

```
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
C Type dropped.
/
Type dropped.
C
i Table dropped.
n
a Type created.
d
p Type created.
p
t Table created.
)
1 row created.
i
t 1 row created.
t
t 1 row created.
```

```
select * from clientes_9;
```

ID_CLI	NOMBRE	APELLIDO	DIRECCION	POBLACION	PROVINCIA
TELEFONOS(TIPO, NUMERO)					
1	RICARDO	SILVA	C/ DE LOS ANGELES	MADRID	MADRID
LISTIN(TELEFONO('Fijo', 965555222), TELEFONO('Movil', 666123444), TELEFONO('Movil', 699123566))					
2	RICK	SANCHEZ	C/ MORATALAZ	MADRID	MADRID
LISTIN(TELEFONO('Fijo', 965555222), TELEFONO('Movil', 666123444), TELEFONO('Movil', 699123566))					
3	AMANDA	GOMEZ	C/ DE GRAN VIA	MADRID	MADRID
LISTIN(TELEFONO('Fijo', 965555222), TELEFONO('Movil', 666123444), TELEFONO('Movil', 699123566))					

```
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;
```

ID_CLI	NOMBRE_COMPLETO	DIRECCION	PROV_POBL	TIPO	NU
PERO	.....	.....	.....	.....	.....
5222	1 RICARDO SILVA	C/ DE LOS ANGELES	MADRID MADRID	Fijo	96555
3444	1 RICARDO SILVA	C/ DE LOS ANGELES	MADRID MADRID	Movil	66612
3666	1 RICARDO SILVA	C/ DE LOS ANGELES	MADRID MADRID	Movil	69912
5222	2 RICK SANCHEZ	C/ MORATALAZ	MADRID MADRID	Fijo	96555
3444	2 RICK SANCHEZ	C/ MORATALAZ	MADRID MADRID	Movil	66612
3666	2 RICK SANCHEZ	C/ MORATALAZ	MADRID MADRID	Movil	69912
5222	3 AMANDA GOMEZ	C/ DE GRAN VIA	MADRID MADRID	Fijo	96555
3444	3 AMANDA GOMEZ	C/ DE GRAN VIA	MADRID MADRID	Movil	66612
3666	3 AMANDA GOMEZ	C/ DE GRAN VIA	MADRID MADRID	Movil	69912

9 rows selected.

SELECT \* FROM USER\_OBJECTS;

TEL_TABL	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N	1	21333	21333	TABLE
OBJECT_NAME	CREATED	LAST_DDL_TIMESTAMP	STATUS	T	G	S	NAMESPACE	SUBOBJECT_NAME	OBJECT_ID DATA_OBJECT_ID OBJECT_TYPE
EDITION_NAME	.....	.....	.....	.....	.....	.....	.....	.....	.....
SYS_FK0000021332N00007\$	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N	4		21334	21334 INDEX
SYS_C007369	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N	4		21335	21335 INDEX

77 rows selected.

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	N	N	N	4
ROCAS	SYS_C007272	20919	20919	INDEX	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N	4
ROCAS	TELEFONO	20920		TYPE	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N	1
ROCAS	LISTIN	20921		TYPE	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N	1
ROCAS	CLIENTES	20922	20922	TABLE	25/10/22 25/10/22 2022-10-25:17:33:58	VALID	N	N	N	1
ROCAS	TEL_TAB	20923	20923	TABLE	25/10/22 25/10/22 2022-10-25:17:32:56	INVALID	N	N	N	1
ROCAS	SYS_FK0000020922N00007\$	20924	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	1
ROCAS	TEL_TABL	21333	21333	TABLE	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N	1
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	N	N	N	4

77 rows selected.

SELECT \* FROM all\_objects where OWNER= 'ROCAS' and OBJECT\_TYPE='TYPE';

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIMESTAMP	STATUS	T	G	S	NAMESPACE	E
EDITION_NAME	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
ROCAS	TIPO_NOMBRES_DEP		20483		TYPE	18/10/22 18/10/22 2022-10-18:16:55:59	VALID	N	N	N		1	
ROCAS	TABLA_ANIDADA		20491		TYPE	20/10/22 20/10/22 2022-10-20:19:52:04	VALID	N	N	N		1	
ROCAS	TIPO_CUBO		20238		TYPE	12/10/22 12/10/22 2022-10-12:23:10:11	VALID	N	N	N		1	
ROCAS	TIPO_TRIANGULO		20368		TYPE	13/10/22 13/10/22 2022-10-13:20:06:28	VALID	N	N	N		1	
ROCAS	EMPLEADO		20397		TYPE	13/10/22 13/10/22 2022-10-13:20:17:31	VALID	N	N	N		1	
ROCAS	COLEC_HIJOS		20413		TYPE	15/10/22 15/10/22 2022-10-15:00:14:18	VALID	N	N	N		1	
ROCAS	DIRECCION		20093		TYPE	08/10/22 08/10/22 2022-10-08:18:28:45	VALID	N	N	N		1	
ROCAS	PERSONA		20094		TYPE	08/10/22 08/10/22 2022-10-08:18:28:45	VALID	N	N	N		1	
ROCAS	TABLA_HIJOS		20667		TYPE	20/10/22 20/10/22 2022-10-20:20:01:07	VALID	N	N	N		1	
ROCAS	TIPO_ADDRESS		20763		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TIPO_CONTACTO		20764		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIMESTAMP	STATUS	T	G	S	NAMESPACE	E
EDITION_NAME	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
ROCAS	TIPO_PERSON		20765		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TIPO_CUSTOMER		20766		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TIPO_ARTICULO		20767		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TABLA_ARTICULOS		20768		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TIPO_LISTA_DETALLE		20769		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TAB_LISTA_DETALLE		20770		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TIPO_LISTA_COMPRA		20771		TYPE	25/10/22 25/10/22 2022-10-25:16:46:43	VALID	N	N	N		1	
ROCAS	TELEFONO		20920		TYPE	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N		1	
ROCAS	LISTIN		20921		TYPE	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N	N	N		1	

20 rows selected.

SELECT \* FROM ALL\_OBJECTS;

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED	LAST_DDL_TIMESTAMP	STATUS	T G S	NAMESPACE
DITION_NAME										
ROCAS	CLIENTES		28922	28922	TABLE	25/10/22 25/10/22 2022-10-25:17:33:58	VALID	N N N		1
ROCAS	TEL_TAB		28923	28923	TABLE	25/10/22 25/10/22 2022-10-25:17:32:56	INVALID	N N N		1
ROCAS	SYS_FK08080020922N00007\$		28924	28924	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		1
ROCAS	TEL_TABL		21333	21333	TABLE	26/10/22 26/10/22 2022-10-26:17:51:50	VALID	N N N		1
ROCAS	SYS_FK08080021332N00007\$		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	N Y N		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_SUBSTITUTABLE			
TOETALLE	ROCAS	TAB_LISTA_DETALLE	LISTAS_DE_COMPRAS
DETALLE	DEFAULT N	VALUE	
TABLE_NAME	TABLE_TYPE_OWNER	TABLE_TYPE_NAME	PARENT_TABLE_NAME
PARENT_TABLE_COLUMN			
STORAGE_SPEC		RETURN_TYPE	
ELEMENT_SUBSTITUTABLE			
T_HIJOS	ROCAS	TABLA_HIJOS	STAFF
HIJOS	DEFAULT N	VALUE	

```
SELECT * FROM ALL_NESTED_TABLES WHERE TABLE_TYPE_OWNER='ROCAS';
```

OWNER	TABLE_NAME	TABLE_TYPE_OWNER	TABLE_TYPE_NAME
PARENT_TABLE_NAME			
PARENT_TABLE_COLUMN			
STORAGE_SPEC		RETURN_TYPE	
ELEMENT_SUBSTITUTABLE			
ROCAS	TDDETALLE	ROCAS	TAB_LISTA_DETALLE
LISTAS_DE_COMPRAS DETALLE			
DEFAULT N		VALUE	
OWNER	TABLE_NAME	TABLE_TYPE_OWNER	TABLE_TYPE_NAME
PARENT_TABLE_NAME			
PARENT_TABLE_COLUMN			
STORAGE_SPEC		RETURN_TYPE	
ELEMENT_SUBSTITUTABLE			
ROCAS	T_HI30S	ROCAS	TABLA_HI30S
STAFF HI30S			
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=listen(telefono('fijo',9344444444),
telefono('movil personal',65555555),
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	644444444

```

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

```

ID_CLI	TIPO	NUMERO
1	fijo	934444444
1	movil personal	65555555
1	movilempresa	644444444
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 ;

```

ID_CLI	NOMBRE	TIPO	NUMERO
1	RICARDO	fijo	934444444
1	RICARDO	movil personal	65555555
1	RICARDO	movilempresa	644444444
2	RICK	Fijo	965555222
2	RICK	Movil	666123444
2	RICK	Movil	699123566
3	AMANDA	Fijo	965555222
3	AMANDA	Movil	666123444
3	AMANDA	Movil	699123566

9 rows selected.