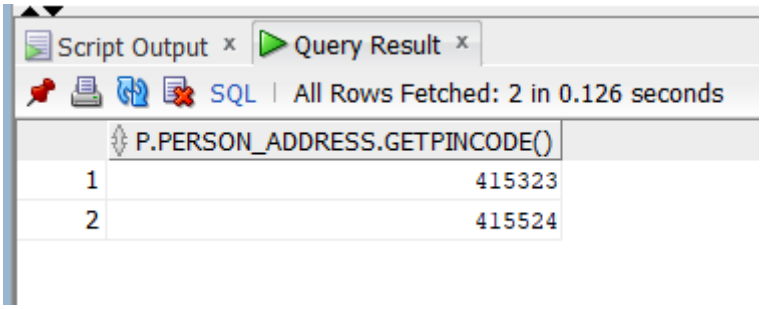


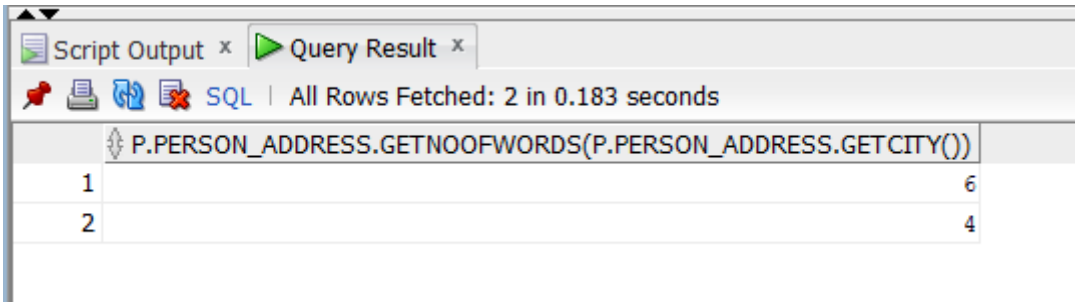
Worksheet | Query Builder

```
create or replace type address_type as object (
        city varchar2(40),
        state_ varchar2(40),
        pincode number(6),
        member function getCity return varchar2,
        member function getState return varchar2,
        member function getPincode return number,
        member function getNoOfWords (str varchar2) return number
) not final;

create or replace type body address_type is
      member function getCity return varchar2 is
      begin
          return city;
      end;
      member function getPincode return number is
      begin
          return pincode;
      end;
      member function getState return varchar2 is
      begin
          return state_;
      end;
      member function getNoOfWords (str varchar2) return number is
      begin
          return length(str);
      end;
end;

create table addresses (
       person_address address_type
);

insert into addresses values (address_type('Satara','Maharashtra',415323));
insert into addresses values (address_type('Deur','Maharashtra',415524));


select p.person_address.getCity() from addresses p;
select p.person_address.getState() from addresses p;
select p.person_address.getPincode() from addresses p;
select p.person_address.getNoOfWords(p.person_address.getCity()) from addresses p;
```




c) Create a user defined data type course_Type with 2 attributes course_id, description :

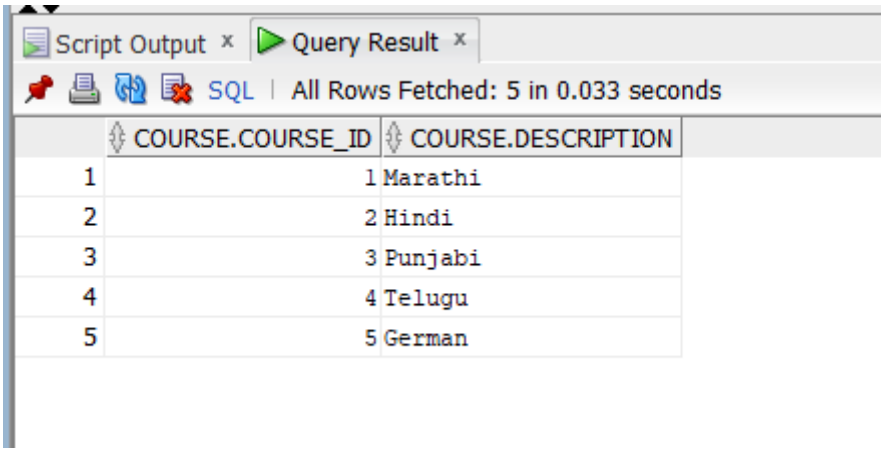
i. Create an object table based on the type created.

j. Insert rows into the table

Demonstrate the working with different data sets

```
create or replace type course_type as object (
       course_id number(10),
       description varchar2(100)
);


create table course_table(
    course course_type
);

insert into course_table values (course_type(1,'Marathi'));
insert into course_table values (course_type(2,'Hindi'));
insert into course_table values (course_type(3,'Punjabi'));
insert into course_table values (course_type(4,'Telugu'));
insert into course_table values (course_type(5,'German'));


select * from course_table;

select ct.course.course_id, ct.course.description from course_table ct;
```

Output:




| | COURSE.COURSE_ID | COURSE.DESCRIPTION |
|---|---|---|
| 1 | 1 | Marathi |
| 2 | 2 | Hindi |
| 3 | 3 | Punjabi |
| 4 | 4 | Telugu |
| 5 | 5 | German |