MSC-1 NAME: SHAIKH SALMA MANJAR

PRACTICAL NO:01

Part A :

Create the following types using OODBMS:

PersonType ( Per\_id, Per\_name, DOB)

DOB is the date of birth of a person. Include a method to find the age of a person.

BankType (account\_no, per\_id, balance)

Create the appropriate tables.Insert 5 tuples and fire the following queries: (i) Find name and age of a person

ii)Find all names with account number.

iii) Find the names with balance more than 12,000

SQL> create or replace type persontype as object(personid number(3), person\_name varchar2(20), dob date, member function age return number);

Type created.

SQL> create or replace type body persontype as member function age return number 2 as

3 begin

4 return(round((sysdate-dob)/365));

5 end age;

6 end;

7 /

Type body created.

SQL> create or replace type banktype as object(account\_no number(20),person ref persontype,balance number(20,2));

2 /

Type created.

SQL> create table person of persontype;

Table created.

SQL> insert into person values(persontype(1,'sam','24-apr-1993')); 1 row created.

SQL> insert into person values(persontype(2,'anni','24-aug-1992')); 1 row created.

1

MSC-1 NAME: SHAIKH SALMA MANJAR

SQL> insert into person values(persontype(3,'marry','11-apr-1992')); 1 row created.

SQL> insert into person values(persontype(4,'harry','5-oct-1992')); 1 row created.

SQL> insert into person values(persontype(5,'sunny','14-jun-1993')); 1 row created.

SQL> select \* from person;

PERSONID PERSON\_NAME DOB

---------- -------------------- ---------

1 sam 24-APR-93

2 anni 24-AUG-92

3 marry 11-APR-92

4 harry 05-OCT-92

5 Sunny 14-JUN-9

SQL>select p.\*,p.age() "Age" from person p;

PERSONID PERSON\_NAME DOB Age

---------- ----------------------- --------- ----------

1 sam 24-APR-93 21

2 anni 24-AUG-92 21

3 marry 11-APR-92 22

4 harry 05-OCT-92 21

5 Sunny 14-JUN-93 21

(i) Find name and age of a person

SQL> select p.person\_name,p.age() "Age" from person p;

PERSON\_NAME Age

-------------------- ----------

sam 21

anni 21

marry 22

harry 21

Sunny 21

SQL> create table banktable of banktype;

Table created.

2

MSC-1 NAME: SHAIKH SALMA MANJAR

SQL> insert into banktable select 101,ref(p),10000 from person p where p.person\_name='sam';

1 row created.

SQL> insert into banktable select 102,ref(p),20000 from person p where p.person\_name='anni';

1 row created.

SQL> insert into banktable select 103,ref(p),30000 from person p where p.person\_name='marry';

1 row created.

SQL> insert into banktable select 104,ref(p),40000 from person p where p.person\_name='harry';

1 row created.

SQL> insert into banktable select 105,ref(p),50000 from person p where p.person\_name='sunny';

1 row created.

SQL> select account\_no,deref(person), balance from banktable

ACCOUNT\_NO

----------

DEREF(PERSON)(PERSONID, PERSON\_NAME, DOB)

--------------------------------------------------------------------------------

BALANCE

----------

101

PERSONTYPE(1, 'sam', '24-APR-93')

10000

102

PERSONTYPE(2, 'anni', '24-AUG-92')

20000

ACCOUNT\_NO

----------

DEREF(PERSON)(PERSONID, PERSON\_NAME, DOB)

--------------------------------------------------------------------------------

BALANCE

----------

3

MSC-1 NAME: SHAIKH SALMA MANJAR

103

PERSONTYPE(3, 'marry', '11-APR-92')

30000

104

PERSONTYPE(4, 'harry', '05-OCT-92')

ACCOUNT\_NO

----------

DEREF(PERSON)(PERSONID, PERSON\_NAME, DOB)

--------------------------------------------------------------------------------

BALANCE

----------

40000

105

PERSONTYPE(5, 'Sunny', '14-JUN-93')

50000

ii)Find all names with account number

SQL> select p.person\_name,b.account\_no from banktable b,person p where p.personid=b.person.personid;

PERSON\_NAME ACCOUNT\_NO

-------------------- ----------

sam 101

anni 102

marry 103

harry 104

sunny 105

iii) Find the names with balance more than 12,000

SQL> select p.person\_name, b.balance from banktable b , person p where p.personid=b.person.personid

and b.balance>12000;

PERSON\_NAME BALANCE

-------------------- ----------

anni 20000

marry 30000

harry 40000

Sunny 50000

4

MSC-1 NAME: SHAIKH SALMA MANJAR

Part. B.

Using object oriented databases, create the following types

a)Staff(staff id,name, dept, sal, other detail, dob,GetAge)

b)Depttype(dept id,name, location, emp)

Next create the following tables:

Stafftable of Staff

Depttable of Depttype nested with emp and store it in reldept

Fire following queries:

1.List all the staff name from the stafftable.

2.List the age of the all staff name.

3.List the staff name, id, dept, sal, age from the stafftable.

4.List the staff id, dept name from the depttype table.

5.Count the no. of name for given dept name=’manager’.

6.List the all record of given staff name=’jigi’.

7.Count the dept name from table depttype.

SQL> create type stafftype as object(staff\_id varchar2(20),name varchar2(20),dept varchar2(20),sal number(20),other\_details varchar2(20),dob date, member function getage return number);

2 /

Type created.

SQL> create or replace type body stafftype as member function getage return number 2 as

3 begin

4 return(round((sysdate-dob)/365));

5 end getage;

6 end;

7 /

Type body created.

SQL> create type stafftabletype as table of stafftype;

2 /

Type created.

SQL> create type depttype as object(dept\_id varchar2(20),designation varchar2(20),location varchar2(20),emp stafftabletype);

2 /

Type created.

SQL> create table depttable of depttype nested table emp store as reldept; 5

MSC-1 NAME: SHAIKH SALMA MANJAR

Table created.

SQL> create table stafftable of stafftype;

Table created.

SQL> insert into stafftable

values(stafftype('s01','jigi','account',20000,'abc','24-apr-1993'));

1 row created.

SQL> insert into stafftable

values(stafftype('s02','marry','manager',30000,'pqr','14-jun-1993')); 1 row created.

SQL> insert into stafftable

values(stafftype('s03','harry','manager',20000,'xyz','24-aug-1992')); 1 row created.

SQL> insert into stafftable

values(stafftype('s04','sunny','marketing',35000,'mno','13-dec-1987')); 1 row created.

SQL> insert into stafftable

values(stafftype('s05','anni','sales',28000,'def','21-may-2006'));

1 row created.

SQL> select \* from stafftable;

STAFF\_ID NAME DEPT SAL

-------------------- -------------------- -------------------- ----------

OTHER\_DETAILS DOB

-------------------- ---------

s01 jigi account 20000

abc 24-APR-93

s02 marry manager 30000

pqr 14-JUN-93

s03 harry manager 20000

xyz 24-AUG-92

STAFF\_ID NAME DEPT SAL

6

MSC-1 NAME: SHAIKH SALMA MANJAR

-------------------- -------------------- -------------------- ----------

OTHER\_DETAILS DOB

-------------------- ---------

s04 sunny marketing 35000

mno 13-DEC-87

s05 anni sales 28000

def 21-MAY-06

SQL> insert into depttable

values('D01','manager','andheri',stafftabletype(stafftype('s01','jigi','account','20000','abc ','24-apr-1993')));

1 row created.

SQL> insert into depttable values('D02','asst

manager','sion',stafftabletype(stafftype('s02','marry','manager','30000','pqr','14-jun-199 3')));

1 row created.

SQL> insert into depttable

values('D03','manager','dadar',stafftabletype(stafftype('s03','harry','manager','20000','x yz','24-aug-1992')));

1 row created.

SQL> insert into depttable

values('D04','hr','cst',stafftabletype(stafftype('s04','sunny','marketing','35000','mno','13- dec-1987')));

1 row created.

SQL> insert into depttable

values('D05','secretary','airoli',stafftabletype(stafftype('s05','anni','sales','28000','def','2 1-may-2006')));

1 row created.

SQL> select \* from depttable;

DEPT\_ID DESIGNATION LOCATION

-------------------- -------------------- --------------------

EMP(STAFF\_ID, NAME, DEPT, SAL, OTHER\_DETAILS, DOB)

--------------------------------------------------------------------------------

D01 manager andheri

STAFFTABLETYPE(STAFFTYPE('s01', 'jigi', 'account', 20000, 'abc', '24-APR-93')) 7

MSC-1 NAME: SHAIKH SALMA MANJAR

D02 asst manager sion

STAFFTABLETYPE(STAFFTYPE('s02', 'marry', 'manager', 30000, 'pqr', '14-JUN-93'))

D03 manager dadar

STAFFTABLETYPE(STAFFTYPE('s03', 'harry', 'manager', 20000, 'xyz', '24-AUG-92'))

DEPT\_ID DESIGNATION LOCATION

-------------------- -------------------- --------------------

EMP(STAFF\_ID, NAME, DEPT, SAL, OTHER\_DETAILS, DOB)

--------------------------------------------------------------------------------

D04 hr cst

STAFFTABLETYPE(STAFFTYPE('s04', 'sunny', 'marketing', 35000, 'mno', '13-DEC-87') )

D05 secretary airoli

STAFFTABLETYPE(STAFFTYPE('s05', 'anni', 'sales', 28000, 'def', '21-MAY-06')) 1.List all the staff name from the stafftable.

SQL> select name from stafftable;

NAME

--------------------

jigi

marry

harry

sunny

anni

2.List the age of the all staff name.

SQL> select s.getage() "Age" from stafftable s;

Age

----------

29

29

30

35

16

3.List the staff name, id, dept, sal, age from the stafftable.

SQL> select s.name,s.staff\_id,s.dept,s.getage() "Age" from stafftable s; NAME STAFF\_ID DEPT Age

8

MSC-1 NAME: SHAIKH SALMA MANJAR

-------------------- -------------------- -------------------- ----------

jigi s01 account 29

marry s02 manager 29

harry s03 manager 30

sunny s04 marketing 35

anni s05 sales 16

4.List the staff id, dept name from the depttype table.

SQL> select e.staff\_id,d.designation from depttable d,table(d.emp) e;

STAFF\_ID DESIGNATION

-------------------- --------------------

s01 manager

s02 asst manager

s03 manager

s04 hr

s05 secretary

5.Count the no. of name for given dept name=’manager’.

SQL> select count(designation) from depttable where designation='manager';

COUNT(DESIGNATION)

------------------

2

6.List the all record of given staff name=’jigi’.

SQL> select e.staff\_id,e.name,e.sal,e.dept from depttable,table(emp) e where e.name='jigi';

STAFF\_ID NAME SAL DEPT

-------------------- -------------------- ---------- --------------------

s01 jigi 20000 account

7.Count the dept name from table depttype.

SQL> select count(designation) from depttable;

COUNT(DESIGNATION)

-----------

5

9

MSC-1 NAME: SHAIKH SALMA MANJAR

Part.C.

Using object oriented databases, create the following types:

a)addrtype(pincode, street, city, state)

b)branchtype(address, phone1, phone2)

c)authortype(name, addr)

d)publishertype(name, addr, branches)

e)authorlisttype as varray, which is reference to authortype

Next create the following tables:

f)branchtabletype of branchtype

g)authors of authortype

h)books(title, year, publisher by ref publishertype, authors )

i)publishers of publisher type

Fire following queries:

1.List all of the authors that have the same pin code as their publisher. 2.List all books that have 2 or more authors.

3.List all authors who have published more than one book.

4.Name the title of the book that has the most authors.

SQL> create or replace type addrtype as object(pincode number(20.2),street varchar2(20),city varchar2(20),state varchar2(20));

2 /

Type created.

SQL> create or replace type branchtype as object(address addrtype,ph1 number(20),ph2 number(20));

2 /

Type created.

SQL> create or replace type authortype as object(name varchar2(20),address addrtype);

2 /

Type created.

SQL> create or replace type branchtabletype as table of branchtype; 2 /

Type created.

SQL> create or replace type publishertype as object(name varchar2(20),address addrtype, branches branchtabletype);

2 /

Type created.

10

MSC-1 NAME: SHAIKH SALMA MANJAR

SQL> create or replace type authorlisttype as array(10) of ref authortype; 2 /

Type created.

SQL> create table authors1 of authortype;

Table created.

SQL> create table books(title varchar2(20),year date,published\_by ref publishertype,authors authorlisttype);

Table created.

SQL> create table publisher of publishertype nested table branches store as branchtable1;

Table created.

SQL> insert into authors1 values('ahoulman',addrtype(400078,'lbs marg','bhandup','Mh'));

1 row created.

SQL> insert into authors1 values('paulraj',addrtype(400070,'lbs marg','sion','Mh')); 1 row created.

SQL> insert into authors1 values('scheller',addrtype(400070,'lbs marg','sion','Mh')); 1 row created.

SQL> insert into authors1 values('navathe',addrtype(400088,'lbs marg','kurla','Mh')); 1 row created.

SQL> insert into authors1 values('jerrybank',addrtype(400060,'gb','bandra','Mh')); 1 row created.

SQL> insert into authors1 values('rabiner',addrtype(400050,'gs','cst','Mh')); 1 row created.

SQL> insert into authors1 values('michael',addrtype(400020,'mp marg','anand','Gj')); 1 row created.

11

MSC-1 NAME: SHAIKH SALMA MANJAR

SQL> insert into authors1 values('balaguruswamy',addrtype(400020,'yk marg','chd','pb'));

1 row created.

SQL> insert into authors1 values('kanetkar',addrtype(400010,'k marg','chd','pb')); 1 row created.

SQL> insert into authors1 values('don box',addrtype(400090,'a marg','chd','pb')); 1 row created.

SQL> select \* from authors1;

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

ahoulman

ADDRTYPE(400078, 'lbs marg', 'bhandup', 'Mh')

paulraj

ADDRTYPE(400070, 'lbs marg', 'sion', 'Mh')

scheller

ADDRTYPE(400070, 'lbs marg', 'sion', 'Mh')

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

navathe

ADDRTYPE(400088, 'lbs marg', 'kurla', 'Mh')

jerrybank

ADDRTYPE(400060, 'gb', 'bandra', 'Mh')

rabiner

ADDRTYPE(400050, 'gs', 'cst', 'Mh')

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

12

MSC-1 NAME: SHAIKH SALMA MANJAR

michael

ADDRTYPE(400020, 'mp marg', 'anand', 'Gj')

balaguruswamy

ADDRTYPE(400020, 'yk marg', 'chd', 'pb')

kanetkar

ADDRTYPE(400010, 'k marg', 'chd', 'pb')

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

don box

ADDRTYPE(400090, 'a marg', 'chd', 'pb')

10 rows selected.

SQL> insert into publisher values ('Tata',addrtype(400078,'lbs

marg','bhandup','Mh'),branchtabletype(branchtype (addrtype(400070,'lbs marg','sion','Mh'),11111111,22222222)));

1 row created.

SQL> insert into publisher values ('Tata',addrtype(400078,'lbs

marg','bhandup','Mh'),branchtabletype(branchtype (addrtype(400078,'lbs marg1','sion','Mh'),11111111,22222222)));

1 row created.

SQL> insert into publisher values ('Vipul',addrtype(400078,'lbs

marg','kurla','Mh'),branchtabletype(branchtype (addrtype(400070,'lbs marg1','kurla1','Mh'),11111111,22222222)));

1 row created.

SQL> insert into publisher values ('Tata Mac',addrtype(400075,'lbs marg','mulund','Mh'),branchtabletype(branchtype (addrtype(400070,'lbs marg1','mulund1','Mh'),11111111,22222222)));

1 row created.

SQL> insert into publisher values ('Wiely',addrtype(400075,'lbs

marg','cst','Mh'),branchtabletype(branchtype (addrtype(400070,'lbs marg1','cst1','Mh'),11111111,22222222)));

13

MSC-1 NAME: SHAIKH SALMA MANJAR

1 row created.

SQL> insert into publisher values ('Navnit',addrtype(400075,'lbs

marg','vadala','Mh'),branchtabletype(branchtype (addrtype(400070,'lbs marg1','vadala1','Mh'),11111111,22222222)));

1 row created.

SQL> select \* from publisher;

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

BRANCHES(ADDRESS(PINCODE, STREET, CITY, STATE), PH1, PH2) --------------------------------------------------------------------------------

Tata

ADDRTYPE(400078, 'lbs marg', 'bhandup', 'Mh')

BRANCHTABLETYPE(BRANCHTYPE(ADDRTYPE(400070, 'lbs marg', 'sion', 'Mh'), 11111111,

22222222))

Tata

ADDRTYPE(400078, 'lbs marg', 'bhandup', 'Mh')

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

BRANCHES(ADDRESS(PINCODE, STREET, CITY, STATE), PH1, PH2) --------------------------------------------------------------------------------

BRANCHTABLETYPE(BRANCHTYPE(ADDRTYPE(400078, 'lbs marg1', 'sion', 'Mh'), 11111111

, 22222222))

Vipul

ADDRTYPE(400078, 'lbs marg', 'kurla', 'Mh')

BRANCHTABLETYPE(BRANCHTYPE(ADDRTYPE(400070, 'lbs marg1', 'kurla1', 'Mh'), 111111

11, 22222222))

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

BRANCHES(ADDRESS(PINCODE, STREET, CITY, STATE), PH1, PH2) --------------------------------------------------------------------------------

Tata Mac

14

MSC-1 NAME: SHAIKH SALMA MANJAR

ADDRTYPE(400075, 'lbs marg', 'mulund', 'Mh')

BRANCHTABLETYPE(BRANCHTYPE(ADDRTYPE(400070, 'lbs marg1', 'mulund1', 'Mh'), 11111

111, 22222222))

Wiely

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

BRANCHES(ADDRESS(PINCODE, STREET, CITY, STATE), PH1, PH2) --------------------------------------------------------------------------------

ADDRTYPE(400075, 'lbs marg', 'cst', 'Mh')

BRANCHTABLETYPE(BRANCHTYPE(ADDRTYPE(400070, 'lbs marg1', 'cst1', 'Mh'), 11111111

, 22222222))

Navnit

ADDRTYPE(400075, 'lbs marg', 'vadala', 'Mh')

BRANCHTABLETYPE(BRANCHTYPE(ADDRTYPE(400070, 'lbs marg1', 'vadala1', 'Mh'), 11111

NAME

--------------------

ADDRESS(PINCODE, STREET, CITY, STATE)

--------------------------------------------------------------------------------

BRANCHES(ADDRESS(PINCODE, STREET, CITY, STATE), PH1, PH2) --------------------------------------------------------------------------------

111, 22222222))

6 rows selected.

SQL> insert into books select 'Dw','2-jan-1989',ref(p), authorlisttype(ref(a)) from publisher p,authors1 a where p.name='Navnit' and a.name='michael';

1 row created.

SQL> insert into books select 'Dw','2-jan-1989',ref(p), authorlisttype(ref(a)) from publisher p,authors1 a where p.name='Tata Mac' and a.name='ahoulman';

1 row created.

SQL> select \* from books;

TITLE YEAR

-------------------- ---------

PUBLISHED\_BY

15

MSC-1 NAME: SHAIKH SALMA MANJAR

--------------------------------------------------------------------------------

AUTHORS

--------------------------------------------------------------------------------

Dw 02-JAN-89

0000220208EB5DD2F7562A48DA9789CBCEDFCD00F20DBA599CE73E48649BB2693 AEDB1CA4B

AUTHORLISTTYPE(0000280209FEEC56F648804A1887AEB1D221DC903D4AD5EA0D 94394563B32A307

3EF521AAC00429EB90006)

Dw 02-JAN-89

000022020871A5F957C1674E58B4EFCD8F6731DCA00DBA599CE73E48649BB2693A EDB1CA4B

TITLE YEAR

-------------------- ---------

PUBLISHED\_BY

--------------------------------------------------------------------------------

AUTHORS

--------------------------------------------------------------------------------

AUTHORLISTTYPE(00002802092DC2FA647BC240DDB46C8A107B2C78CD4AD5EA0D 94394563B32A307

3EF521AAC00429EB90000)

a) List all of the authors that have the same pin code as their

publisher.

SQL> select a.name from authors1 a,publisher p where

a.address.pincode=p.address.pincode;

NAME

--------------------

ahoulman

ahoulman

ahoulman

b) List all books that have 2 or more authors.

SQL> select b.title from authors1 a, books b,table(b.authors) v where v.column\_value=REF(a) group by title having count(\*)>1;

TITLE

--------------------

Dw

c) List the name of the publisher that has the most branches.

SQL> select p.name from publisher p, table(p.branches) group by p.name having count(\*)>=all (select count(\*) from publisher p, table(p.branches) group by name);

NAME

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MSC-1 NAME: SHAIKH SALMA MANJAR

--------------------

Tata

d) Name the title of the book that has the most authors.

SQL> select b.title from books b, table(b.authors) group by b.title having count(\*)>=(select max(count(\*)) from books b, table(b.authors) group by title);

TITLE

--------------------

Dw

e) List all authors who have published more than one book.

SQL> select a.name from authors1 a, books b, table(b.authors) v where v.column\_value=REF(a) group by a.name having count(\*)>1;

no rows selected

SQL> select a.name from authors1 a, books b, table(b.authors) v where v.column\_value=REF(a) ;

NAME

--------------------

michael

ahoulman

SQL> commit;

Commit complete.

17