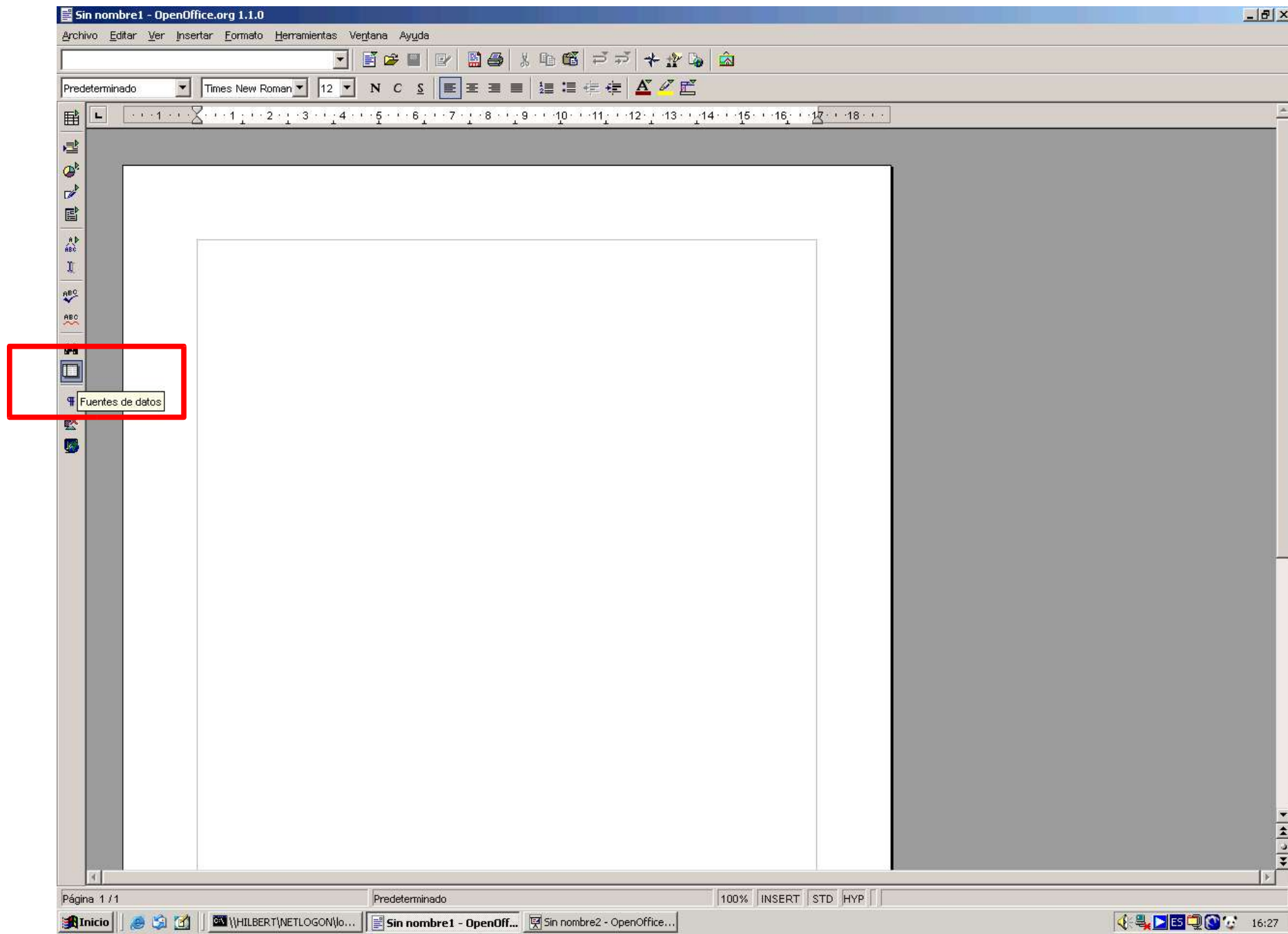


OpenOffice & Postgres

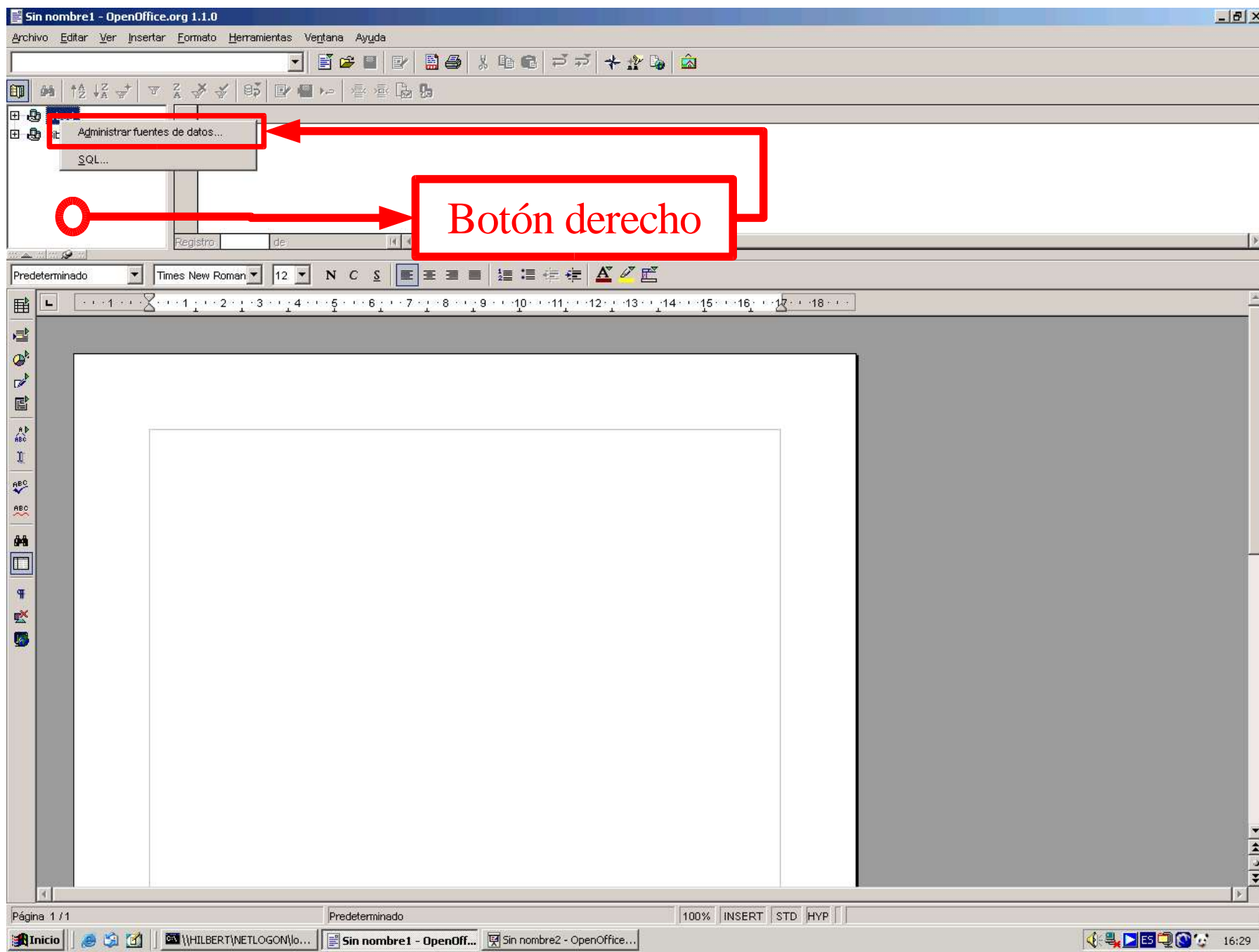
Comprobación de secciones
con ayuda de herramientas informáticas
genéricas y libres.

- I Conexión
- II Creación de bases y tablas
- III Consultas sencillas
- IV Funciones (introducción)

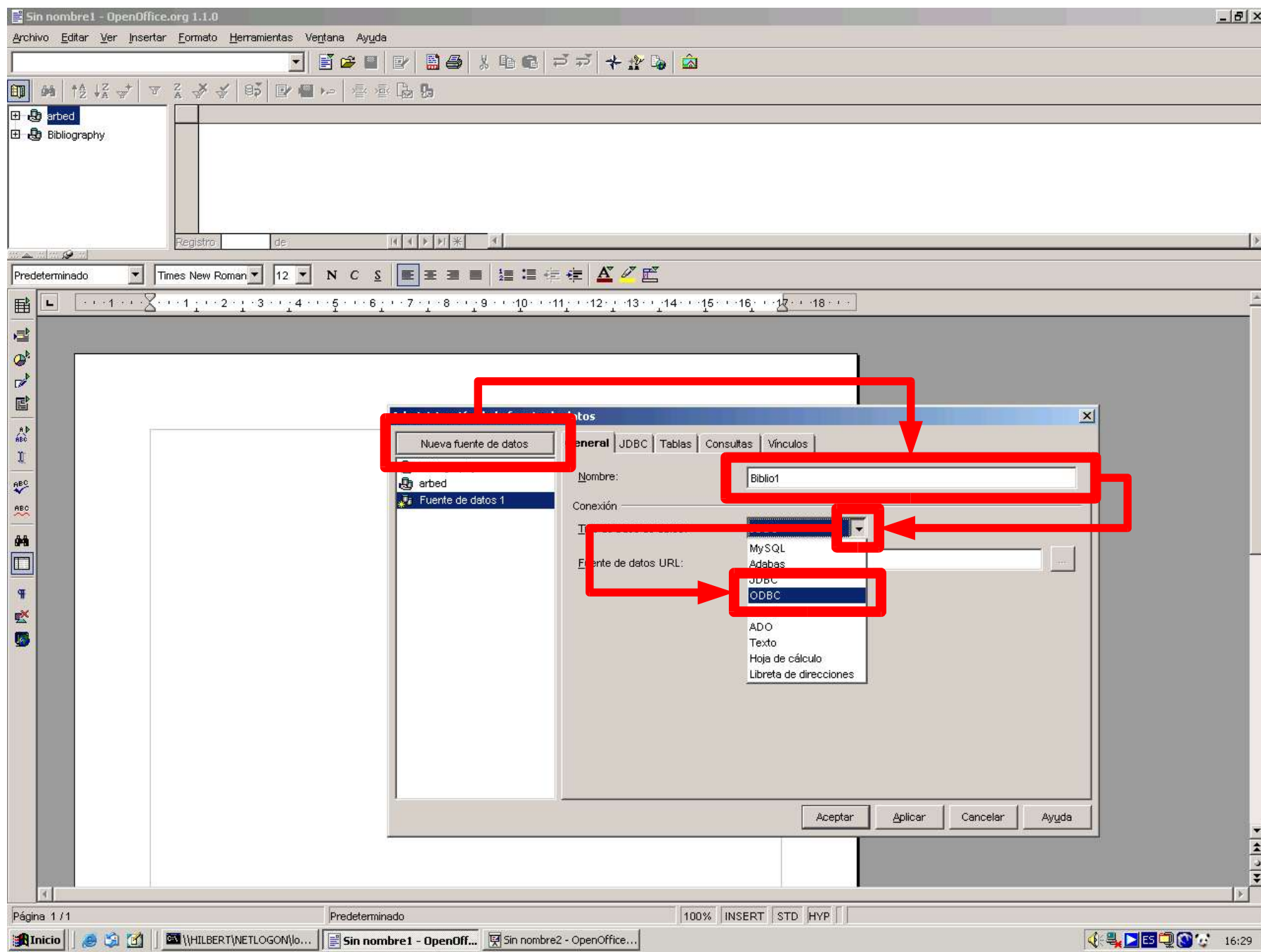
Conexión a la base desde OO



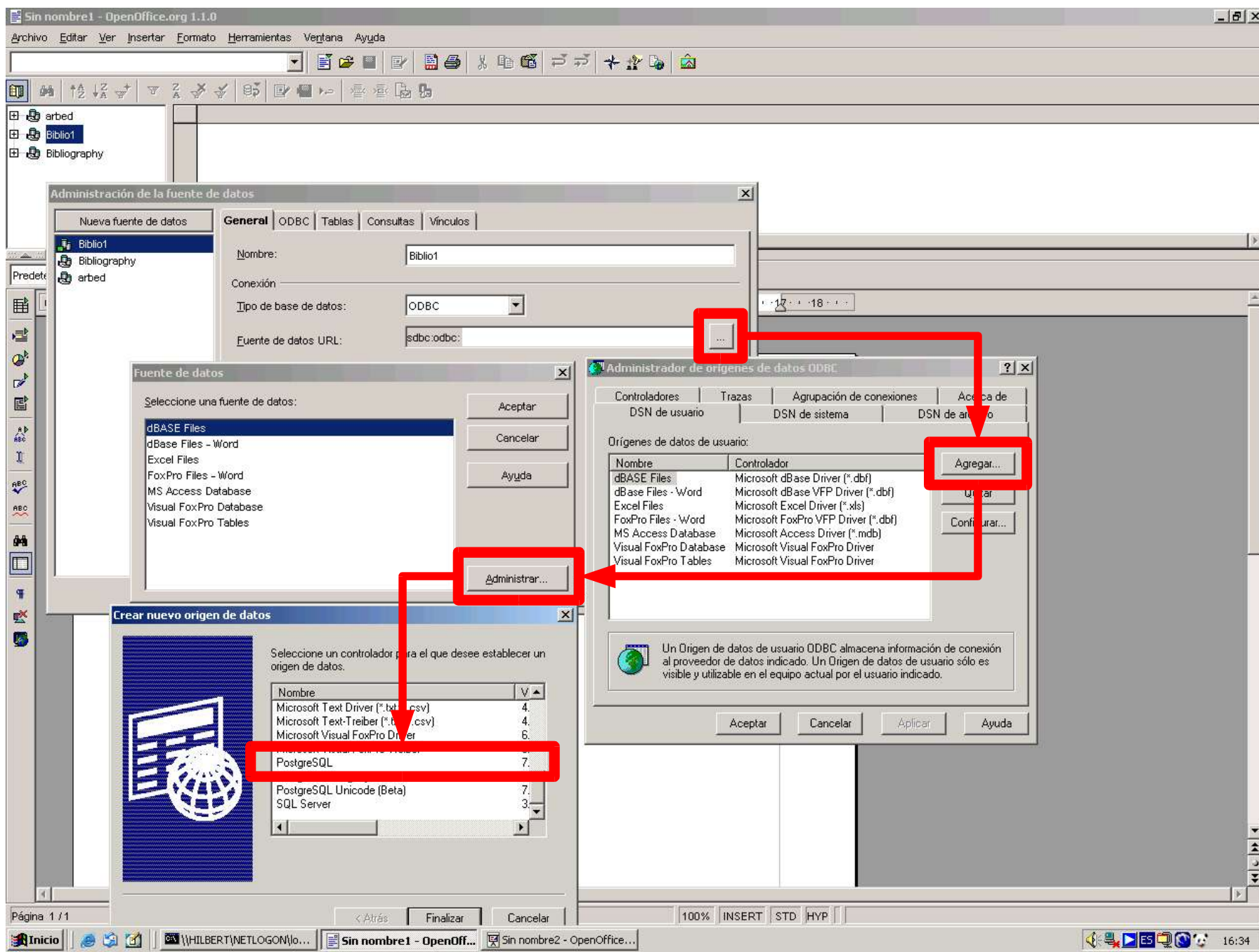
Conexión a la base desde OO



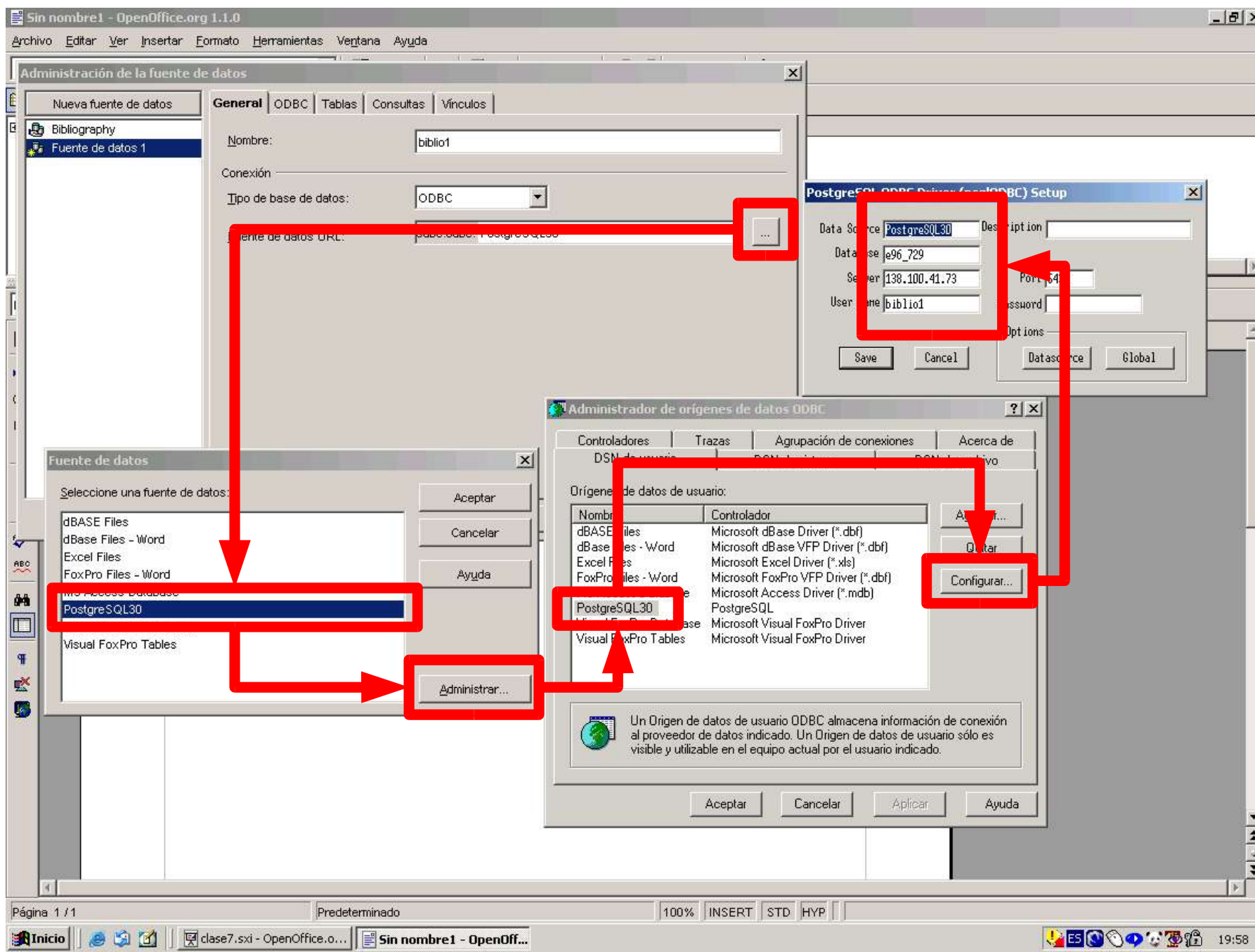
Conexión a la base desde OO



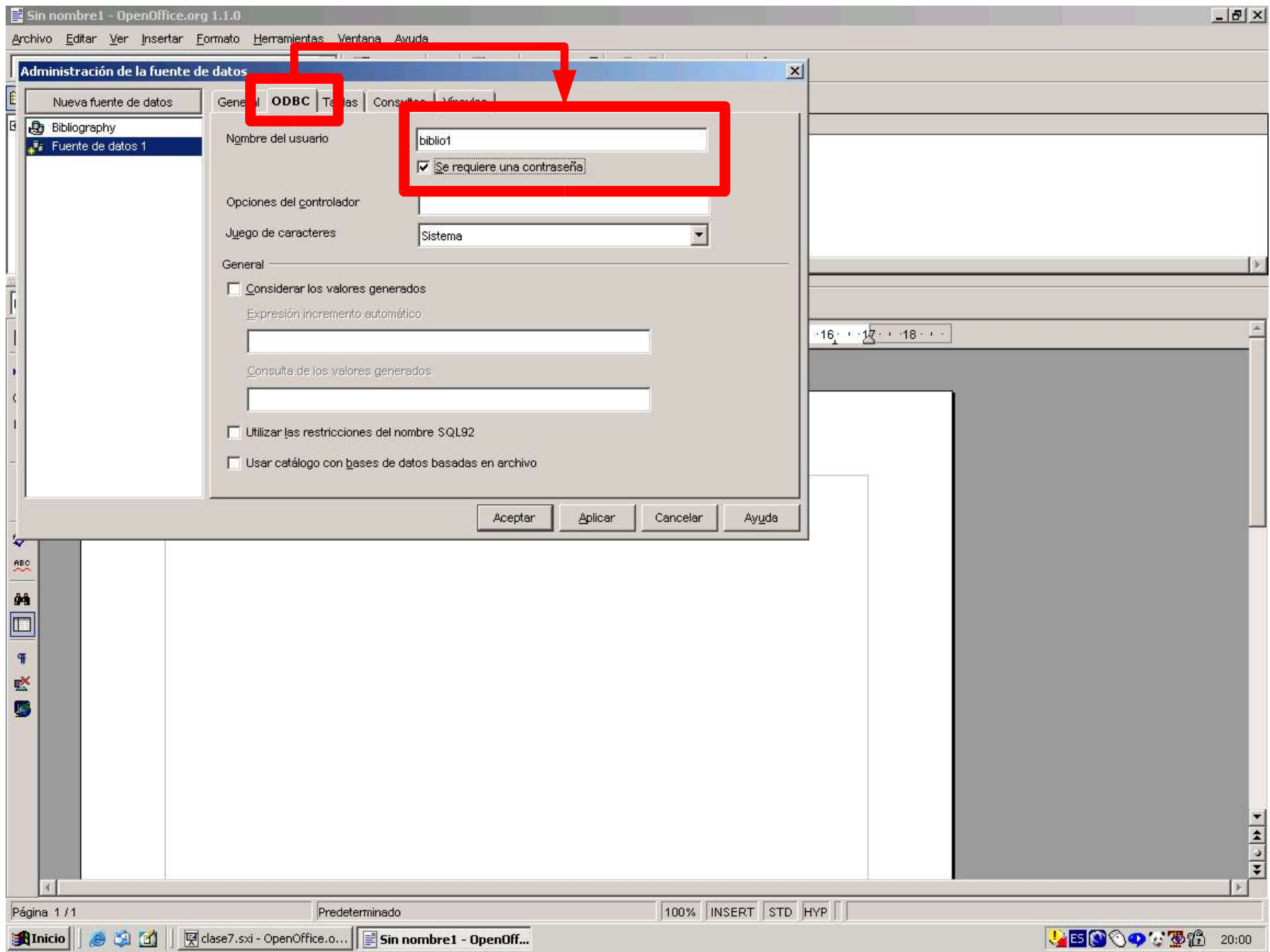
Conexión a la base desde OO



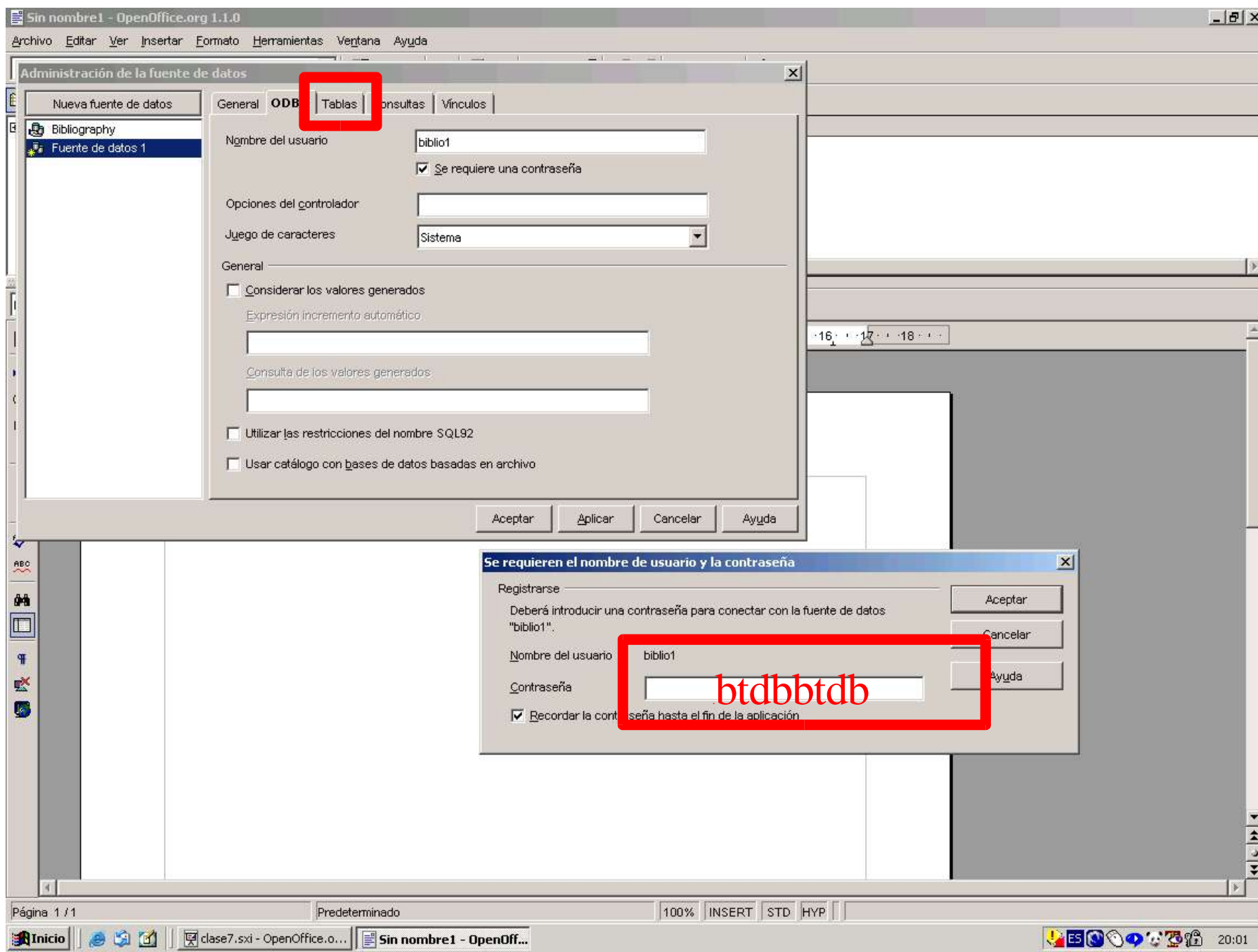
Conexión a la base desde OO



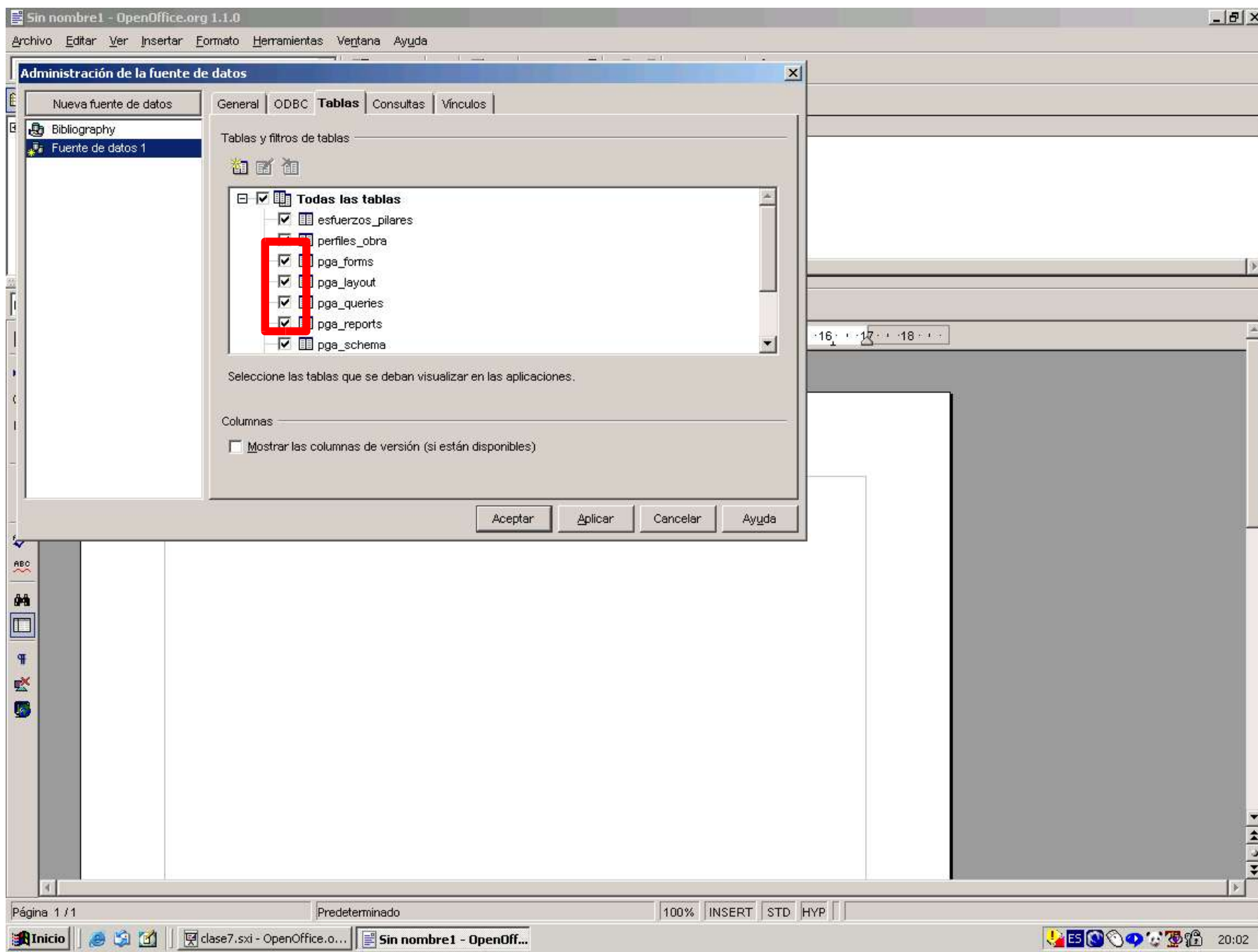
Conexión a la base desde OO



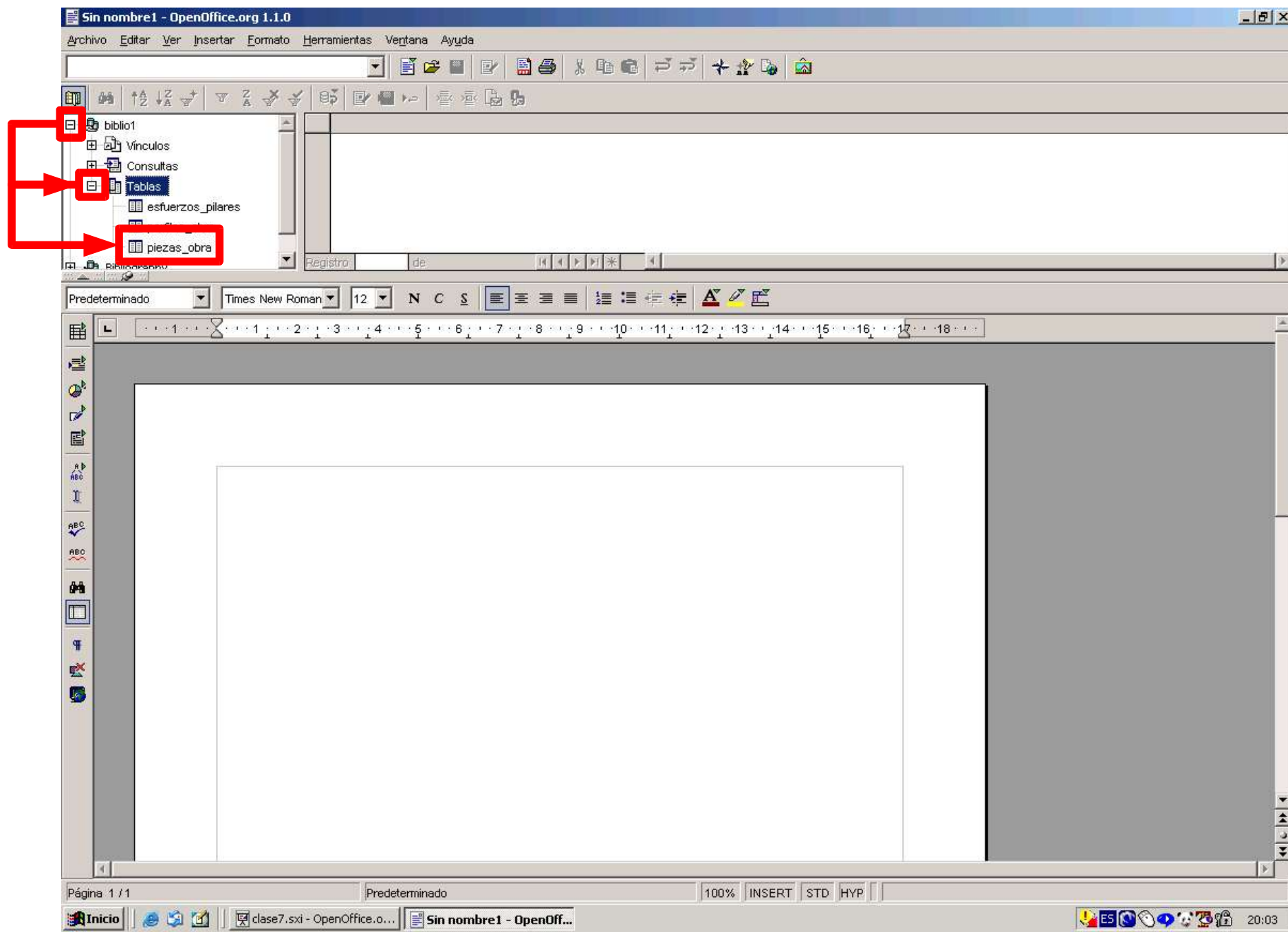
Conexión a la base desde OO



Conexión a la base desde OO



Conexión a la base desde OO

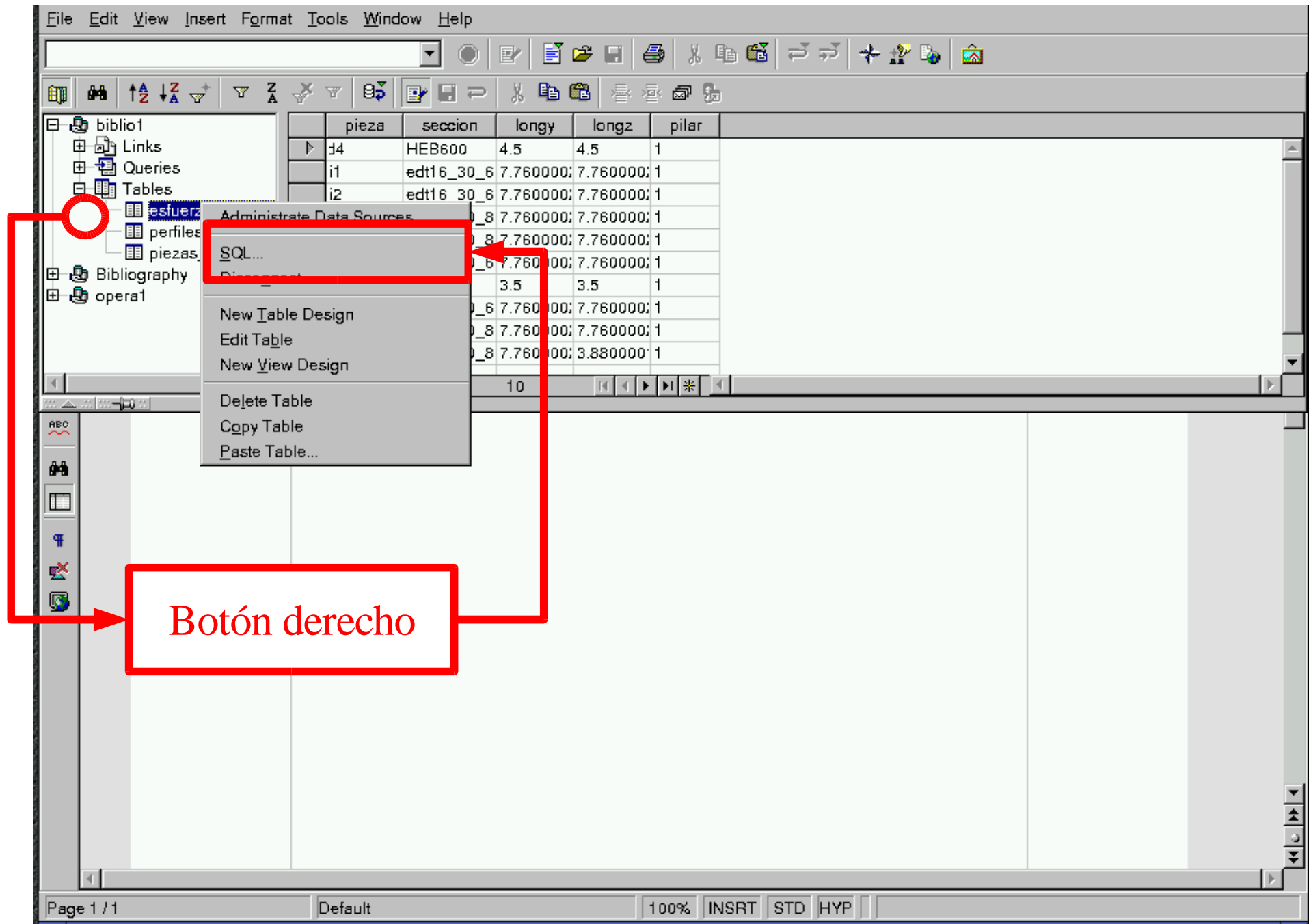


Conexión a la base desde OO

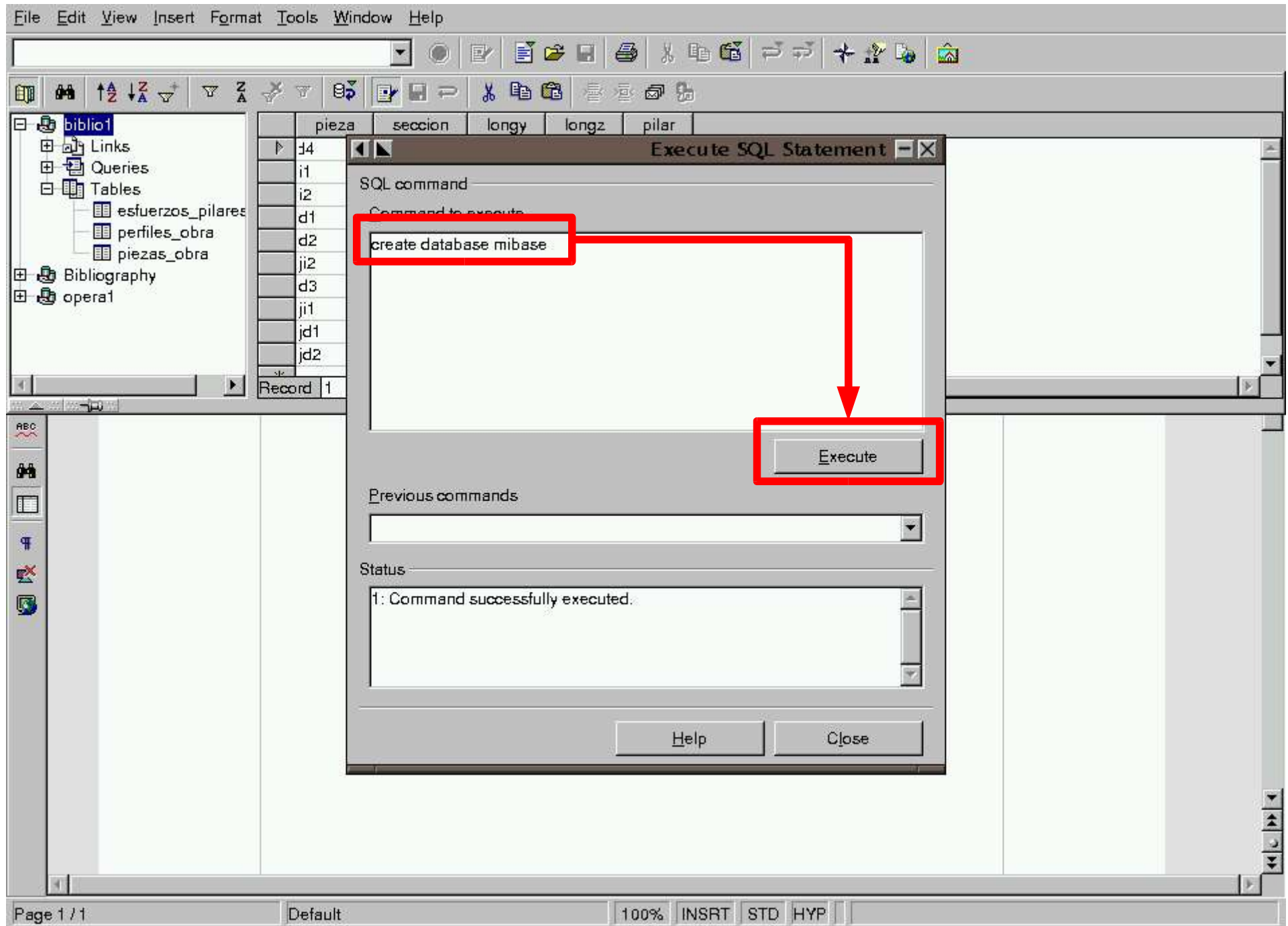
The screenshot displays the OpenOffice Base application interface. The left sidebar shows a project tree for 'biblio1' with folders for 'Links', 'Queries', 'Tables', 'Bibliography', and 'operat1'. Under 'Tables', the 'piezas_obra' table is selected. The main window shows a data table with the following columns: 'pieza', 'seccion', 'longy', 'longz', and 'pilar'. The table contains 10 records. The status bar at the bottom indicates 'Record 1 of 10' and 'Page 1 / 1'.

pieza	seccion	longy	longz	pilar
j4	HEB600	4.5	4.5	1
i1	edt16_30_6	7.760000	7.760000	1
i2	edt16_30_6	7.760000	7.760000	1
d1	edt16_30_8	7.760000	7.760000	1
d2	edt16_30_8	7.760000	7.760000	1
ji2	edt16_30_6	7.760000	7.760000	1
d3	HEM600	3.5	3.5	1
ji1	edt16_30_6	7.760000	7.760000	1
jd1	edt16_30_8	7.760000	7.760000	1
jd2	edt16_30_8	7.760000	3.880000	1

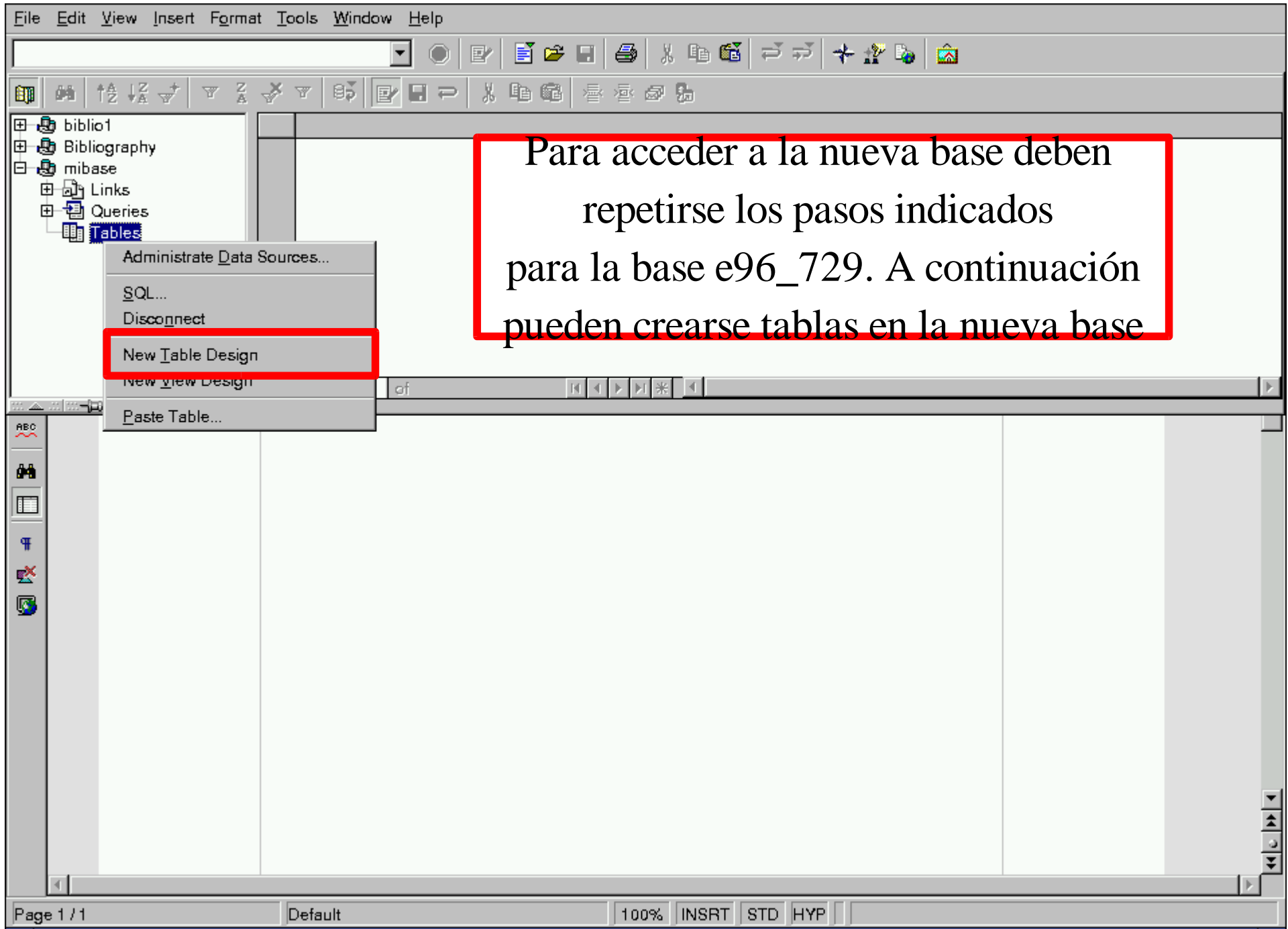
Crear una base nueva



Crear una base nueva



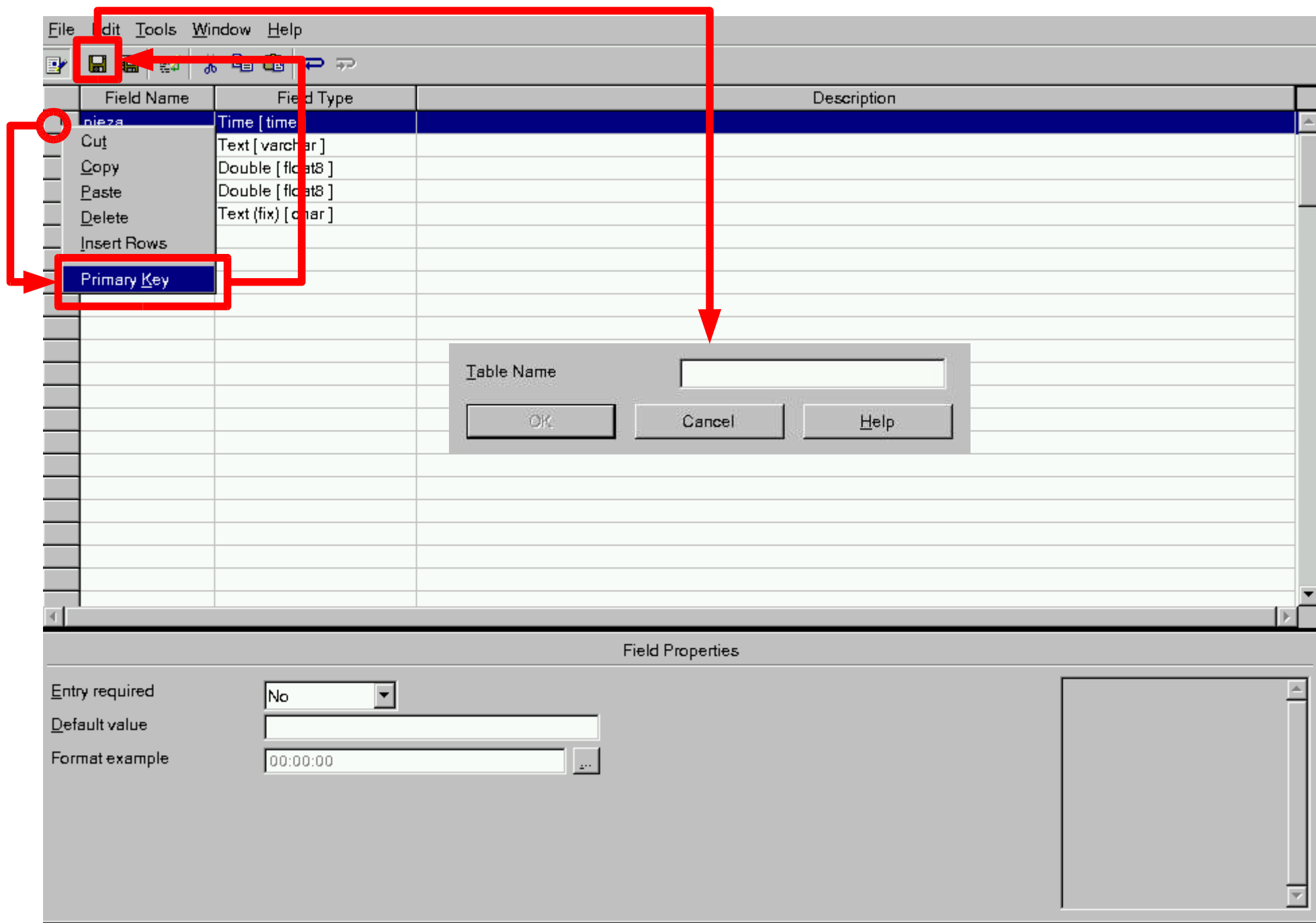
Crear una base nueva. Crear una tabla



Crear una tabla

[illegible]

Crear una tabla



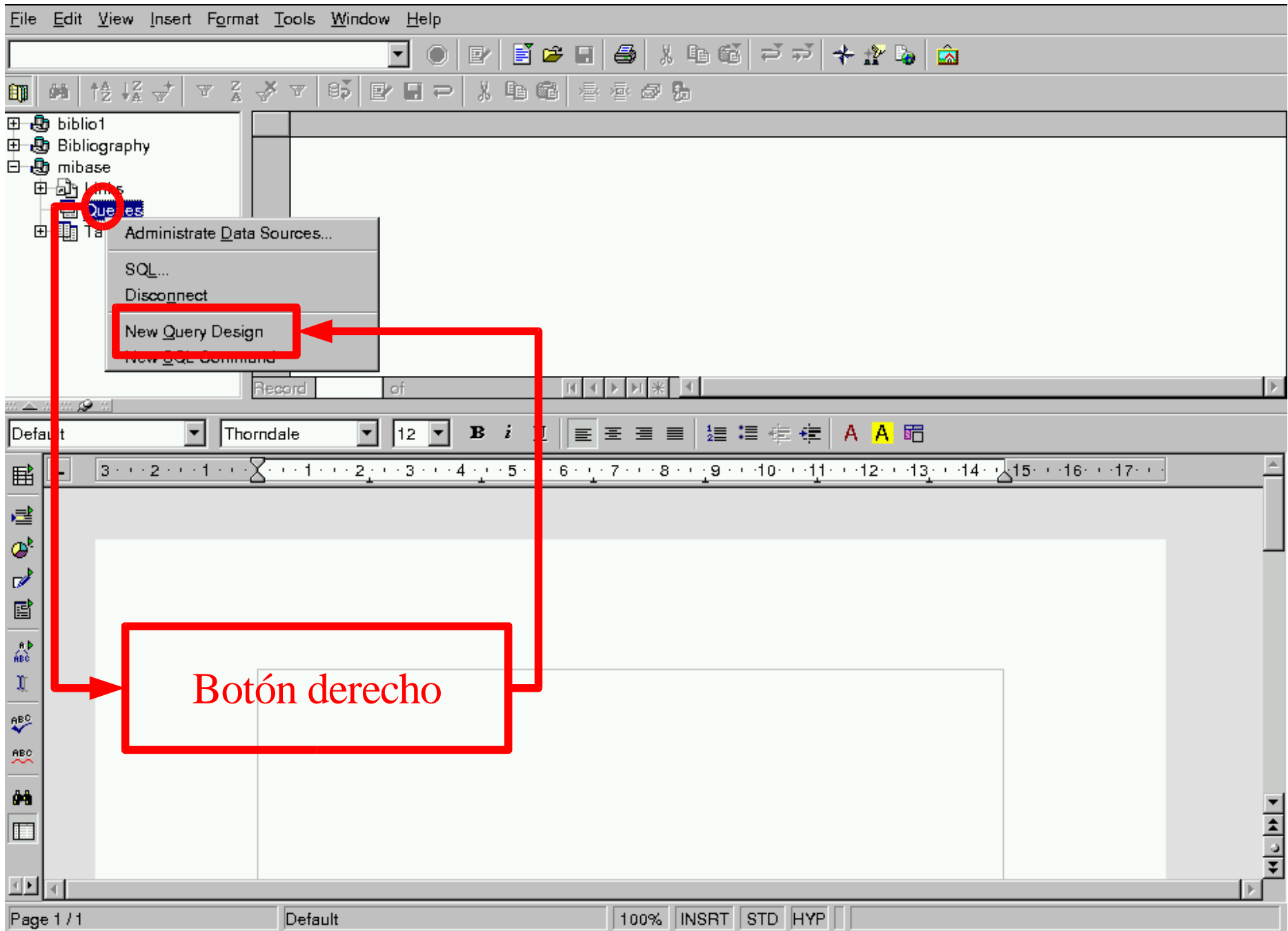
Incluir datos en una tabla

The screenshot displays a database management application window. The menu bar includes File, Edit, View, Insert, Format, Tools, Window, and Help. The toolbar contains various icons for file operations and editing. The left sidebar shows a tree view of the database structure, including 'biblio1' and 'mibase', each with sub-items for Links, Queries, and Tables. The 'piezas_obra' table is selected under both 'biblio1' and 'mibase'. The main area shows a table with the following data:

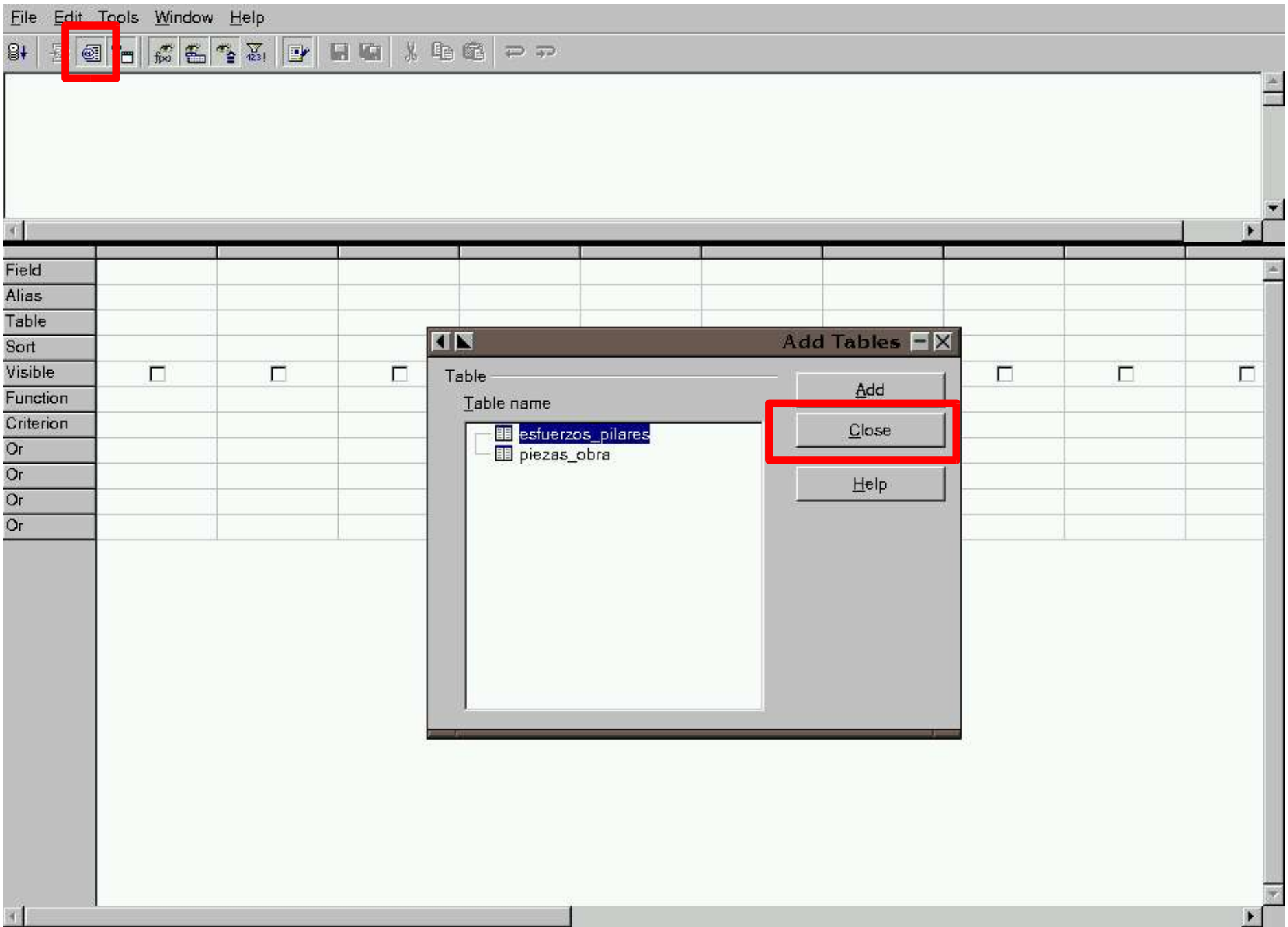
pieza	seccion	longz	longy	pilar
p1	HB300	5.0	6.5	1

The table is highlighted with a red border. The status bar at the bottom indicates 'Record 2 of 2'. The bottom of the window shows the page number 'Page 1 / 1', the default view, and zoom settings '100% INSRT STD HYP'.

Consultas a la base: Crear una tabla



Consultas a la base: Crear una tabla



Consultas a la base: Crear una tabla

File Edit Tools Window Help



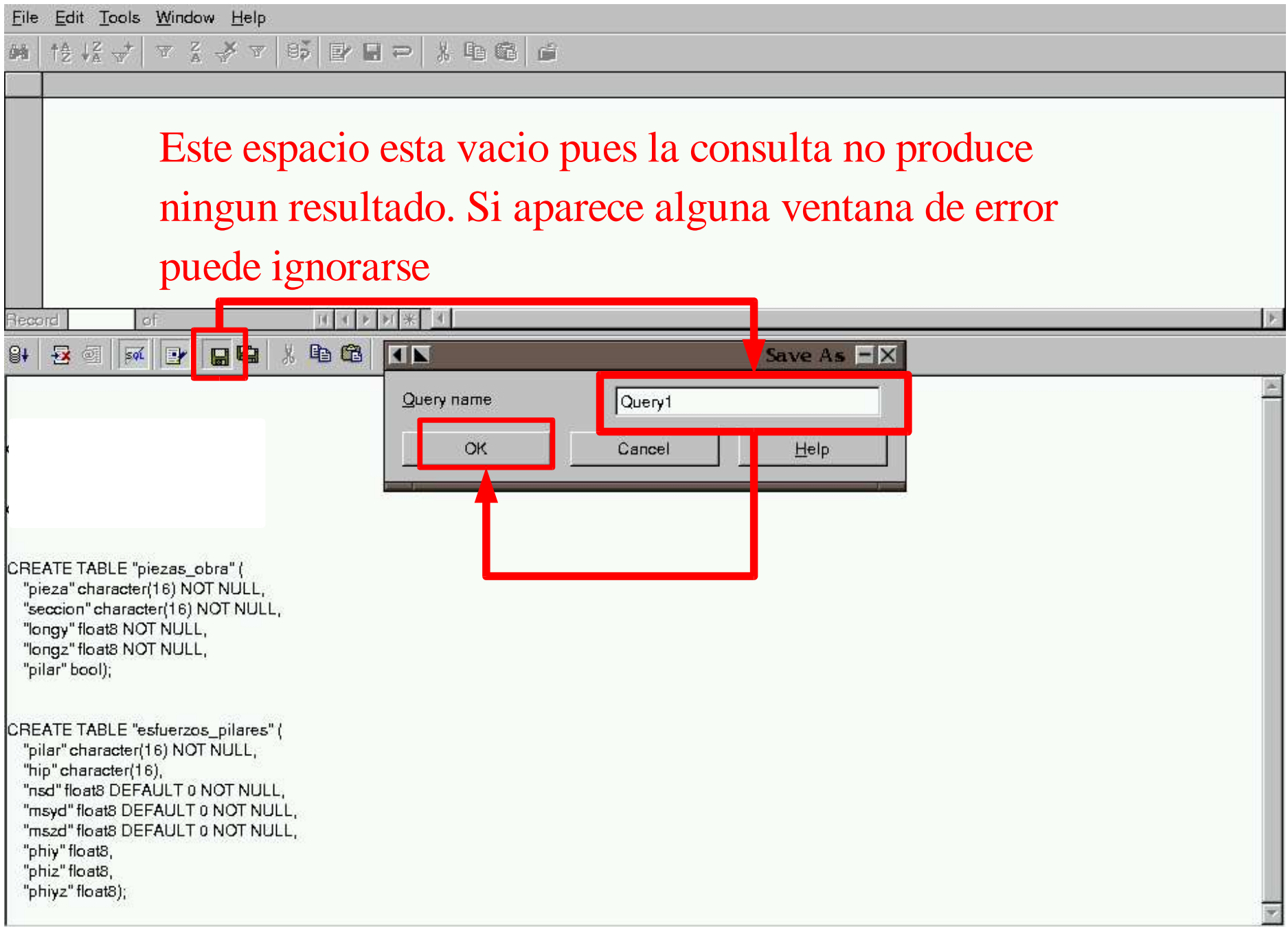
```
CREATE TABLE "piezas_obra" {  
  "pieza" character(16) NOT NULL,  
  "seccion" character(16) NOT NULL,  
  "longy" float8 NOT NULL,  
  "longz" float8 NOT NULL,  
  "pilar" bool};  
  
CREATE TABLE "esfuerzos_pilares" {  
  "pilar" character(16) NOT NULL,  
  "hip" character(16),  
  "nsd" float8 DEFAULT 0 NOT NULL,  
  "msyd" float8 DEFAULT 0 NOT NULL,  
  "mszd" float8 DEFAULT 0 NOT NULL,  
  "phiy" float8,  
  "phiz" float8,  
  "phiyz" float8};
```

SQL:

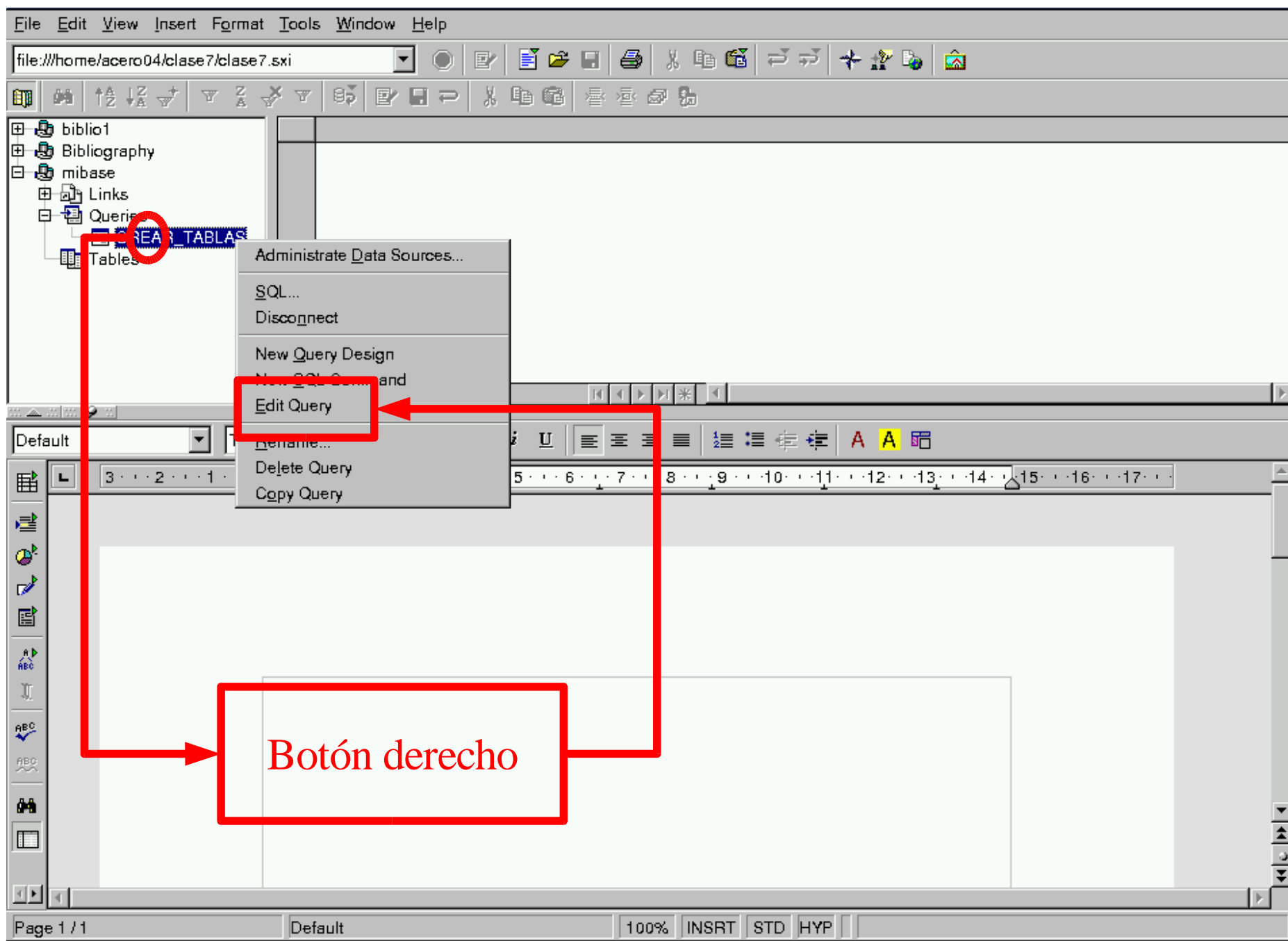
```
CREATE [ [ LOCAL ] { TEMPORARY | TEMP } ]  
      TABLE table_name (  
    { column_name data_type [ DEFAULT default_expr ]  
      [ column_constraint [, ... ] ]  
    | table_constraint } [, ... ]  
  )  
[ INHERITS ( parent_table [, ... ] ) ]  
[ WITH OIDS | WITHOUT OIDS ]
```


Grabar la consulta

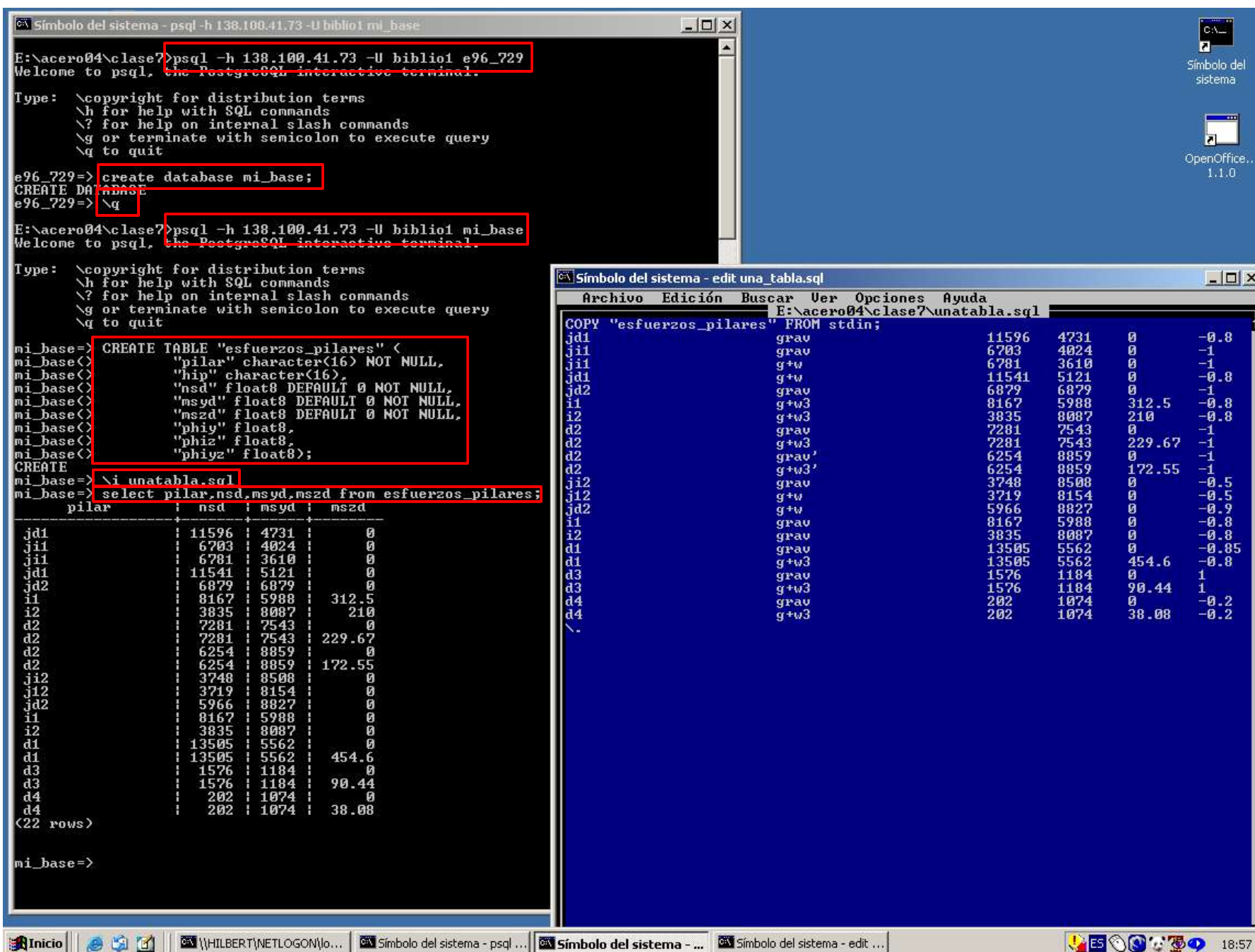
Este espacio esta vacio pues la consulta no produce ningun resultado. Si aparece alguna ventana de error puede ignorarse



Reciclado de una consulta (sostenibilidad)



Incluir datos en una tabla



Símbolo del sistema - psql -h 138.100.41.73 -U bibliot mi_base

```
E:\acero04\clase7>psql -h 138.100.41.73 -U bibliot e96_729
Welcome to psql, the PostgreSQL interactive terminal.

Type: \copyright for distribution terms
      \h for help with SQL commands
      \? for help on internal slash commands
      \g or terminate with semicolon to execute query
      \q to quit

e96_729=> create database mi_base;
CREATE DATABASE
e96_729=> \q

E:\acero04\clase7>psql -h 138.100.41.73 -U bibliot mi_base
Welcome to psql, the PostgreSQL interactive terminal.

Type: \copyright for distribution terms
      \h for help with SQL commands
      \? for help on internal slash commands
      \g or terminate with semicolon to execute query
      \q to quit

mi_base=> CREATE TABLE "esfuerzos_pilares" (
mi_base(< "pilar" character(16) NOT NULL,
mi_base(< "hip" character(16),
mi_base(< "nsd" float8 DEFAULT 0 NOT NULL,
mi_base(< "msyd" float8 DEFAULT 0 NOT NULL,
mi_base(< "mszd" float8 DEFAULT 0 NOT NULL,
mi_base(< "phiz" float8,
mi_base(< "phiz2" float8,
mi_base(< "phiz3" float8);
CREATE
mi_base=> \i unatabla.sql
mi_base=> select pilar,nsd,msyd,mszd from esfuerzos_pilares;
pilar      | nsd      | msyd      | mszd
-----+-----+-----+-----
jd1         | 11596    | 4731      | 0
ji1         | 6703     | 4024      | 0
ji1         | 6781     | 3610      | 0
jd1         | 11541    | 5121      | 0
jd2         | 6879     | 6879      | 0
i1          | 8167     | 5988      | 312.5
i2          | 3835     | 8087      | 210
d2          | 7281     | 7543      | 0
d2          | 7281     | 7543      | 229.67
d2          | 6254     | 8859      | 0
d2          | 6254     | 8859      | 172.55
ji2         | 3748     | 8508      | 0
ji2         | 3719     | 8154      | 0
jd2         | 5966     | 8827      | 0
i1          | 8167     | 5988      | 0
i2          | 3835     | 8087      | 0
d1          | 13505    | 5562      | 0
d1          | 13505    | 5562      | 454.6
d3          | 1576     | 1184      | 0
d3          | 1576     | 1184      | 90.44
d4          | 202      | 1074      | 0
d4          | 202      | 1074      | 38.08
<22 rows>

mi_base=>
```

Símbolo del sistema - edit una_tabla.sql

```
Archivo Edición Buscar Ver Opciones Ayuda
E:\acero04\clase7\unatabla.sql
COPY "esfuerzos_pilares" FROM stdin;
jd1         grav          11596  4731    0      -0.8
ji1         grav          6703   4024    0      -1
ji1         g+w          6781   3610    0      -1
jd1         g+w          11541  5121    0      -0.8
jd2         grav          6879   6879    0      -1
i1          g+w3         8167   5988    312.5  -0.8
i2          g+w3         3835   8087    210    -0.8
d2          grav         7281   7543    0      -1
d2          g+w3         7281   7543    229.67 -1
d2          grav         6254   8859    0      -1
d2          g+w3         6254   8859    172.55 -1
ji2         grav         3748   8508    0      -0.5
ji2         g+w         3719   8154    0      -0.5
jd2         grav         5966   8827    0      -0.9
i1          grav         8167   5988    0      -0.8
i2          grav         3835   8087    0      -0.8
d1          grav         13505  5562    0      -0.85
d1          g+w3         13505  5562    454.6  -0.8
d3          grav         1576   1184    0      1
d3          g+w3         1576   1184    90.44  1
d4          grav         202    1074    0      -0.2
d4          g+w3         202    1074    38.08  -0.2
\.
```

Incluir datos en una tabla

The screenshot displays a database application window. On the left, a sidebar shows a tree view with folders: 'bibliot', 'Bibliography', 'mibase', 'Links', 'Queries', and 'Tables'. Under 'Tables', the table 'esfuerzos_pilares' is selected. The main area shows a table with the following data:

	pilar	hip	nsd	msyd	mszd	phiy	phiz	phiyz
▶	jd1	grav	11596.0	4731.0	0.0	-0.80000	-1.0	0.0
	ji1	grav	6703.0	4024.0	0.0	-1.0	-1.0	-1.0
	ji1	g+w	6781.0	3610.0	0.0	-1.0	-1.0	-1.0
	jd1	g+w	11541.0	5121.0	0.0	-0.80000	-1.0	0.0
	jd2	grav	6879.0	6879.0	0.0	-1.0	-1.0	-1.0
	i1	g+w3	8167.0	5988.0	312.5	-0.80000	-0.75	-0.80000
	i2	g+w3	3835.0	8087.0	210.0	-0.80000	-0.75	-0.80000
	d2	grav	7281.0	7543.0	0.0	-1.0	-1.0	-1.0
	d2	g+w3	7281.0	7543.0	229.6699	-1.0	-0.75	-1.0
	d2	grav'	6254.0	8859.0	0.0	-1.0	-1.0	-1.0
	d2	g+w3'	6254.0	8859.0	172.55	-1.0	-0.75	-1.0
	ji2	grav	3748.0	8508.0	0.0	-0.5	-1.0	-0.5
	j12	g+w	3719.0	8154.0	0.0	-0.5	-1.0	-0.5
	jd2	g+w	5966.0	8827.0	0.0	-0.89999	-1.0	-0.89999
	i1	grav	8167.0	5988.0	0.0	-0.80000	-1.0	-0.80000
	i2	grav	3835.0	8087.0	0.0	-0.80000	-1.0	-0.80000
	d1	grav	13505.0	5562.0	0.0	-0.85000	-1.0	0.0

The status bar at the bottom indicates 'Record 1 of 22'. The application also features a menu bar (File, Edit, View, Insert, Format, Tools, Window, Help) and a toolbar with various icons. The status bar at the bottom shows 'Page 1 / 1', 'Default', '100%', 'INSRT', 'STD', and 'HYP'.

Consultas a una base de datos „real“

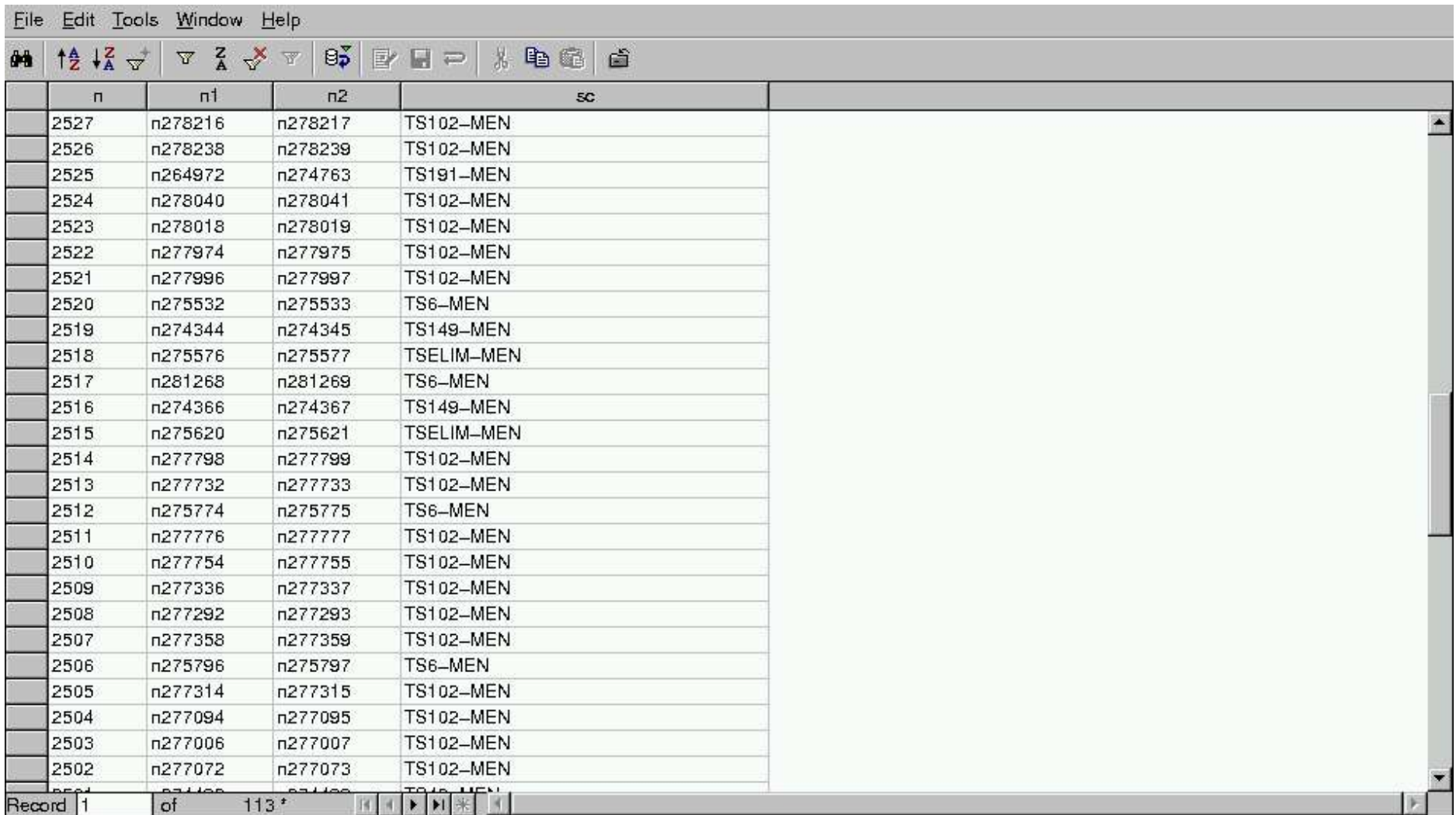
The screenshot shows a database application interface with a menu bar (File, Edit, View, Insert, Format, Tools, Window, Help), a toolbar, and a left sidebar with a tree view containing folders like 'bibliot', 'Bibliography', 'CTO3D-04', 'Links', 'Queries', 'Tables', and 'mibase'. The main area displays a table with 10 columns: barra, abs, axil, torsor, corty, flecx, cortx, flecy, and combi. The table contains numerous rows of numerical data. A red box highlights the record number 532611 in the status bar. The bottom of the interface includes a status bar with 'Page 1 / 1', 'Default', '100%', 'INSRT', 'STD', and 'HYP'.

	barra	abs	axil	torsor	corty	flecx	cortx	flecy	combi
2571.0	2.35199	-3.8900	-1.15999	14.09	-14.859	-2.75	2.08999	T3	
2571.0	2.68799	-3.8900	-1.15999	14.09	-19.59	-2.75	3.00999	T3	
2572.0	0.0	-4.579	-0.92000	16.8899	16.75	-3.73	-4.7699	T3	
2572.0	0.26300	-4.579	-0.92000	16.8899	12.31	-3.73	-3.7899	T3	
2572.0	0.52600	-4.579	-0.92000	16.8899	7.86999	-3.73	-2.8099	T3	
2572.0	0.78899	-4.579	-0.92000	16.8899	3.42	-3.73	-1.83	T3	
2572.0	1.052	-4.579	-0.92000	16.8899	-1.0199	-3.73	-0.8500	T3	
2572.0	1.31599	-4.579	-0.92000	16.8899	-5.46	-3.73	0.12999	T3	
2572.0	1.57899	-4.579	-0.92000	16.8899	-9.8999	-3.73	1.11	T3	
2572.0	1.842	-4.579	-0.92000	16.8899	-14.35	-3.73	2.08999	T3	
2572.0	2.105	-4.579	-0.92000	16.8899	-18.79	-3.73	3.06999	T3	
2573.0	0.0	-2.009	-1.37	5.86999	3.86999	-2.6400	-2.8199	T3	
2573.0	0.18799	-2.009	-1.37	5.86999	2.75999	-2.6400	-2.3299	T3	
2573.0	0.377	-2.009	-1.37	5.86999	1.64999	-2.6400	-1.83	T3	
2573.0	0.56499	-2.009	-1.37	5.86999	0.55000	-2.6400	-1.33	T3	
2573.0	0.75300	-2.009	-1.37	5.86999	-0.56	-2.6400	-0.8299	T3	
2573.0	0.94199	-2.009	-1.37	5.86999	-1.6699	-2.6400	-0.34	T3	
2573.0	1.12999	-2.009	-1.37	5.86999	-2.7699	-2.6400	0.15999	T3	
2573.0	1.31799	-2.009	-1.37	5.86999	-3.8800	-2.6400	0.66000	T3	
2573.0	1.50699	-2.009	-1.37	5.86999	-4.98	-2.6400	1.15999	T3	

Record 532,611 of 532611

Base con centenares de miles de filas

Consultas a una base de datos „real“



	n	n1	n2	sc
	2527	n278216	n278217	TS102-MEN
	2526	n278238	n278239	TS102-MEN
	2525	n264972	n274763	TS191-MEN
	2524	n278040	n278041	TS102-MEN
	2523	n278018	n278019	TS102-MEN
	2522	n277974	n277975	TS102-MEN
	2521	n277996	n277997	TS102-MEN
	2520	n275532	n275533	TS6-MEN
	2519	n274344	n274345	TS149-MEN
	2518	n275576	n275577	TSELIM-MEN
	2517	n281268	n281269	TS6-MEN
	2516	n274366	n274367	TS149-MEN
	2515	n275620	n275621	TSELIM-MEN
	2514	n277798	n277799	TS102-MEN
	2513	n277732	n277733	TS102-MEN
	2512	n275774	n275775	TS6-MEN
	2511	n277776	n277777	TS102-MEN
	2510	n277754	n277755	TS102-MEN
	2509	n277336	n277337	TS102-MEN
	2508	n277292	n277293	TS102-MEN
	2507	n277358	n277359	TS102-MEN
	2506	n275796	n275797	TS6-MEN
	2505	n277314	n277315	TS102-MEN
	2504	n277094	n277095	TS102-MEN
	2503	n277006	n277007	TS102-MEN
	2502	n277072	n277073	TS102-MEN

Select n,n1,n2,sc from barra;

Consulta „global“ de una tabla

Consultas a una base de datos „real“

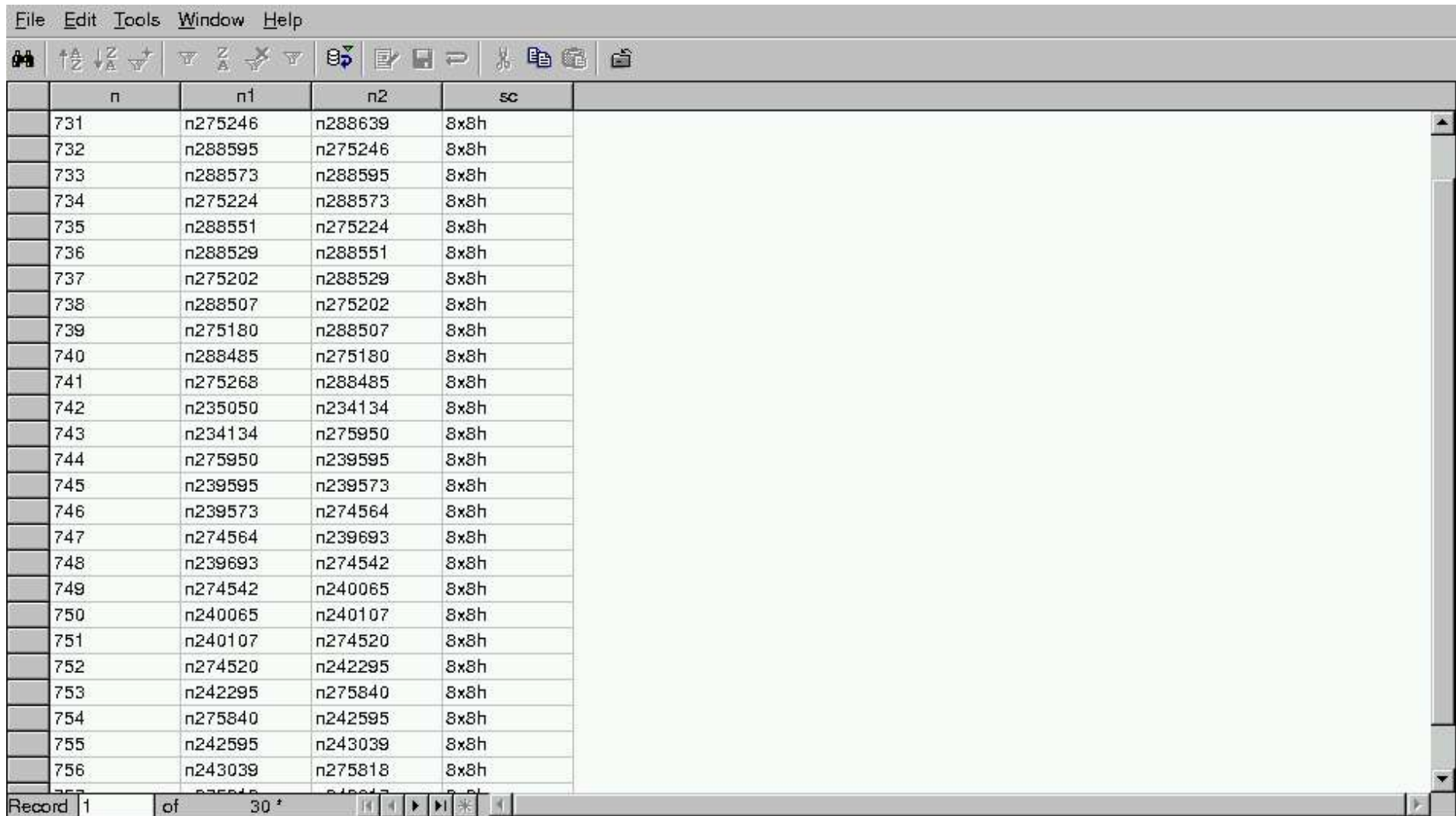
	n	n1	n2	sc
597	n234200	n234201	TS6-8x8	
598	n234134	n234135	TS6-8x8	
599	n275950	n238041	TS6-8x8	
600	n275950	n237393	TS6-8x8	
601	n274696	n238085	TS48-8x8	
602	n274564	n274696	TS48-8x8	
603	n274564	n274718	TS48-8x8	
604	n274718	n274586	TS48-8x8	
605	n274586	n252630	TS48-8x8	
606	n280882	n252630	TS48-8x8	
607	n274674	n238107	TS48-8x8	
608	n274542	n274674	TS48-8x8	
609	n274542	n274608	TS48-8x8	
610	n274608	n274300	TS48-8x8	
611	n274300	n252631	TS48-8x8	
612	n252631	n258061	TS48-8x8	
613	n280826	n258061	TS48-8x8	
614	n238062	n274652	TS48-8x8	
615	n274652	n274520	TS48-8x8	
616	n274520	n274630	TS48-8x8	
617	n274630	n274498	TS48-8x8	
618	n274498	n250486	TS48-8x8	
619	n250486	n257357	TS48-8x8	
620	n257357	n257113	TS48-8x8	
621	n257113	n280798	TS48-8x8	
622	n240754	n275928	TS6-8x8	

Record 1 of 343

Select n,n1,n2,sc from barra where sc~'8x8';

Barras de la trama de 8x8

Consultas a una base de datos „real“



	n	n1	n2	sc
	731	n275246	n288639	8x8h
	732	n288595	n275246	8x8h
	733	n288573	n288595	8x8h
	734	n275224	n288573	8x8h
	735	n288551	n275224	8x8h
	736	n288529	n288551	8x8h
	737	n275202	n288529	8x8h
	738	n288507	n275202	8x8h
	739	n275180	n288507	8x8h
	740	n288485	n275180	8x8h
	741	n275268	n288485	8x8h
	742	n235050	n234134	8x8h
	743	n234134	n275950	8x8h
	744	n275950	n239595	8x8h
	745	n239595	n239573	8x8h
	746	n239573	n274564	8x8h
	747	n274564	n239693	8x8h
	748	n239693	n274542	8x8h
	749	n274542	n240065	8x8h
	750	n240065	n240107	8x8h
	751	n240107	n274520	8x8h
	752	n274520	n242295	8x8h
	753	n242295	n275840	8x8h
	754	n275840	n242595	8x8h
	755	n242595	n243039	8x8h
	756	n243039	n275818	8x8h

```
Select n,n1,n2,sc from barra  
where sc~'8x8' and sc~'h';
```

Barras horizontales de la trama de 8x8

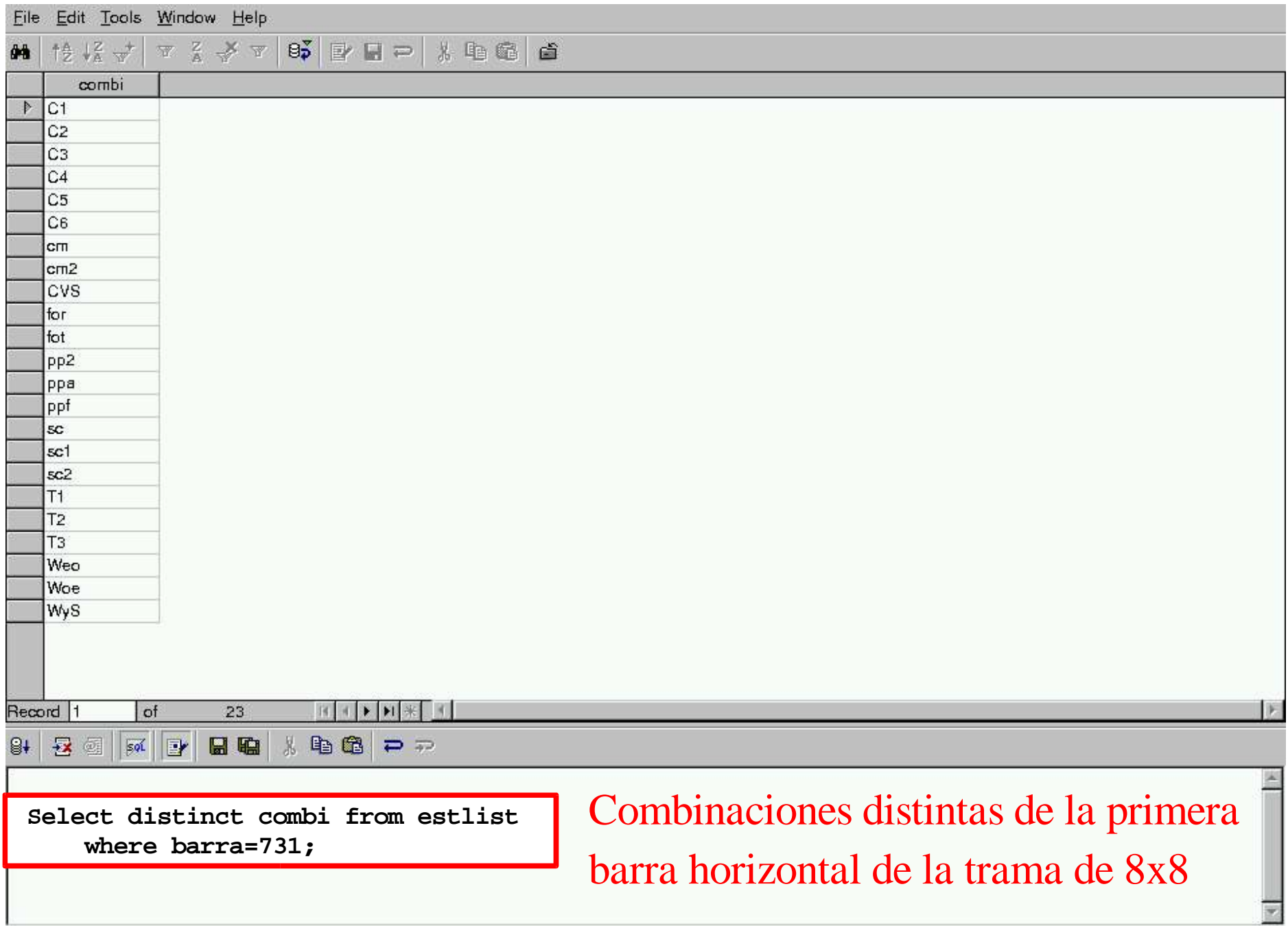
Consultas a una base de datos „real“

	barra	abs	axil	torsor	corty	flecx	cortx	flecy	combi
731.0	3.025	-0.02999999	0.0	0.0	0.0	0.0	0.02999999	-0.01999999	pp2
731.0	5.2940001	0.86000001	0.0	-0.05	0.05	-0.05999999	0.15999999	T3	
731.0	6.0500001	-0.01999999	0.0	0.0	0.0	0.03999999	-0.15	for	
731.0	3.7809998	0.86000001	0.0	-0.05	-0.02999999	-0.05999999	0.07999999	T3	
731.0	0.0	-0.37999999	0.00999999	-0.88999998	-1.2	0.00999999	0.02999999	ppa	
731.0	4.5370001	-172.75	-0.02999999	-0.37	-0.82999998	-0.00999999	-0.01999999	T2	
731.0	5.2940001	-0.01999999	0.0	0.0	0.0	0.03999999	-0.11999999	for	
731.0	3.7809998	-172.75	-0.02999999	-0.37	-1.11	-0.00999999	-0.01999999	T2	
731.0	2.269	-0.02999999	0.0	0.0	0.00999999	0.02999999	0.0	pp2	
731.0	6.0500001	0.86000001	0.0	-0.05	0.1	-0.05999999	0.20999999	T3	
731.0	4.5370001	-0.00999999	-0.15	0.07999999	-0.05999999	0.00999999	0.00999999	for	
731.0	0.0	-172.75	-0.02999999	-0.37	-2.49	-0.00999999	-0.03999999	T2	
731.0	5.2940001	-0.37999999	0.00999999	0.25	0.5	0.00999999	-0.05	ppa	
731.0	2.269	-172.75	-0.02999999	-0.37	-1.6599999	-0.00999999	-0.02999999	T2	
731.0	5.2940001	-0.00999999	-0.15	0.07999999	-0.11999999	0.00999999	0.0	for	
731.0	3.025	-172.75	-0.02999999	-0.37	-1.3899999	-0.00999999	-0.02999999	T2	
731.0	0.75599998	-0.37999999	0.00999999	-0.73000001	-0.58999997	0.00999999	0.01999999	ppa	
731.0	6.0500001	-172.75	-0.02999999	-0.37	-0.28	-0.00999999	-0.00999999	T2	
731.0	3.7809998	-0.00999999	-0.15	0.07999999	0.0	0.00999999	0.01999999	for	
731.0	1.5119999	-172.75	-0.02999999	-0.37	-1.94	-0.00999999	-0.02999999	T2	
731.0	0.0	-0.02999999	0.0	0.0	0.00999999	0.02999999	0.05999999	pp2	
731.0	0.75599998	-172.75	-0.02999999	-0.37	-2.22	-0.00999999	-0.03999999	T2	
731.0	3.025	-0.00999999	-0.15	0.07999999	0.07	0.00999999	0.01999999	for	
731.0	5.2940001	-172.75	-0.02999999	-0.37	-0.56	-0.00999999	-0.00999999	T2	
731.0	2.269	-0.37999999	0.00999999	-0.4	0.27000001	0.00999999	0.0	ppa	
731.0	4.5370001	0.86000001	0.0	-0.05	0.00999999	-0.05999999	0.11999999	T3	

```
Select * from estlist
where barra=731;
```

Solicitaciones de la primera barra horizontal
de la trama de 8x8

Consultas a una base de datos „real“



The screenshot displays a database management application window. The title bar shows the menu: File, Edit, Tools, Window, Help. Below the menu is a toolbar with icons for file operations, editing, and database management. The main area shows a table named 'combi' with 23 records. The records are listed in a column on the left, with the first record being 'C1'. The status bar at the bottom indicates 'Record 1 of 23'. A red box highlights a SQL query in the bottom panel.

```
Select distinct combi from estlist  
where barra=731;
```

Combinaciones distintas de la primera barra horizontal de la trama de 8x8





















































Consultas a una base de datos „real“

	barra	abs	axil	torsor	corty	flecx	cortx	flecy	combi
▶	731.0	0.0	-1.5	-0.12999999	-4.7699999	-6.2199997	0.11999999	0.28	C1
	731.0	0.75599998	-1.5	-0.12999999	-3.8699998	-2.95	0.11999999	0.18999999	C1
	731.0	6.0500001	-1.5	-0.12999999	2.42	0.88999998	0.11999999	-0.46	C1
	731.0	1.5119999	-1.5	-0.12999999	-2.97	-0.37	0.11999999	0.1	C1
	731.0	5.2940001	-1.5	-0.12999999	1.5199999	2.3800001	0.11999999	-0.37	C1
	731.0	4.5370001	-1.5	-0.12999999	0.62	3.19	0.11999999	-0.27000001	C1
	731.0	2.269	-1.5	-0.12999999	-2.0699999	1.5399999	0.11999999	0.00999999	C1
	731.0	3.7809998	-1.5	-0.12999999	-0.28	3.3199999	0.11999999	-0.18	C1
	731.0	3.025	-1.5	-0.12999999	-1.1799999	2.7699999	0.11999999	-0.09	C1
	731.0	1.5119999	-1.5399999	-0.12999999	-2.97	-0.36000001	0.12999999	0.1	C2
	731.0	0.75599998	-1.5399999	-0.12999999	-3.8699998	-2.94	0.12999999	0.2	C2
	731.0	0.0	-1.5399999	-0.12999999	-4.7699999	-6.21	0.12999999	0.30000001	C2
	731.0	6.0500001	-1.5399999	-0.12999999	2.42	0.87999999	0.12999999	-0.49	C2
	731.0	2.269	-1.5399999	-0.12999999	-2.0699999	1.5499999	0.12999999	0.00999999	C2
	731.0	5.2940001	-1.5399999	-0.12999999	1.5199999	2.3800001	0.12999999	-0.38999998	C2
	731.0	3.025	-1.5399999	-0.12999999	-1.1699999	2.7699999	0.12999999	-0.09	C2
	731.0	3.7809998	-1.5399999	-0.12999999	-0.27000001	3.3199999	0.12999999	-0.18999999	C2
	731.0	4.5370001	-1.5399999	-0.12999999	0.62	3.19	0.12999999	-0.28999999	C2
	731.0	6.0500001	-1.4299999	-0.12999999	2.41	0.89999997	0.10999999	-0.40999999	C3
	731.0	5.2940001	-1.4299999	-0.12999999	1.5199999	2.3800001	0.10999999	-0.33000001	C3
	731.0	4.5370001	-1.4299999	-0.12999999	0.62	3.19	0.10999999	-0.25	C3
	731.0	3.7809998	-1.4299999	-0.12999999	-0.28	3.3199999	0.10999999	-0.15999999	C3
	731.0	3.025	-1.4299999	-0.12999999	-1.1799999	2.7599999	0.10999999	-0.07999999	C3
	731.0	2.269	-1.4299999	-0.12999999	-2.0799999	1.5299999	0.10999999	0.00999999	C3
	731.0	0.0	-1.4299999	-0.12999999	-4.7699999	-6.2399997	0.10999999	0.25999999	C3
	731.0	0.75599998	-1.4299999	-0.12999999	-3.8699998	-2.97	0.10999999	0.17	C3

```
Select * from estlist  
where barra=731  
order by combi;
```

Solicitaciones de la barra 731
ordenadas por combinaciones

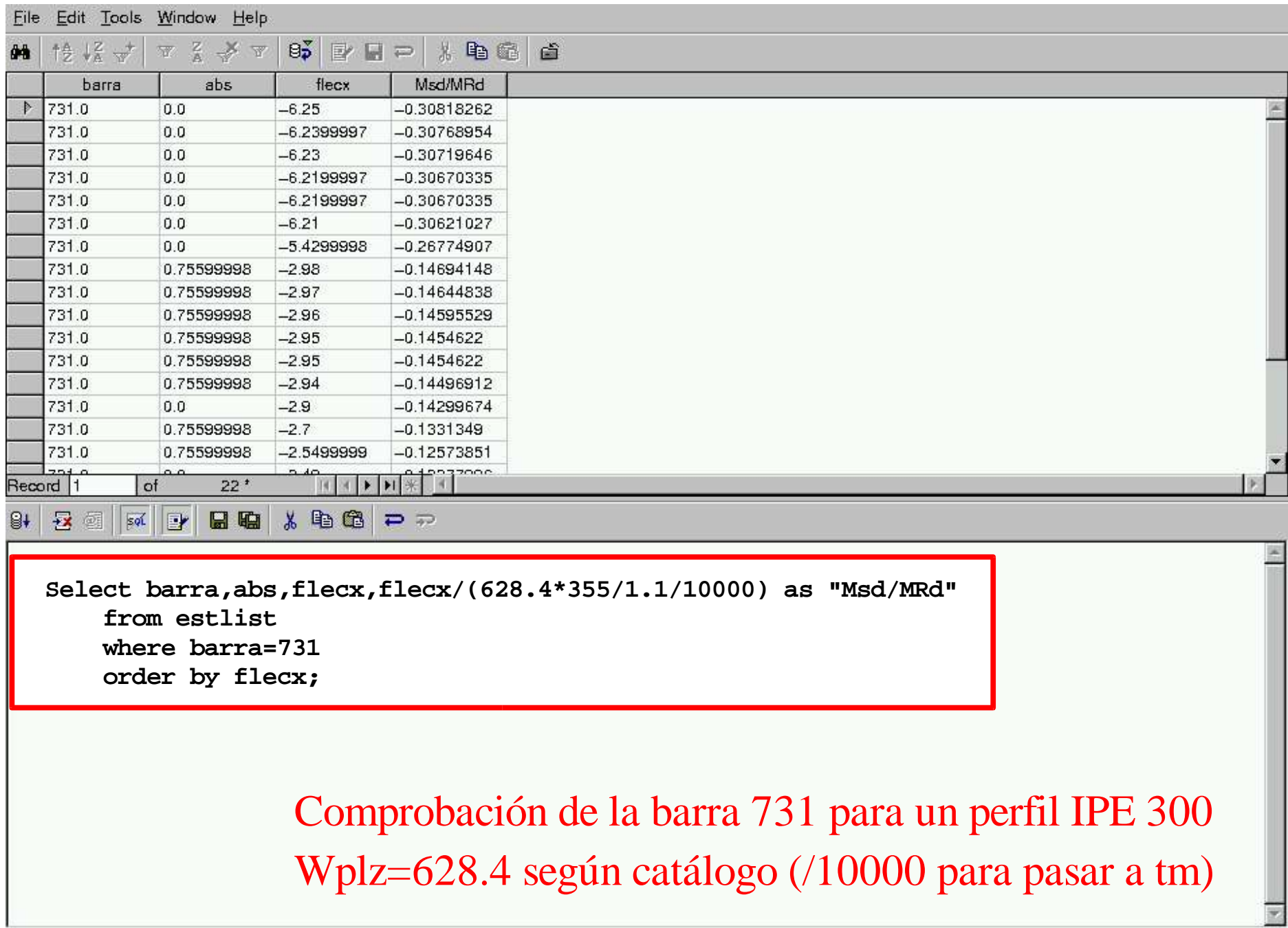
Consultas a una base de datos „real“

File Edit Tools Window Help										
<div><div></div><div></div></div>										
	barra	abs	axil	torsor	corty	flecx	cortx	flecy	combi	
731.0	0.0	-1.3899999	-0.12999999	-4.7800002	-6.25	0.10999999	0.25999999	C6		
731.0	0.0	-1.4299999	-0.12999999	-4.7699999	-6.2399997	0.10999999	0.25999999	C3		
731.0	0.0	-1.45	-0.12999999	-4.7699999	-6.23	0.11999999	0.28999999	C4		
731.0	0.0	-1.49	-0.12999999	-4.7699999	-6.2199997	0.12999999	0.30000001	C5		
731.0	0.0	-1.5	-0.12999999	-4.7699999	-6.2199997	0.11999999	0.28	C1		
731.0	0.0	-1.5399999	-0.12999999	-4.7699999	-6.21	0.12999999	0.30000001	C2		
731.0	0.0	-0.81	0.00999999	-3.98	-5.4299998	0.0	-0.01999999	CVS		
731.0	0.75599998	-1.3899999	-0.12999999	-3.8800001	-2.98	0.10999999	0.17	C6		
731.0	0.75599998	-1.4299999	-0.12999999	-3.8699998	-2.97	0.10999999	0.17	C3		
731.0	0.75599998	-1.45	-0.12999999	-3.8699998	-2.96	0.11999999	0.18999999	C4		
731.0	0.75599998	-1.49	-0.12999999	-3.8699998	-2.95	0.12999999	0.2	C5		
731.0	0.75599998	-1.5	-0.12999999	-3.8699998	-2.95	0.11999999	0.18999999	C1		
731.0	0.75599998	-1.5399999	-0.12999999	-3.8699998	-2.94	0.12999999	0.2	C2		
731.0	0.0	-171.21	-0.01999999	-0.46	-2.9	0.02999999	0.01999999	T1		
731.0	0.75599998	-0.81	0.00999999	-3.25	-2.7	0.0	-0.00999999	CVS		
731.0	0.75599998	-171.21	-0.01999999	-0.46	-2.5499999	0.02999999	0.0	T1		
731.0	0.0	-172.75	-0.02999999	-0.37	-2.49	-0.00999999	-0.03999999	T2		
731.0	0.75599998	-172.75	-0.02999999	-0.37	-2.22	-0.00999999	-0.03999999	T2		
731.0	1.5119999	-171.21	-0.01999999	-0.46	-2.2	0.02999999	-0.01999999	T1		
731.0	1.5119999	-172.75	-0.02999999	-0.37	-1.94	-0.00999999	-0.02999999	T2		
731.0	2.269	-171.21	-0.01999999	-0.46	-1.86	0.02999999	-0.05	T1		
731.0	2.269	-172.75	-0.02999999	-0.37	-1.6599999	-0.00999999	-0.02999999	T2		
731.0	3.025	-171.21	-0.01999999	-0.46	-1.5099999	0.02999999	-0.07	T1		
731.0	3.025	-172.75	-0.02999999	-0.37	-1.3899999	-0.00999999	-0.02999999	T2		
731.0	0.0	-0.37999999	0.00999999	-0.88999998	-1.2	0.00999999	0.02999999	ppa		
731.0	3.7809998	-171.21	-0.01999999	-0.46	-1.1599999	0.02999999	-0.09	T1		
Record 1 of 28										
<div><div></div><div></div></div>										

```
Select * from estlist
where barra=731
order by flecx;
```

Solicitaciones de la barra 731
ordenadas por el valor de M

Consultas a una base de datos „real“



The screenshot shows a database application window with a menu bar (File, Edit, Tools, Window, Help) and a toolbar. The main area displays a table with the following data:

	barra	abs	flecX	Msd/MRd
▶	731.0	0.0	-6.25	-0.30818262
	731.0	0.0	-6.2399997	-0.30768954
	731.0	0.0	-6.23	-0.30719646
	731.0	0.0	-6.2199997	-0.30670335
	731.0	0.0	-6.2199997	-0.30670335
	731.0	0.0	-6.21	-0.30621027
	731.0	0.0	-5.4299998	-0.26774907
	731.0	0.75599998	-2.98	-0.14694148
	731.0	0.75599998	-2.97	-0.14644838
	731.0	0.75599998	-2.96	-0.14595529
	731.0	0.75599998	-2.95	-0.1454622
	731.0	0.75599998	-2.95	-0.1454622
	731.0	0.75599998	-2.94	-0.14496912
	731.0	0.0	-2.9	-0.14299674
	731.0	0.75599998	-2.7	-0.1331349
	731.0	0.75599998	-2.5499999	-0.12573851
	731.0	0.0	-2.48	-0.12277000

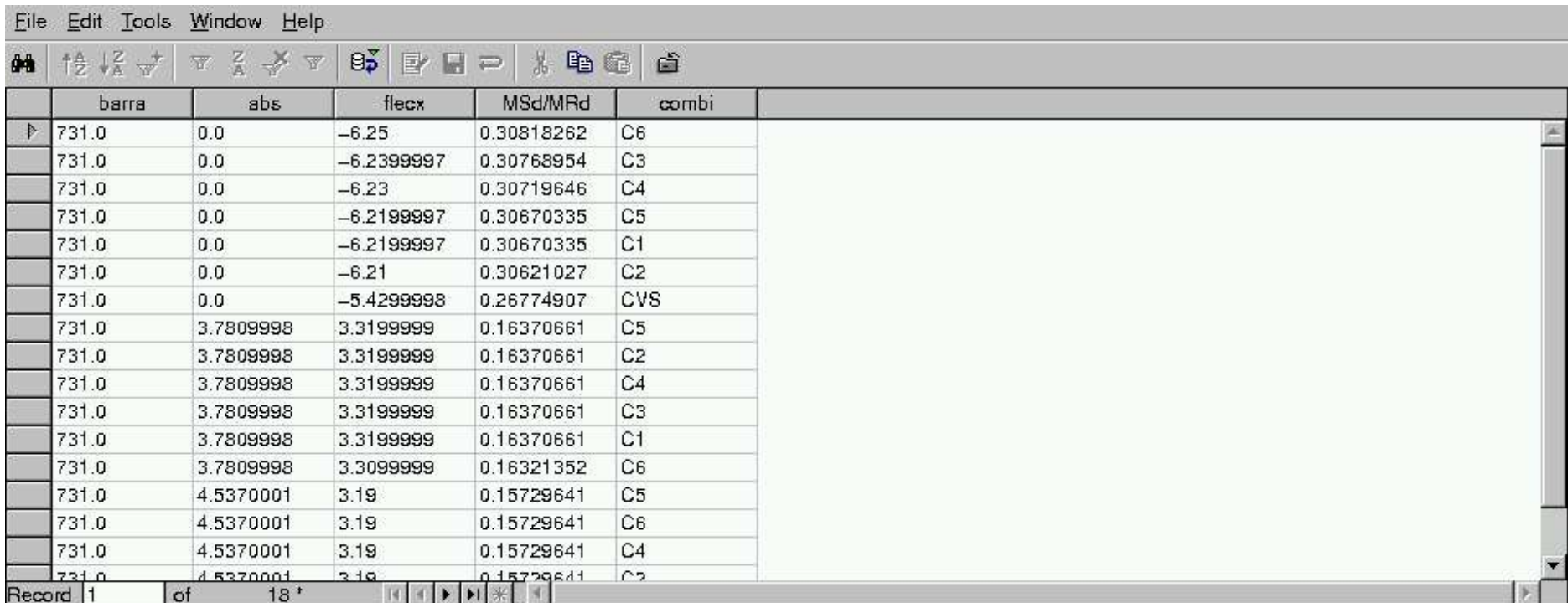
Record 1 of 22

SQL Query:

```
Select barra,abs,flecX,flecX/(628.4*355/1.1/10000) as "Msd/MRd"
from estlist
where barra=731
order by flecX;
```

Comprobación de la barra 731 para un perfil IPE 300
Wplz=628.4 según catálogo (/10000 para pasar a tm)

Consultas a una base de datos „real“



The screenshot shows a database application window with a menu bar (File, Edit, Tools, Window, Help) and a toolbar. The main area displays a table with the following columns: barra, abs, flecx, MSd/MRd, and combi. The table contains 20 rows of data, all with 'barra' value 731.0. The 'abs' column has values 0.0 for the first 8 rows and 3.7809998, 3.7809998, 3.7809998, 3.7809998, 3.7809998, 3.7809998, 4.5370001, 4.5370001, 4.5370001, 4.5370001 for the remaining 12 rows. The 'flecx' column has values -6.25, -6.2399997, -6.23, -6.2199997, -6.2199997, -6.21, -5.4299998, 3.3199999, 3.3199999, 3.3199999, 3.3199999, 3.3199999, 3.3099999, 3.19, 3.19, 3.19, 3.19. The 'MSd/MRd' column has values 0.30818262, 0.30768954, 0.30719646, 0.30670335, 0.30670335, 0.30621027, 0.26774907, 0.16370661, 0.16370661, 0.16370661, 0.16370661, 0.16370661, 0.16321352, 0.15729641, 0.15729641, 0.15729641, 0.15729641. The 'combi' column has values C6, C3, C4, C5, C1, C2, CVS, C5, C2, C4, C3, C1, C6, C5, C6, C4, C2.

barra	abs	flecx	MSd/MRd	combi
731.0	0.0	-6.25	0.30818262	C6
731.0	0.0	-6.2399997	0.30768954	C3
731.0	0.0	-6.23	0.30719646	C4
731.0	0.0	-6.2199997	0.30670335	C5
731.0	0.0	-6.2199997	0.30670335	C1
731.0	0.0	-6.21	0.30621027	C2
731.0	0.0	-5.4299998	0.26774907	CVS
731.0	3.7809998	3.3199999	0.16370661	C5
731.0	3.7809998	3.3199999	0.16370661	C2
731.0	3.7809998	3.3199999	0.16370661	C4
731.0	3.7809998	3.3199999	0.16370661	C3
731.0	3.7809998	3.3199999	0.16370661	C1
731.0	3.7809998	3.3099999	0.16321352	C6
731.0	4.5370001	3.19	0.15729641	C5
731.0	4.5370001	3.19	0.15729641	C6
731.0	4.5370001	3.19	0.15729641	C4
731.0	4.5370001	3.19	0.15729641	C2

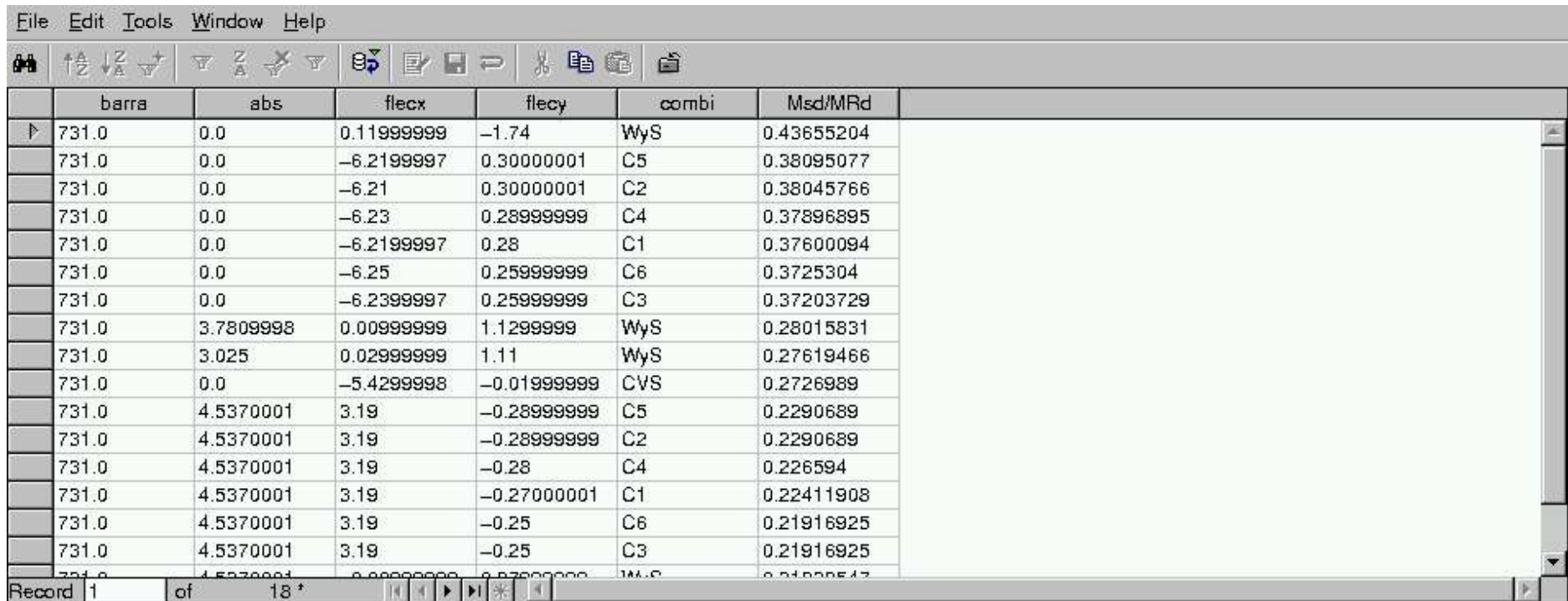
```
Select barra,abs,flecx,abs(flecx/(628.4*355/1.1/10000)) as "Msd/MRd",combi
from estlist
where barra=731
order by "Msd/MRd" desc;
```

Funciones: (abs, sin,etc)

Comprobación de la barra 731 para un perfil IPE 300

Wplz=628.4 según catálogo(/10000 para pasar a tm)

Consultas a una base de datos „real“

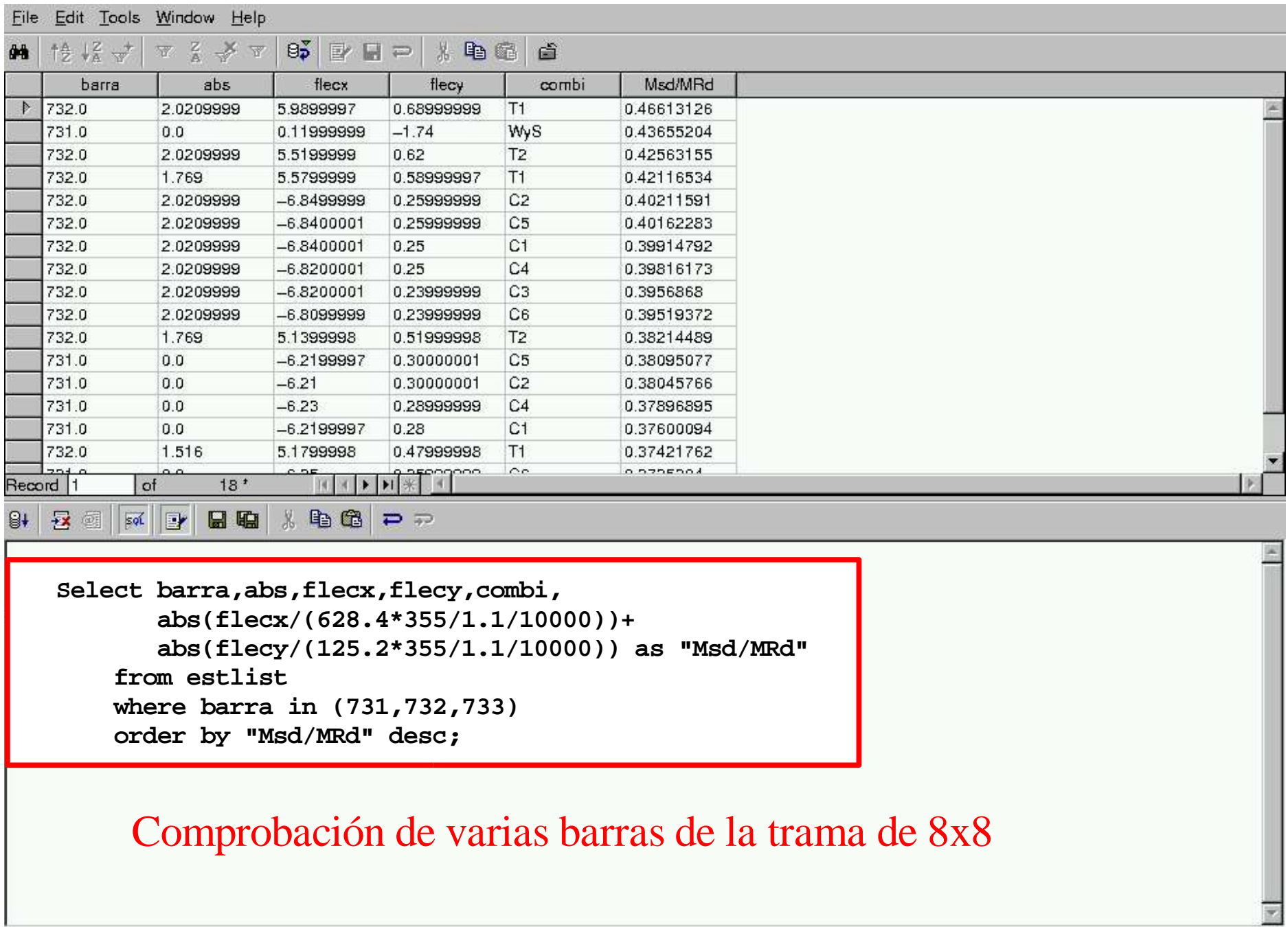


	barra	abs	flecx	flecy	combi	Msd/MRd
1	731.0	0.0	0.11999999	-1.74	WyS	0.43655204
2	731.0	0.0	-6.2199997	0.30000001	C5	0.38095077
3	731.0	0.0	-6.21	0.30000001	C2	0.38045766
4	731.0	0.0	-6.23	0.28999999	C4	0.37896895
5	731.0	0.0	-6.2199997	0.28	C1	0.37600094
6	731.0	0.0	-6.25	0.25999999	C6	0.3725304
7	731.0	0.0	-6.2399997	0.25999999	C3	0.37203729
8	731.0	3.7809998	0.00999999	1.1299999	WyS	0.28015831
9	731.0	3.025	0.02999999	1.11	WyS	0.27619466
10	731.0	0.0	-5.4299998	-0.01999999	CVS	0.2726989
11	731.0	4.5370001	3.19	-0.28999999	C5	0.2290689
12	731.0	4.5370001	3.19	-0.28999999	C2	0.2290689
13	731.0	4.5370001	3.19	-0.28	C4	0.226594
14	731.0	4.5370001	3.19	-0.27000001	C1	0.22411908
15	731.0	4.5370001	3.19	-0.25	C6	0.21916925
16	731.0	4.5370001	3.19	-0.25	C3	0.21916925

```
Select barra,abs,flecx,flecy,combi,  
      abs(flecx/(628.4*355/1.1/10000))+  
      abs(flecy/(125.2*355/1.1/10000)) as "Msd/MRd"  
from estlist  
where barra=731  
order by "Msd/MRd" desc;
```

Comprobación de la barra 731 para My, Mz „concomitantes“
IPE 300: Wplz=628.4, Wply=125.2 según catálogo

Consultas a una base de datos „real“



The screenshot shows a database application window with a menu bar (File, Edit, Tools, Window, Help) and a toolbar. The main area displays a table with 7 columns: barra, abs, flecx, flecy, combi, and Msd/MRd. The table contains 20 rows of data. Below the table, a status bar shows 'Record 1 of 18'. At the bottom, a SQL query is displayed in a text area, enclosed in a red border.

barra	abs	flecx	flecy	combi	Msd/MRd
732.0	2.0209999	5.9899997	0.68999999	T1	0.46613126
731.0	0.0	0.11999999	-1.74	WyS	0.43655204
732.0	2.0209999	5.5199999	0.62	T2	0.42563155
732.0	1.769	5.5799999	0.58999997	T1	0.42116534
732.0	2.0209999	-6.8499999	0.25999999	C2	0.40211591
732.0	2.0209999	-6.8400001	0.25999999	C5	0.40162283
732.0	2.0209999	-6.8400001	0.25	C1	0.39914792
732.0	2.0209999	-6.8200001	0.25	C4	0.39816173
732.0	2.0209999	-6.8200001	0.23999999	C3	0.3956868
732.0	2.0209999	-6.8099999	0.23999999	C6	0.39519372
732.0	1.769	5.1399998	0.51999998	T2	0.38214489
731.0	0.0	-6.2199997	0.30000001	C5	0.38095077
731.0	0.0	-6.21	0.30000001	C2	0.38045766
731.0	0.0	-6.23	0.28999999	C4	0.37896895
731.0	0.0	-6.2199997	0.28	C1	0.37600094
732.0	1.516	5.1799998	0.47999998	T1	0.37421762
731.0	0.0	-6.25	0.25999999	C6	0.3735334

```
Select barra,abs,flecx,flecy,combi,  
      abs(flecx/(628.4*355/1.1/10000))+  
      abs(flecy/(125.2*355/1.1/10000)) as "Msd/MRd"  
from estlist  
where barra in (731,732,733)  
order by "Msd/MRd" desc;
```

Comprobación de varias barras de la trama de 8x8

Consultas a una base de datos „real“

File Edit Tools Window Help									

```
Select barra,axil,torsor,corty,flecx,cortx,flecy,combi
from estlist,barra
where estlist.barra=barra.n and barra.sc='8x8h'
order by abs(flecx) desc;
```

Comprobación de TODAS las barras horizontales de la trama de 8x8

Consultas a una base de datos „real“

	barra	axil	torsor	corty	flecx	cortx	flecy	combi	Msd/MRd	
▶	800.0	-34.880001	0.50999999	1.7599999	0.56999999	-18.379999	32.279998	C5	8.017127	
	800.0	-34.830001	0.50999999	1.74	0.63999998	-18.26	32.11	C2	7.9785046	
	800.0	-34.61	0.52999997	1.7799999	0.52999997	-18.35	32.130001	C4	7.9780306	
	800.0	-34.560001	0.52999997	1.7599999	0.58999997	-18.229999	31.969999	C1	7.9413905	
	800.0	-34.209999	0.60000002	1.82	0.40999999	-18.079999	31.639999	C6	7.8508424	
	801.0	-22.409999	-1.34	22.2	-8.8199996	37.810001	29.93	C5	7.8423233	
	800.0	-34.159999	0.58999997	1.7999999	0.47999998	-17.959999	31.479999	C3	7.8146958	
	801.0	-22.34	-1.37	22.26	-8.7899999	37.779998	29.809999	C2	7.8111448	
	800.0	-34.61	0.52999997	-2.3399999	-0.43999999	-18.35	-31.459999	C4	7.8077735	
	799.0	-34.619998	0.52999997	-2.3399999	-0.43999999	13.779999	-31.459999	C4	7.8077735	
	801.0	-22.389999	-1.3099999	22.329999	-8.7600002	37.549999	29.78	C4	7.8022408	
	800.0	-34.880001	0.50999999	1.7599999	0.56999999	-18.379999	32.279998	C5	8.017127	

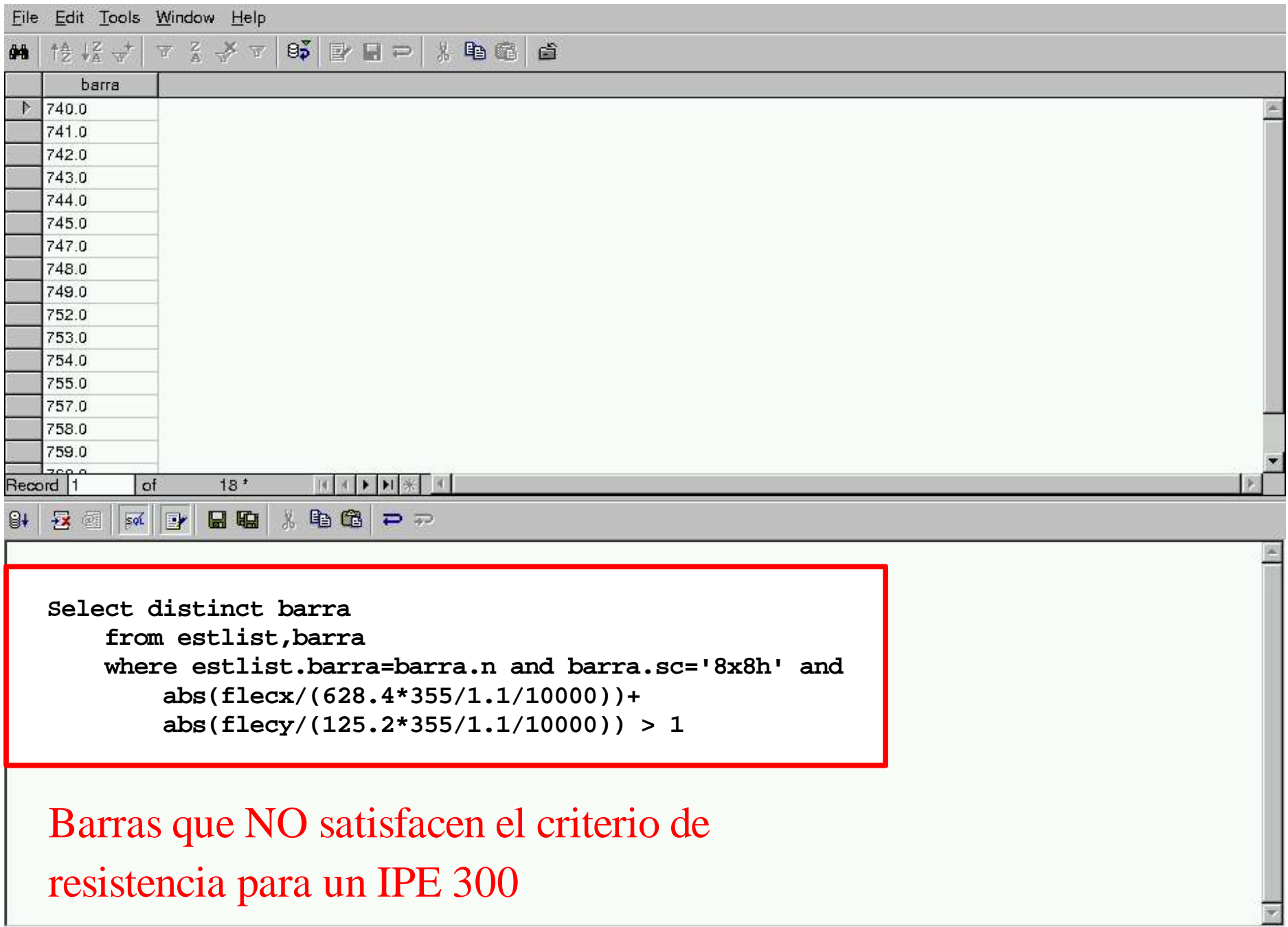
Record 1 of 13

```
Select barra,axil,torsor,corty,flecx,cortx,flecy,combi,  
abs(flecx/(628.4*355/1.1/10000))+  
abs(flecy/(125.2*355/1.1/10000)) as "Msd/MRd"  
from estlist,barra  
where estlist.barra=barra.n and barra.sc='8x8h'  
order by "Msd/MRd" desc;
```

Comprobación de TODAS las barras horizontales de la trama 8x8
para My, Mz „concomitantes“

IPE 300: Wplz=628.4, Wply=125.2 según catálogo

Consultas a una base de datos „real“



The screenshot shows a database application window with a menu bar (File, Edit, Tools, Window, Help) and a toolbar. A table named 'barra' is displayed with the following values:

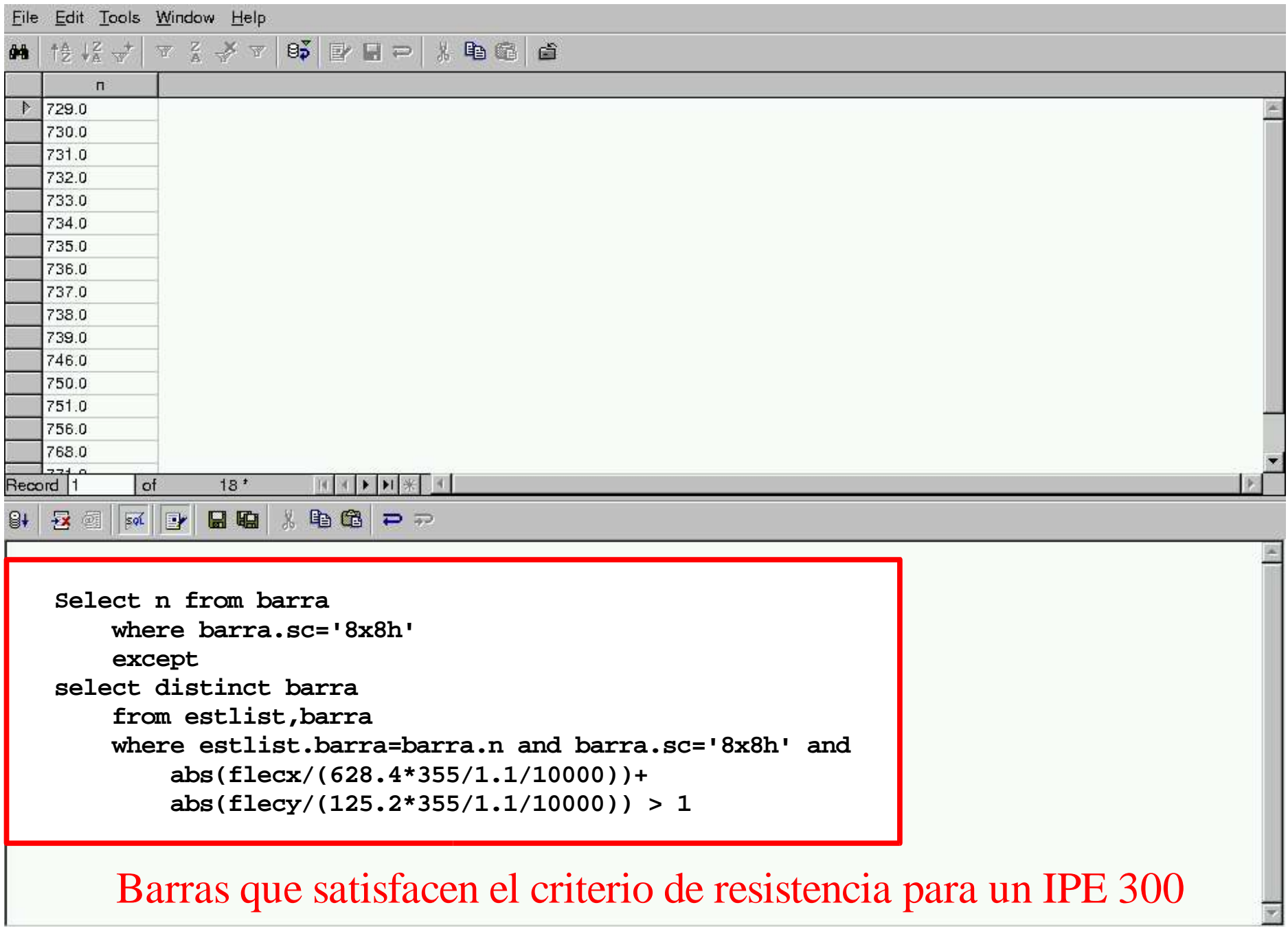
barra
740.0
741.0
742.0
743.0
744.0
745.0
747.0
748.0
749.0
752.0
753.0
754.0
755.0
757.0
758.0
759.0
760.0

Record 1 of 18

```
Select distinct barra
from estlist,barra
where estlist.barra=barra.n and barra.sc='8x8h' and
abs(flecx/(628.4*355/1.1/10000))+
abs(flecy/(125.2*355/1.1/10000)) > 1
```

Barras que NO satisfacen el criterio de resistencia para un IPE 300

Consultas a una base de datos „real“

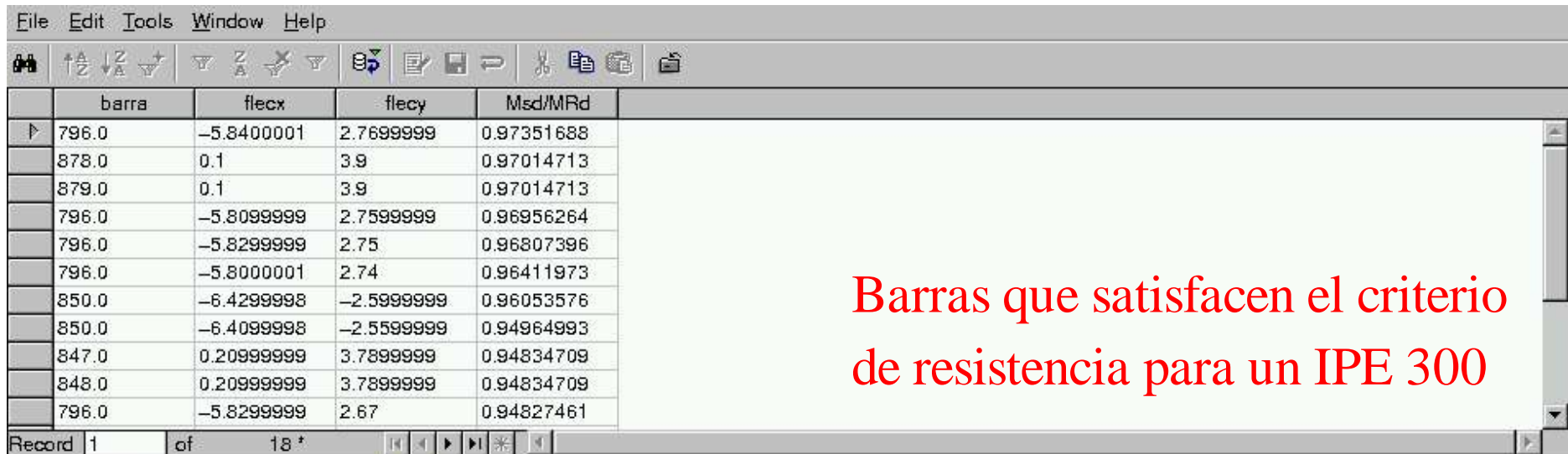


The screenshot shows a database application window. The top part displays a table with a single column 'n' containing 18 values ranging from 729.0 to 768.0. The bottom part shows a SQL query window with a red border containing the following query:

```
Select n from barra
  where barra.sc='8x8h'
 except
select distinct barra
  from estlist,barra
  where estlist.barra=barra.n and barra.sc='8x8h' and
        abs(flecx/(628.4*355/1.1/10000))+
        abs(flecy/(125.2*355/1.1/10000)) > 1
```

Below the query window, a red text label reads: "Barras que satisfacen el criterio de resistencia para un IPE 300".

Consultas a una base de datos „real“



barra	flecx	flecy	Msd/MRd
796.0	-5.8400001	2.7699999	0.97351688
878.0	0.1	3.9	0.97014713
879.0	0.1	3.9	0.97014713
796.0	-5.8099999	2.7599999	0.96956264
796.0	-5.8299999	2.75	0.96807396
796.0	-5.8000001	2.74	0.96411973
850.0	-6.4299998	-2.5999999	0.96053576
850.0	-6.4099998	-2.5599999	0.94964993
847.0	0.20999999	3.7899999	0.94834709
848.0	0.20999999	3.7899999	0.94834709
796.0	-5.8299999	2.67	0.94827461

Barras que satisfacen el criterio
de resistencia para un IPE 300

```
Select barra,flecx,flecy,  
abs(flecx/(628.4*355/1.1/10000))+  
abs(flecy/(125.2*355/1.1/10000)) as "Msd/MRd"  
from estlist,barra  
where estlist.barra=barra.n and barra.n in (  
    select n from barra  
        where barra.sc='8x8h'  
    except  
    select distinct barra  
        from estlist,barra  
        where estlist.barra=barra.n and barra.sc='8x8h' and  
            abs(flecx/(628.4*355/1.1/10000))+  
            abs(flecy/(125.2*355/1.1/10000)) >1  
)  
order by "Msd/MRd" desc;
```

SQL

SELECT [**ALL** | **DISTINCT** [**ON** (expression [, ...])]]
 * | expression [**AS** output_name] [, ...]
 [**FROM** from_item [, ...]]
 [**WHERE** condition]
 [**GROUP BY** expression [, ...]]
 [**HAVING** condition [, ...]]
 [{ **UNION** | **INTERSECT** | **EXCEPT** } [**ALL**] select]
 [**ORDER BY** expression [**ASC** | **DESC** | **USING** operator] [, ...]]
 [**FOR UPDATE** [**OF** tablename [, ...]]]
 [**LIMIT** { count | **ALL** }]
 [**OFFSET** start]

where from_item can be:

[**ONLY**] table_name [*]
 [[**AS**] alias [(column_alias_list)]]
|
(select)
 [**AS**] alias [(column_alias_list)]

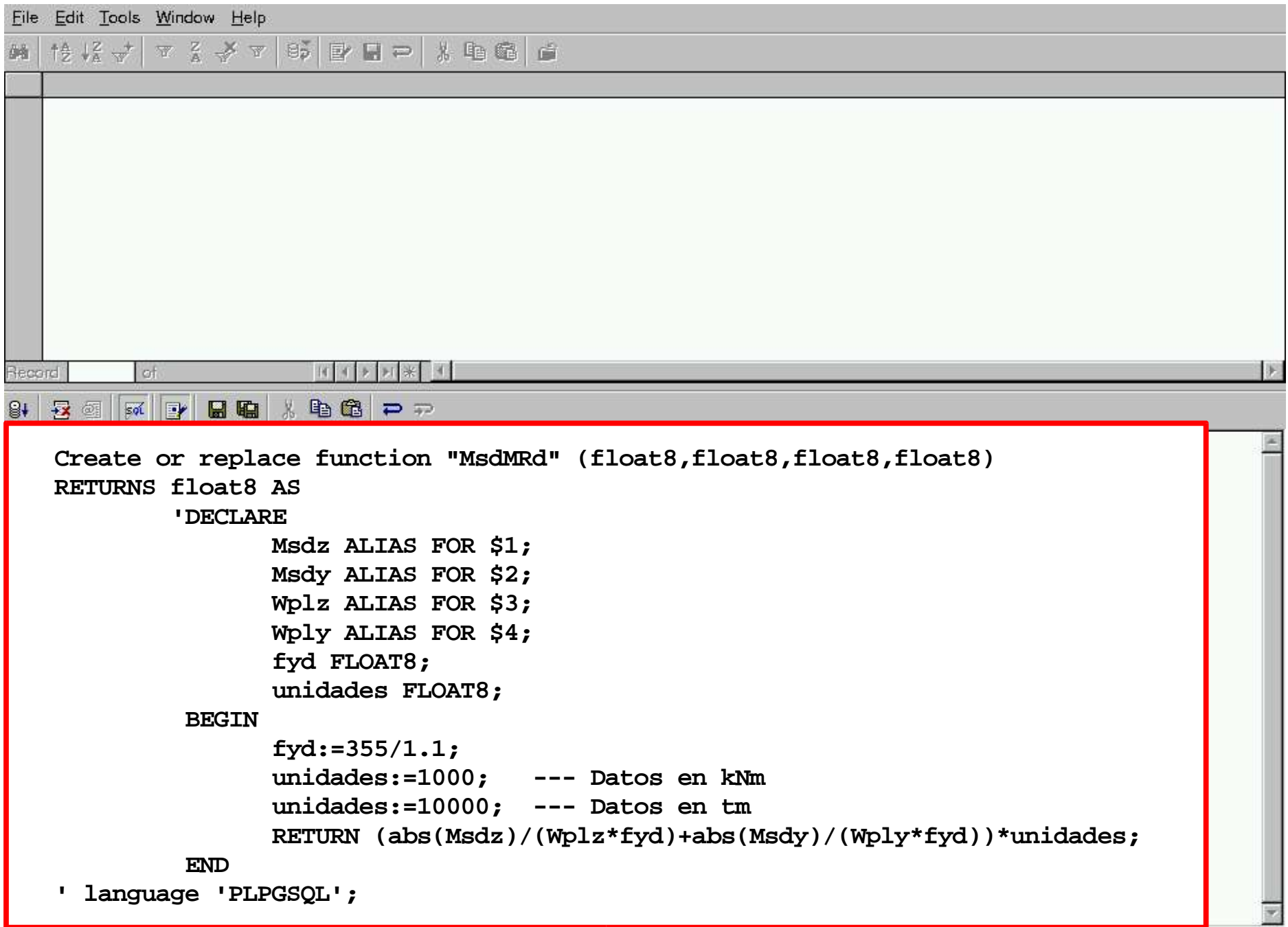
Reciclado de una consulta (sostenibilidad)

The screenshot shows a database management software interface. The top menu bar includes File, Edit, View, Insert, Format, Tools, Window, and Help. The address bar shows the file path: file:///home/acero04/clase7/clase7.sxi. The left sidebar contains a tree view with the following items: bibliot1, Bibliography, CTO3D-04, Links, Queries, comprobacion, Funciones, PE300_3x3h, MSd_MRd, Query1, Tables, and mibase. The 'Queries' folder is highlighted with a red rectangle. The main window displays a table with the following data:

	barra	flecx	flecy	Msd/MRd
796.0	-5.84000	2.76999	0.97351688	
878.0	0.1	3.9	0.97014713	
879.0	0.1	3.9	0.97014713	
796.0	-5.80999	2.75999	0.96956264	
796.0	-5.82999	2.75	0.96807396	
796.0	-5.80000	2.74	0.96411973	
850.0	-6.42999	-2.59999	0.96053576	
850.0	-6.40999	-2.55999	0.94964993	
847.0	0.209999	3.789999	0.94834709	
848.0	0.209999	3.789999	0.94834709	
796.0	-5.80999	2.75	0.94834709	

The bottom status bar shows 'Record 1 of 23'. The bottom right corner displays 'Page 1 / 1', 'Default', '100%', 'INSRT', 'STD', and 'HYP'.

Funciones



The image shows a screenshot of a database IDE window. The window has a menu bar with 'File', 'Edit', 'Tools', 'Window', and 'Help'. Below the menu bar is a toolbar with various icons for file operations, editing, and execution. The main area of the window is a text editor containing a PL/SQL function definition. The text is as follows:

```
Create or replace function "MsdMRd" (float8,float8,float8,float8)
RETURNS float8 AS
'DECLARE
    Msdz ALIAS FOR $1;
    Msdy ALIAS FOR $2;
    Wplz ALIAS FOR $3;
    Wply ALIAS FOR $4;
    fyd FLOAT8;
    unidades FLOAT8;
BEGIN
    fyd:=355/1.1;
    unidades:=1000;    --- Datos en kNm
    unidades:=10000;  --- Datos en tm
    RETURN (abs(Msdz)/(Wplz*fyd)+abs(Msdy)/(Wply*fyd))*unidades;
END
' language 'PLPGSQL';
```


Consultas a una base de datos „real“

	barra	axil	torsor	corty	flecx	cortx	flecy	combi	Msd/MRd	
▶	800.0	-34.880001	0.50999999	1.7599999	0.56999999	-18.379999	32.279998	C5	8.017127	
	800.0	-34.830001	0.50999999	1.74	0.63999998	-18.26	32.11	C2	7.9785046	
	800.0	-34.61	0.52999997	1.7799999	0.52999997	-18.35	32.130001	C4	7.9780306	
	800.0	-34.560001	0.52999997	1.7599999	0.58999997	-18.229999	31.969999	C1	7.9413905	
	800.0	-34.209999	0.60000002	1.82	0.40999999	-18.079999	31.639999	C6	7.8508424	
	801.0	-22.409999	-1.34	22.2	-8.8199996	37.810001	29.93	C5	7.8423233	
	800.0	-34.159999	0.58999997	1.7999999	0.47999998	-17.959999	31.479999	C3	7.8146958	
	801.0	-22.34	-1.37	22.26	-8.7899999	37.779998	29.809999	C2	7.8111448	
	800.0	-34.61	0.52999997	-2.3399999	-0.43999999	-18.35	-31.459999	C4	7.8077735	
	799.0	-34.619998	0.52999997	-2.3399999	-0.43999999	13.779999	-31.459999	C4	7.8077735	
	801.0	-22.389999	-1.3099999	22.329999	-8.7600002	37.549999	29.78	C4	7.8022408	
	800.0	-34.880001	0.50999999	1.7599999	0.56999999	-18.379999	32.279998	C5	8.017127	

```
Select barra,axil,torsor,corty,flecx,cortx,flecy,combi,  
abs(flecx/(628.4*355/1.1/10000))+  
abs(flecy/(125.2*355/1.1/10000)) as "Msd/MRd"  
from estlist,barra  
where estlist.barra=barra.n and barra.sc='8x8h'  
order by "Msd/MRd" desc;
```

Comprobación de TODAS las barras horizontales de la trama 8x8
para My, Mz „concomitantes“

IPE 300:

Wplz=628.4 Wply=125.2 según catálogo

Uso de funciones

	barra	axil	torsor	corty	flecx	cortx	flecy	combi	msdmrd
▶	800.0	-34.880001	0.50999999	1.7599999	0.56999999	-18.379999	32.279998	C5	8.017127
	800.0	-34.830001	0.50999999	1.74	0.63999998	-18.26	32.11	C2	7.9785046
	800.0	-34.61	0.52999997	1.7799999	0.52999997	-18.35	32.130001	C4	7.9780306
	800.0	-34.560001	0.52999997	1.7599999	0.58999997	-18.229999	31.969999	C1	7.9413905
	800.0	-34.209999	0.60000002	1.82	0.40999999	-18.079999	31.639999	C6	7.8508424
	801.0	-22.409999	-1.34	22.2	-8.8199996	37.810001	29.93	C5	7.8423233
	800.0	-34.159999	0.58999997	1.7999999	0.47999998	-17.959999	31.479999	C3	7.8146958
	801.0	-22.34	-1.37	22.26	-8.7899999	37.779998	29.809999	C2	7.8111448
	800.0	-34.61	0.52999997	-2.3399999	-0.43999999	-18.35	-31.459999	C4	7.8077735
	799.0	-34.619998	0.52999997	-2.3399999	-0.43999999	13.779999	-31.459999	C4	7.8077735
	801.0	-22.389999	-1.3099999	22.329999	-8.7600002	37.549999	29.78	C4	7.8022408

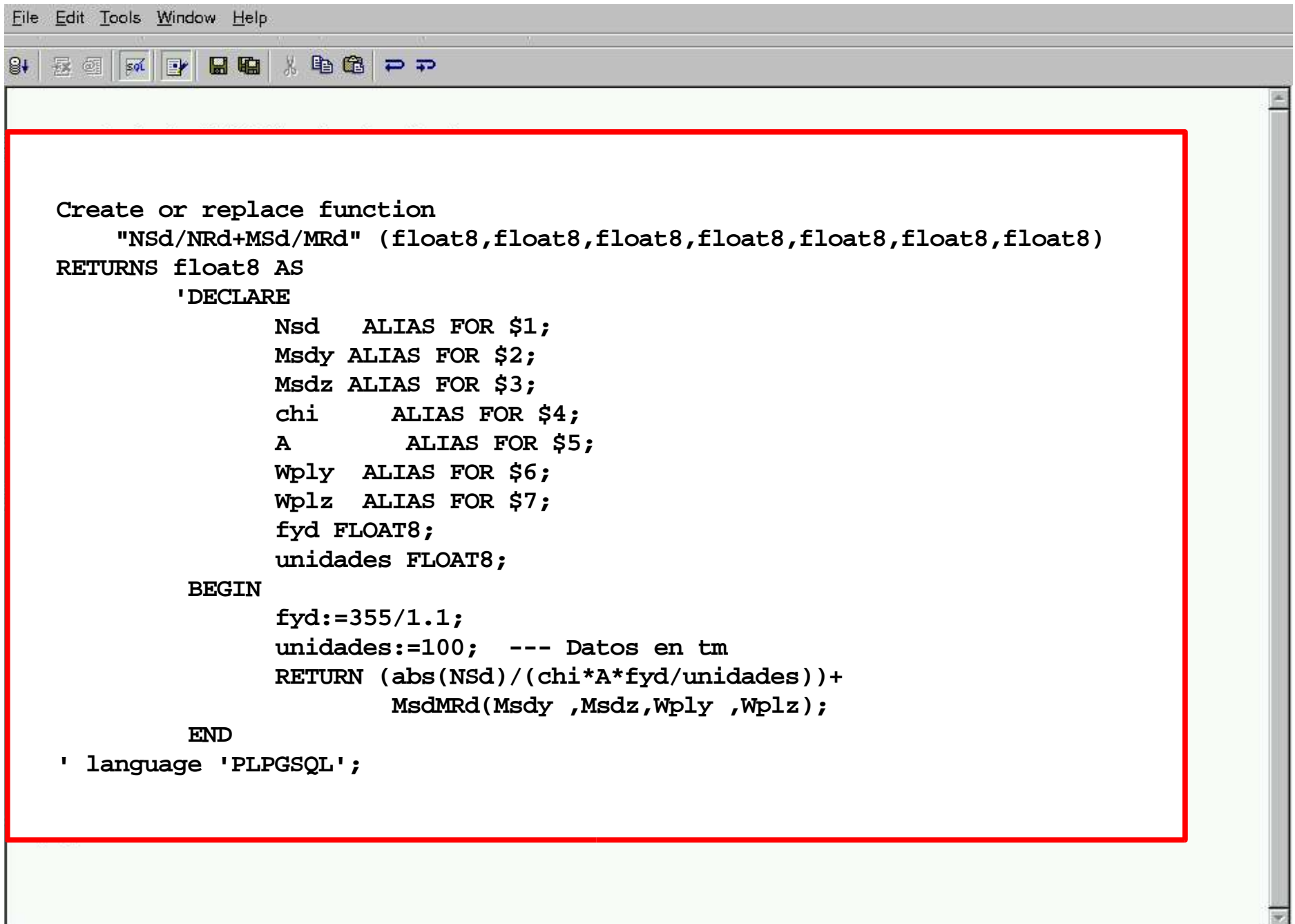
```
Select  barra,axil,torsor,corty,flecx,cortx,flecy,combi,
        MSdMRd (flecx,flecy,628.4,125.2)
from estlist,barra
where estlist.barra=barra.n and barra.sc='8x8h'
order by MsdMRd desc;
```

Comprobación de TODAS las barras horizontales de la trama 8x8
para My, Mz „concomitantes“

IPE 300:

Wplz=628.4, Wply=125.2 según catálogo

Uso de funciones













































The image shows a screenshot of a database IDE window. The title bar at the top reads "File Edit Tools Window Help". Below the title bar is a toolbar with various icons for file operations, editing, and execution. The main area of the window contains a PL/SQL function definition, which is enclosed in a red rectangular border. The code is as follows:

```
Create or replace function
  "NSd/NRd+MSd/MRd" (float8,float8,float8,float8,float8,float8,float8)
RETURNS float8 AS
  'DECLARE
    Nsd    ALIAS FOR $1;
    Msdy ALIAS FOR $2;
    Msdz ALIAS FOR $3;
    chi    ALIAS FOR $4;
    A      ALIAS FOR $5;
    Wply ALIAS FOR $6;
    Wplz ALIAS FOR $7;
    fyd FLOAT8;
    unidades FLOAT8;

  BEGIN
    fyd:=355/1.1;
    unidades:=100; --- Datos en tm
    RETURN (abs(NSd)/(chi*A*fyd/unidades))+
           MsdMRd(Msdy ,Msdz,Wply ,Wplz);

  END
' language 'PLPGSQL';
```

Uso de funciones

File Edit Tools Window Help											
<div><div></div><div></div></div>											
	barra	axil	torsor	corty	flecx	cortx	flecy	combi	CR aprox	NSd/NRd	
▶	614.0	-292.20999	-0.56	-6.0500001	-5.69	-4.8499999	-16.1	C5	3.3062207	3.0588135	
	614.0	-292.45999	-0.54000002	-6.0399999	-5.7399997	-4.73	-15.699999	C6	3.3049786	3.0614306	
	614.0	-292.16	-0.55000001	-6.0500001	-5.7199997	-4.8200001	-16.0	C4	3.3049418	3.0582902	
	614.0	-292.01998	-0.56	-5.98	-5.5399999	-4.8499999	-16.149999	C2	3.3029956	3.0568246	
	614.0	-292.26998	-0.54000002	-5.9699997	-5.5900001	-4.7399997	-15.739999	C3	3.3016421	3.0594418	
	614.0	-291.97	-0.56	-5.98	-5.5700001	-4.8299999	-16.04	C1	3.3016054	3.0563013	
	607.0	-281.0	0.55000001	8.0200004	-11.64	-5.42	17.51	C5	3.2757151	2.9414689	
	607.0	-280.97	0.55000001	8.0200004	-11.64	-5.3899998	17.399999	C4	3.2741754	2.9411549	
	607.0	-281.32	0.56	7.9899997	-11.6	-5.2899999	17.069999	C6	3.2736842	2.9448187	
	607.0	-280.35998	0.57999998	7.96	-11.56	-5.44	17.579999	C2	3.2688393	2.9347696	
	607.0	-280.32	0.57999998	7.96	-11.56	-5.4	17.469999	C1	3.2671949	2.9343507	
Record 1 of 13											
<div><div></div><div></div></div>											

```
Select barra,axil,torsor,corty,flecx,cortx,flecy,combi,
      "NSd/NRd+MSd/MRd" (axil,flecx,flecy,0.11,269.1,2592,2781) as "CR aprox" ,
      "NSd/NRd+MSd/MRd" (axil,      0,      0,0.11,269.1,2592,2781) as "NSd/NRd"
from estlist,barra
where estlist.barra=barra.n and barra.sc='TS48-8x8'
order by "CR aprox" desc;
```

Comprobación de una familia de pilares de la trama 8x8
para N, My, Mz „concomitantes“

?=0.11, A=269.1, Wplz=2592, Wplv=2784 según ANM (99395)