**ASSIGNMENT NO.2**

**Group ID:** 2018BCGRP10

**Batch :** T2

**Roll no:** 2018BTECS00072 **,** 2018BTECS00086

**Title:** Object Relational Databases.

**Theory :**

An object type allows you to crate composite types. Using objects allow you

implementing real world objects with specific structure of data and methods for operating it.

Objects have attributes and methods. Attributes are properties of an object and are used for

storing an object's state; and methods are used for modeling its behaviors.

An **object-relational database** (**ORD**), or **object-relational database management system** (**ORDBMS**), is a database management systems (DBMS) similar to relational database, but with an object-oriented database model: objects, classes and inheritance are directly supported in database schemas and in the query-language. In addition, just as with pure relational systems, it supports extension of the data-models with custom data-types and methods.

**Program :**

**a)Create Object Table containing field “name” of size 50 characters and member function “countNoOfWords” which returns the no. of words in “name” field.**

**Demonstrate the working by entering different data.**

create type studentinfo as object(

name varchar(50),

map member function retWordCount return number)not final;

create type body stud as

map member function retWordCount return number is

no\_word number(20) :=0;

s char;

begin

for i in 1..Length(name) Loop

s:= substr(name,i,1);

if s = ' ' or s='.' or s=',' then

no\_word := no\_word +1;

end if;

end loop;

no\_word:=no\_word+1;

dbms\_output.Put\_Line('No of words'||no\_word);

return no\_word;

end;

end;

create table stud\_t of studentinfo;

insert into stud\_t values(('Shruti Rajendra Mohite’'));

insert into stud\_t values(('Sawan Pandita’'));

insert into stud\_t values('Ty CSE 2022');

insert into stud\_t values('2018BTECS00086’');

select \* from stud\_t;

select value(st).name as stud\_name , value(st).retWordCount() as word\_count

from stud\_t st

where value(st).retWordCount()<5;

**b) Create an address type with the following attributes : address,city, state & pincode. Include the following methods**

**i. to extract the addresses based on given keyword.**

**j. to return the no. of words in each given field (method should accept the name of attribute/field)**

create type address as object (

short\_address varchar2(50),

city varchar2(20),

state varchar2(20),

pincode number(6),

member function getAddress(key\_val varchar) return number,

member function no\_of\_words(typ varchar) return number

)not final;

create or replace type body address as

**/\*to extract the addresses based on given keyword.\*/**

member function getAddress(key\_val in varchar) return number is

no\_word number(20) :=0;

s char :=' ';

str varchar(20):=' ';

flg number(1):=0;

j number(10) :=0;

k number(10) :=0;

begin

for i in 1..Length(short\_address) Loop

s:= substr(short\_address,i,1);

if s = ' ' or s='.' or s=',' then

str:= substr(short\_address,j,k);

j:= i+1;

k:=-1;

if str=key\_val then

DBMS\_OUTPUT.PUT\_LINE('Address :'||short\_address);

flg :=1;

return flg;

end if;

end if;

k:= k+1;

end loop;

return flg;

end;

**/\*to return the no. of words in each given field\*/**

member function no\_of\_words(typ in varchar) return number is

no\_word number(20) :=1;

s char;

len number(3):=0;

begin

if(typ='short\_address') then

for i in 1..Length(short\_address) Loop

s:= substr(short\_address,i,1);

if s = ' ' or s='.' or s=',' then

no\_word := no\_word +1;

DBMS\_OUTPUT.PUT\_LINE('Address :');

end if;

end loop;

elsif(typ='city') then

for i in 1..Length(city) Loop

s:= substr(city,i,1);

if s = ' ' or s='.' or s=',' then

no\_word := no\_word +1;

DBMS\_OUTPUT.PUT\_LINE('Address :');

end if;

end loop;

else

for i in 1..Length(state) Loop

s:= substr(state,i,1);

if s = ' ' or s='.' or s=',' then

no\_word := no\_word +1;

DBMS\_OUTPUT.PUT\_LINE('Address :');

end if;

end loop;

end if;

return no\_word;

end;

end;

create table address\_table of address;

insert into address\_table values('shanivar peth 1','Ichalkaranji','maharashtra',415002); insert into address\_table values('mangalvar peth 1','Ichalkaranji','maharashtra',416115);

insert into address\_table values('ganpati mandir gaonbhag','Ichalkaranji','maharashtra',416115);

**/\*to extract the addresses based on given keyword.\*/**

select ad.short\_address from address\_table ad where value(ad).getAddress('mandir')=1;

/\*to return the no. of words in each given field ='city'\*/

select ad.city, value(ad).no\_of\_words('city')as wordCount from address\_table ad;

**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**

create type course as object

(

cource\_id varchar2(10),

description varchar(50)

);

create type faculty as object

(

name varchar2(20),

experience number(2)

);

create table Course\_table of course;

insert into Course\_table values('3cs101','Algorithm');

insert into Course\_table values('3cs103','CN');

insert into Course\_table values('3cs104','ADS');

insert into Course\_table values('3cs102','OS');

select \* from course\_table;

create table Course\_faculty

(

c course,

f faculty

);

insert into Course\_faculty values(course('3cs102' ,'Web'),faculty('PQR',10));

insert into Course\_faculty values(course('3cs112' ,'IAWP'),faculty('ABC',10));

insert into Course\_faculty values(course('3cs132' ,'DACC'),faculty('XYZ',10));

insert into Course\_faculty values(course('3cs122' ,'ADS'),faculty('LMN',10));

select \* from course\_faculty;

**Results/Observation:**

**Question A**

1. **Creating Object**

**Graphical user interface, text, application, Word

Description automatically generated**

1. **Creating Table**

**Graphical user interface, text, application, Word

Description automatically generated**

1. **Performing Operations**

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**Graphical user interface, text, application

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**Question B**

1. **Creating Address Type**

**Graphical user interface, text, application

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**2.creating table**

**Graphical user interface, application

Description automatically generated**

3.Inserting values:

**Graphical user interface, application

Description automatically generated**

**4.operations:**

**Graphical user interface, text, application

Description automatically generated**

**Graphical user interface, text, application, Word

Description automatically generated**

**Question C**

1. **Creating type course and faculty**

**Graphical user interface, text, application

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**Graphical user interface, text, application

Description automatically generated**

**2.table creation:**

**Graphical user interface, text, application

Description automatically generated**

**3.Inserting values:**

**Graphical user interface, text, application

Description automatically generated**

**Graphical user interface, text, application

Description automatically generated**

**Graphical user interface, text, application

Description automatically generated**

**Graphical user interface, text, application

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**Graphical user interface, text, application

Description automatically generated**

**Conclusion:**

* Studied Object Relational Databases.
* Demonstrated working with different data sets and entering different data