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Experiment No. 1: Implement multi-valued attributes in ORDBMS.

Problem statement: Implement multi-valued attributes in ORDBMS for a given dataset.

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1. Create type name_ty with following attributes: ●Fname varchar ●Lname varchar

```
create or replace type name_ty as object(
fname varchar(20), lname varchar(20));
```

```
Type created.
```

2. Create type inv_ty with following attributes: ●Inv_no varchar ●Cust_id varchar

```
create or replace type inv_ty as object(
Inv_vo varchar(20),Cust_id varchar(20));
```

```
Type created.
```

3. Create table Customer with following attributes:●Cust_id varchar ● Name name_ty
● Area varchar ●Ph_no integer

```
create table Customer(
Cust_id varchar(20),Name name_ty,Area varchar(20),phone_no integer);
```

```
Table created.
```

4. Create table invoice using inv_ty.

```
create table invoice of inv_ty;
```

```
Table created.
```

5. Insert following data into customer table.

```
insert into Customer values('a01',name_ty('allan','border'),'sa',723622);
insert into Customer values('a02',name_ty('Tina','Shields'),'mo',237842);
insert into Customer values('a03',name_ty('Ravi','Kumar'),'bi',545621);
insert into Customer values('a04',name_ty('Sunita','Rai'),'ch',983724);
insert into Customer values('a05',name_ty('James','Smith'),'wa',636472);
```

```
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
```

6. Insert following data into invoice table.

```
insert into invoice values('i01','a01');
insert into invoice values('i02','a02');
insert into invoice values('i03','a03');
insert into invoice values('i04','a04');
insert into invoice values('i05','a05');
```

```
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
```

7. Print both customer and invoice tables.

```
select C.Cust_id, C.Name.fname, C.Name.lname, C.Area, C.phone_no from Customer C;

select * from invoice;
```

CUST_ID	NAME.FNAME	NAME.LNAME	AREA	PHONE_NO
a01	allan	border	sa	723622
a04	Sunita	Rai	ch	983724
a05	James	Smith	wa	636472
a02	Tina	Shields	mo	237842
a03	Ravi	Kumar	bi	545621

INV_VO	CUST_ID
i01	a01
i02	a02
i03	a03
i04	a04
i05	a05

8. Retrieve the list of first name and area for all the customers.
select A.Name.fname, A.Area from Customer A;

NAME.FNAME	AREA
allan	sa
Sunita	ch
James	wa
Tina	mo
Ravi	bi

9. Find the name of all the customers having ‘a’ as second letter in first name.
select B.Name.fname from Customer B where B.Name.fname like'_a%'

NAME.FNAME
James
Ravi

10. Find the customers who stay in area sa or bi or ch.
select c.Cust_id, c.Name.fname, c.Name.lname, c.Area, c.phone_no from Customer c where Area in('sa','bi','ch')

CUST_ID	NAME.FNAME	NAME.LNAME	AREA	PHONE_NO
a01	allan	border	sa	723622
a04	Sunita	Rai	ch	983724
a03	Ravi	Kumar	bi	545621

11. Count the total number of customers.
select count(*) from Customer

COUNT(*)
5

12. Find the customer name and area with invoice no ‘i04’.
select d.Name.fname, d.Name.lname, d.Area from Customer d where Cust_id in(select cust_id from invoice where Inv_vo='i04')

NAME.FNAME	NAME.LNAME	AREA
Sunita	Rai	ch

13. Change the phone number of ravi to 546120.
update Customer e set phone_no='123456' where e.Name.fname='ravi'

```
row(s) updated.
```

14. Delete the record with invoice_no ‘i04’.
delete from invoice where Inv_vo='i04'

```
1 row(s) deleted.
```

15. Arrange the customer table in decreasing order of customer id.
select e.Cust_id, e.Name.fname, e.Name.lname, e.Area, e.phone_no from Customer e order by Cust_id desc

CUST_ID	NAME.FNAME	NAME.LNAME	AREA	PHONE_NO
a05	James	Smith	wa	636472
a04	Sunita	Rai	ch	983724
a03	Ravi	Kumar	bi	545621
a02	Tina	Shields	mo	237842
a01	allan	border	sa	723622

16. Delete all the records from customer and invoice table.
Truncate table Customer;

```
Table truncated.
```

Truncate table invoice

```
Table truncated.
```