```
drop type listin force;
drop type telefono force;
drop table clientes_9;
create or replace type telefono as object(
Tipo varchar(30),
Numero number
);
create or replace type listin is table of telefono;
create table clientes_9(
id_cli number,
nombre varchar(30),
apellido varchar(30),
direccion varchar(30),
poblacion varchar(30),
provincia varchar(30),
telefonos listin
) nested table telefonos store as tel_tabl;
insert into clientes_9 values(1,'ROBERTO','DE LA FUENTE','C/ DE LAS
ROSAS', 'MADRID', 'MADRID', listin(telefono(
'Fijo',965431232),telefono('Movil',712221543),telefono('Movil',615123452)));
insert into clientes_9 values(2,'RICK','SANCHEZ','C/ DE GRAN VIA','MADRID','MADRID',listin(telefono(
'Fijo',965555222),telefono('Movil',666123444),telefono('Movil',699123566)));
insert into clientes_9 values(3,'AMANDA','TORRES','AVENIDA DE LAS
SOLEDADES','MURCIA','MURCIA',listin(telefono(
```

'Fijo',912345622),telefono('Fijo',999111222),telefono('Movil',650005123)));

```
SQL> cle@ejercicio9.sql

Type dropped.

Type dropped.

Table dropped.

Type created.

Type created.

Type created.

Table created.

1 row created.

1 row created.

1 row created.
```

select * from clientes_9;

```
10_CLI NOMBRE APELLIDO DIRECCION POBLACION PROVINCIA

TELEFONOS(TIPO, NUMERO)

1 SICARDO SILVA (/ DE LOS ANCELES MADRID MADRID

LISTIN(TELEFONO("Fijo", 965555222), TELEFONO("Movil", 686123444), TELEFONO("Movil", 689123566))

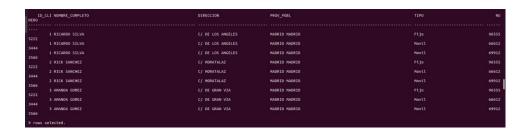
2 RICK (LISTIN(TELEFONO("Fijo", 96555222), TELEFONO("Movil", 686123444), TELEFONO("Movil", 689123566))

3 ANAMOA (OMEZ (/ DE CANA VIA MADRID MADRID

LISTIN(TELEFONO("Fijo", 965555222), TELEFONO("Movil", 686123444), TELEFONO("Movil", 689123566))

ALISTIN(TELEFONO("Fijo", 965555222), TELEFONO("Movil", 686123444), TELEFONO("Movil", 689123566))
```

select c.id_cli,concat(c.nombre,(concat(' ',c.apellido))) nombre_completo,c.direccion,
concat(c.provincia,(concat(' ',c.poblacion))) prov_pobl,
t.* from clientes_9 c, table (c.Telefonos) t;



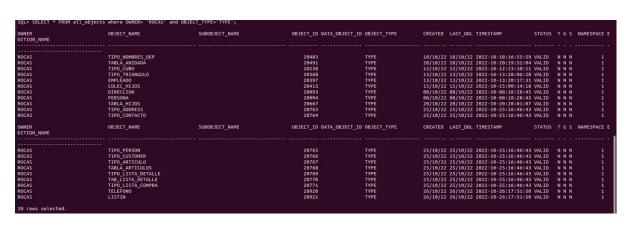
SELECT * FROM USER_OBJECTS;



SELECT * FROM all_objects where OWNER= 'ROCAS';

ROCAS	SYS_C007271	20918	20918 INDEX	25/10/22 25/10/22 2022-10-25:16:46:43 VALID NYN	4
ROCAS	SYS_C007272	28919	20919 INDEX	25/10/22 25/10/22 2022-10-25:16:46:43 VALID N Y N	4
ROCAS	TELEFONO	20920	TYPE	26/10/22 26/10/22 2022-10-26:17:51:50 VALID N N N	
ROCAS	LISTIN	28921	TYPE	26/10/22 26/10/22 2022-10-26:17:51:50 VALID N N N	
ROCAS	CLIENTES	28922	20922 TABLE	25/10/22 25/10/22 2022-10-25:17:33:58 VALID N N N	
OCAS	TEL_TAB	20923	20923 TABLE	25/10/22 25/10/22 2022-10-25:17:32:56 INVALID N N N	
ROCAS	SYS_FK0000020922N00007\$	28924	20924 INDEX	25/10/22 25/10/22 2022-10-25:17:32:56 VALID N N N	4
ROCAS	CLIENTES_9	21332	21332 TABLE	26/10/22 26/10/22 2022-10-26:17:51:50 VALID N N N	
ROCAS	TEL_TABL	21333	21333 TABLE	26/10/22 26/10/22 2022-10-26:17:51:50 VALID N N N	
ROCAS	SYS_FK0000021332N00007\$	21334	21334 INDEX	26/10/22 26/10/22 2022-10-26:17:51:50 VALID N N N	4
ROCAS	SYS C007369	21335	21335 INDEX	26/10/22 26/10/22 2022-10-26:17:51:50 VALID NYN	4

SELECT * FROM all_objects where OWNER= 'ROCAS' and OBJECT_TYPE='TYPE';



SELECT * FROM ALL_OBJECTS;

OWNER DITION_NAME	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID DATA	_OBJECT_ID OBJECT_TYPE	CREATED	LAST_DDL TIMESTAMP	STATUS	TGS	NAMESPACE E
ROCAS	CLIENTES		20922	20922 TABLE	25/10/22	25/10/22 2022-10-25:17:33	:58 VALID	NNN	1
ROCAS	TEL TAB		20923	20923 TABLE	25/10/22	25/10/22 2022-10-25:17:32	:56 INVALID	NNN	1
ROCAS	SYS_FK0000020922N00007\$		28924	20924 INDEX	25/10/22	25/10/22 2022-10-25:17:32	:56 VALID	NNN	4
ROCAS	CLIENTES 9		21332	21332 TABLE	26/10/22	26/10/22 2022-10-26:17:51	:50 VALID	NNN	1
ROCAS	TEL TABL		21333	21333 TABLE	26/10/22	26/10/22 2022-10-26:17:51	:50 VALID	NNN	1
ROCAS	SYS FK0000021332N00007\$		21334	21334 INDEX	26/10/22	26/10/22 2022-10-26:17:51	:50 VALID	NNN	4
ROCAS	SYS C007369		21335	21335 INDEX	26/10/22	26/10/22 2022-10-26:17:51	:50 VALID	NYN	4
17860 rows selected									

SELECT * FROM USER_NESTED_TABLES WHERE TABLE_TYPE_OWNER='ROCAS';

TABLE_NAME	TABLE_TYPE_OWNER	TABLE_TYPE_NAME	PARENT_TABLE_NAME
PARENT_TABLE_COLUMN			
STORAGE_SPEC		RETURN_TYPE	
ELEMENT_SUBSTITUTABL	LE		
TDETALLE DETALLE	ROCAS	TAB_LISTA_DETALI	LE LISTAS_DE_COMPRAS
PETALLE	DEFAULT N	VALUE	
TABLE_NAME	TABLE_TYPE_OWNER	TABLE_TYPE_NAME	PARENT_TABLE_NAME
PARENT_TABLE_COLUMN			
STORAGE_SPEC			
ELEMENT_SUBSTITUTABL			
T_HIJOS HIJOS	ROCAS	TABLA_HIJOS	STAFF
11303	DEFAULT N	VALUE	

SELECT * FROM ALL_NESTED_TABLES WHERE TABLE_TYPE_OWNER='ROCAS';

OWNER PARENT_TABLE_NAME	TABLE_NAME	TABLE_TYPE_OWNER		TABLE_TYPE_NAME
PARENT_TABLE_COLUMN				
STORAGE_SPEC			RETURN_TYPE	
ELEMENT_SUBSTITUTABLE				
ROCAS LISTAS_DE_COMPRAS DETALLE	TDETALLE	ROCAS		TAB_LISTA_DETALLE
	DEFAULT N		VALUE	
OWNER PARENT_TABLE_NAME	TABLE_NAME	TABLE_TYPE_OHNER		TABLE_TYPE_NAME
PARENT_TABLE_COLUMN				
STORAGE_SPEC			RETURN_TYPE	
ELEMENT_SUBSTITUTABLE				
ROCAS STAFF HIJOS	T_HIJOS	ROCAS		TABLA_HIJOS
D	DEFAULT N		VALUE	

select c.id_cli, t.* from clientes_9 c, table (c.Telefonos) t WHERE c.id_cli=3;

```
ID_CLI TIPO NUMERO

3 Fijo 965555222
3 Movil 666123444
3 Movil 699123566
```

select c.id_cli, t.* from clientes_9 c, table (c.Telefonos) t WHERE c.id_cli=1;

```
update clientes_9
set telefonos=listin(telefono('fijo',934444444),
telefono('movil personal',6555555),
telefono('movilempresa',644444444)
)
where id_cli=1;
select c.id_cli, t.* from clientes_9 c, table (c.Telefonos) t WHERE c.id_cli=1;
```

```
ID_CLI TIPO
                                              NUMERO
        1 Fijo
                                           965431232
        1 Movil
                                           712221543
        1 Movil
                                           615123452
1 row updated.
   ID_CLI TIPO
                                              NUMERO
        1 fijo
                                           934444444
        1 movil personal
                                            65555555
         1 movilempresa
                                           64444444
```

select c.id_cli, t.* from clientes_9 c, table (c.Telefonos) t;

```
ID_CLI TIPO
                                          NUMERO
                                       934444444
     1 fijo
    1 movil personal
                                       65555555
    1 movilempresa
                                       64444444
    2 Fijo
                                       965555222
    2 Movil
                                       666123444
     2 Movil
                                       699123566
     3 Fijo
                                       965555222
     3 Movil
                                       666123444
     3 Movil
                                       699123566
```

select c.id_cli,c.nombre, t.tipo,t.numero from clientes_9 c, table (c.Telefonos) t;

1	RICARDO	fijo	93444444
1	RICARDO	movil personal	65555555
1	RICARDO	movilempresa	64444444
2	RICK	Fijo	965555222
2	RICK	Movil	666123444
2	RICK	Movil	699123566
3	AMANDA	Fijo	965555222
3	AMANDA	Movil	666123444
3	AMANDA	Movil	699123566