



Music CD exercise

1. Start Oracle **SQL Developer**.
2. Ativate **Autocommit** Option (Menu Tools > Preferences > Database > Advanced).
3. Create/use a connection to DEI Oracle Server.
4. **Run shared scripts** for database creation (DB) of a Music CD, based on the following model:

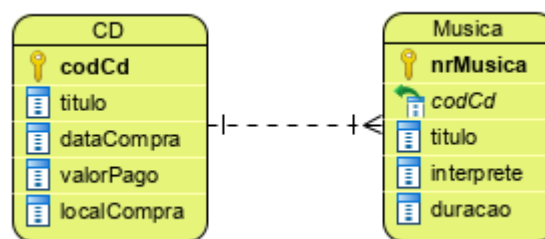


Figure 1 – Relational Model

Context translation in EN:

- “Musica” – music, song
- “titulo” – title
- “interprete” – musician
- “duracao” – duration
- “data compra” – purchase date
- “valorPago” – paid value
- “localCompra” – purchase local

5. **Create a *script*** to perform the following operations:

- 1) Show all data **of** CD table;

	⚡	CODCD	⚡	TITULO	⚡	DATACOMPRA	⚡	VALORPAGO	⚡	LOCALCOMPRA
1		1		Punkzilla		13.04.22		55		FNAC
2		2		Classic Duets		19.05.21		30,5		Worten
3		3		The Wall		13.04.22		25,8		FNAC
4		4		Hits 4		19.09.10		42,3		Worten
5		5		Songs of Experience		20.01.01		10,99		(null)
6		6		Giesta 2		19.06.15		9,1		(null)



2) Display all data of Musica table.

	◊ NRMUSICA	◊ CODCD	◊ TITULO	◊ INTERPRETE	◊ DURACAO
1	1	1	Dream of Waking	AFI	3,05
2	2	2	Still	Rufio	3,02
3	3	1	Behind the Music	The Vandals	2,41
4	4	1	Why Are You Alive	The Vandals	2,34
5	5	1	Vandals	The Vandals	4,01
6	6	1	Days of the Phoenix	AFI	3,28
7	7	1	Wester	AFI	3,02
8	1	2	Bizet: Les pêcheurs de perles...	Orquestra Filarmónica Real	5,24
9	2	2	Verdi: Otello/Act 2	Orquestra Sinfónica Chicago	6,47
10	3	2	Verdi: Aida/Act 4	Loring Maazel	4,38
11	4	2	Puccini: Turandot	Zubin Mehta	3,08
12	1	3	In the Flesh	Pink Floyd	3,2
13	2	3	The Thin Lee	Pink Floyd	2,3
14	3	3	Mother	Pink Floyd	5,34
15	4	3	Don't Leave Me Now	Pink Floyd	4,17
16	5	3	Young Lust	Pink Floyd	3,33
17	1	4	It's Alright (Baby's Coming Back)	Eurythmics	3,05
18	2	4	Hounds of Love	Kate Bush	3,02
19	3	4	Calling America	Electric Light Orchestra	2,41
20	4	4	Suspicious Minds	Fine Young Cannibals	2,34
21	5	4	I'm Your Man	Wham!	3,28
22	1	5	Love is All We Have Left	U2	2,41
23	2	5	Lights of Home	U2	4,16
24	3	5	You're the Best Thing About Me	U2	3,45
25	4	5	Get Out of Your Own Way	U2	3,58
26	5	5	American Soul	U2	4,21
27	6	5	Summer of Love	U2	3,24
28	7	5	Red Flag Day	U2	3,19
29	8	5	The Showman	U2	3,23
30	1	6	Valsa em Espiral	Miguel Araújo	3,34
31	2	6	1987	Miguel Araújo	4,12
32	3	6	Meio Conto	Miguel Araújo	3,13
33	4	6	Via Norte	Miguel Araújo	3,35
34	5	6	Sangemil	Miguel Araújo	4,03
35	6	6	Lurdes Valsa Lenta	Miguel Araújo	4,41
36	7	6	Axl Rose	Miguel Araújo	5,03
37	8	6	20% Mais	Miguel Araújo	1,2
38	9	6	Vândalo	Miguel Araújo	4,45
39	10	6	Aqui Dali	Miguel Araújo	4,45

**A. Projection**

- 1) Display “**titulo**” and “**data de compra**” from all CDs;

	TITULO	DATACOMPRA
1	Punkzilla	13.04.22
2	Classic Duets	19.05.21
3	The Wall	13.04.22
4	Hits 4	19.09.10
5	Songs of Experience	20.01.01
6	Giesta 2	19.06.15

- 2) Display the previous result without duplicated entries;

	DATACOMPRA
1	19.06.15
2	19.05.21
3	13.04.22
4	19.09.10
5	20.01.01

- 3) Display the **CD** code and respective **interpretes**, without duplicated entries;

	CODCD	INTERPRETE
1	2	Loring Maazel
2	2	Zubin Mehta
3	3	Pink Floyd
4	4	Eurythmics
5	1	The Vandals
6	4	Electric Light Orchestra
7	4	Wham!
8	4	Kate Bush
9	2	Orquestra Sinfónica Chicago
10	4	Fine Young Cannibals
11	5	U2
12	1	AFI
13	1	Rufio
14	2	Orquestra Filarmónica Real
15	6	Miguel Araújo

- 4) Display the same result but change the first column name to “Código do CD”;

**SQL DML SELECT – QUERIES,****OPTIONAL ARGUMENTS (WHERE, ORDER BY) AND AGGREGATE FUNCTIONS (COUNT, SUM, AVG, MAX, MIN)**

	Código do CD	INTERPRETE
1	2	Loring Maazel
2	2	Zubin Mehta
3	3	Pink Floyd
4	4	Eurythmics
5	1	The Vandals
6	4	Electric Light Orchestra
7	4	Wham!
8	4	Kate Bush
9	2	Orquestra Sinfónica Chicago
10	4	Fine Young Cannibals
11	5	U2
12	1	AFI
13	1	Rufio
14	2	Orquestra Filarmónica Real
15	6	Miguel Araújo

- 5) Display **titulo**, **valor pago**, and **IVA** off all CDs. IVA value is calculated by using the following formula: $\text{valor IVA} = (\text{valor pago} * 0.23) / 1.23$.

	TÍTULO	VALOR_PAGO	IVA_PAGO
1	Punkzilla	55	10,28
2	Classic Duets	30,5	5,7
3	The Wall	25,8	4,82
4	Hits 4	42,3	7,91
5	Songs of Experience	10,99	2,06
6	Giesta 2	9,1	1,7

B. Selection

- 1) Display all data from musicas of the **CD** that has the **código** equal to 2;

	NRMUSICA	CODCD	TÍTULO	INTERPRETE	DURACAO
1	1	2	Bizet: Les pêcheurs de perles...	Orquestra Filarmónica Real	5,24
2	2	2	Verdi: Otello/Act 2	Orquestra Sinfónica Chicago	6,47
3	3	2	Verdi: Aida/Act 4	Loring Maazel	4,38
4	4	2	Puccini: Turandot	Zubin Mehta	3,08

- 2) Display all data from musicas that doesn't belong to the **CD** with code 2;
- 3) Display all data from musicas of the CD with the code 2 which **duracao** belong to the interval **[4,6]**;
- 4) Display all data from musicas of the CD with code 2 which **duracao** be **smaller than 4** or bigger than 6;
- 5) Display all data from musicas with the number: **1, 3, 5 or 6**;
- 6) Display all data from musicas with the number different than **1, 3, 5 and 6**;
- 7) Display all data from musicas wich **interprete** is an **orquestra**;



	NRMUSICA	CODCD	TITULO	INTERPRETE	DURACAO
1	1	2	Bizet: Les pêcheurs de perles...	Orquestra Filarmónica Real	5,24
2	2	2	Verdi: Otello/Act 2	Orquestra Sinfónica Chicago	6,47

- 8) Display all data from musicas which **interprete name has the letter Y**;

	NRMUSICA	CODCD	TITULO	INTERPRETE	DURACAO
1	1	3	In the Flesh	Pink Floyd	3,2
2	2	3	The Thin Lee	Pink Floyd	2,3
3	3	3	Mother	Pink Floyd	5,34
4	4	3	Don't Leave Me Now	Pink Floyd	4,17
5	5	3	Young Lust	Pink Floyd	3,33
6	1	4	It's Alright (Baby's Coming Back)	Eurythmics	3,05
7	4	4	Suspicious Minds	Fine Young Cannibals	2,34

- 9) Display all data from musicas which **name ends with DAL?**, where ? stands for any character;

	NRMUSICA	CODCD	TITULO	INTERPRETE	DURACAO
1	5	1	Vandals	The Vandals	4,01
2	9	6	Vândalo	Miguel Araújo	4,45
3	10	6	Aqui Dali	Miguel Araújo	4,45

- 10) Display all data from musicas which **title has the character %**;

	NRMUSICA	CODCD	TITULO	INTERPRETE	DURACAO
1	8	6	20% Mais	Miguel Araújo	1,2

- 11) Display all data from musicas which **título** starts with the letter *B, D* or *H*;

	NRMUSICA	CODCD	TITULO	INTERPRETE	DURACAO
1	1	1	Dream of Waking	AFI	3,05
2	3	1	Behind the Music	The Vandals	2,41
3	6	1	Days of the Phoenix	AFI	3,28
4	1	2	Bizet: Les pêcheurs de perles...	Orquestra Filarmónica Real	5,24
5	4	3	Don't Leave Me Now	Pink Floyd	4,17
6	2	4	Hounds of Love	Kate Bush	3,02

- 12) Display all data from CD without “**local de compra**”;

	CODCD	TITULO	DATACOMPRA	VALORPAGO	LOCALCOMPRA
1	5	Songs of Experience	20.01.01	10,99	(null)
2	6	Giesta 2	19.06.15	9,1	(null)

- 13) Display all data from CD with “**local de compra**”.

**C. Projection and selection**

- 1) Display **titulos** from CD bought on **FNAC**;

TITULO
1 Punkzilla
2 The Wall

- 2) Display **titulos** from CD not bought on **FNAC**.

TITULO
1 Classic Duets
2 Hits 4
3 Songs of Experience
4 Giesta 2

D. Sorting

- 1) Display **titulos** from CD that where not bought on **FNAC**, sorted by reverse alphabetic order;

TITULO
1 Songs of Experience
2 Hits 4
3 Giesta 2
4 Classic Duets

- 2) Display titulo and data de compra from CD, sorted by descending order of **data de compra**;
- 3) Display titulo and local de compra from CD, sorted by ascending order of **local de compra** do CD;
- 4) Display titulo, and valor pago and respective IVA from CD, by IVA descending order;

TITULO	VALOR PAGO	IVA PAGO
1 Punkzilla	55	10,28
2 Hits 4	42,3	7,91
3 Classic Duets	30,5	5,7
4 The Wall	25,8	4,82
5 Songs of Experience	10,99	2,06
6 Giesta 2	9,1	1,7



- 5) Display titulo from CD sorted by **data de compra descending order** and, in case of same dates, by alphabetical order of **titulo**.

	TITULO	DATACOMPRA
1	Songs of Experience	20.01.01
2	Hits 4	19.09.10
3	Giesta 2	19.06.15
4	Classic Duets	19.05.21
5	Punkzilla	13.04.22
6	The Wall	13.04.22

E. Aggregate functions

- 1) Display the number of distinct locais de compra;

	QTD_LOCAIS_COMPRA
1	2

- 2) Display the **total** spent on CD purchased, and the biggest and smallest value paid;

	TOTAL	MAIOR	MENOR
1	173,69	55	9,1

- 3) Display the average of duracao from musicas;

	DURAÇÃO MÉDIA
1	3,53

- 4) Display **total** value paid on FNAC;

	TOTAL_FNAC
1	80,8

- 5) Display the **difference** between the biggest and smallest value paid on FNAC.

	DIFERENÇA_FNAC
1	29,2