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P7 Practice Strings

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Introduction

We must create the database using the script attached inside the doc, but there is a little issue due to .docx formatting, so first we must get the content of the script in plain text. I did it by opening the .docx with google docs.

After this first step we will be able to execute as usual the script without our (') character that has been replaced by (‘).

Before starting to use our database we must execute “`use SQL1NORMALSTRINGS;`” on the shell. As it is usual.

Exercises

1. Concat the name and surname of the employees using the separador ‘ ‘ using the function CONCAT_WS.

```
+--------------------+
| FullName           |
+--------------------+
| BRAD PITT          |
| SERGIO SÁNCHEZ     |
| MARTA ARROYO       |
| REBECA SALA        |
| JUAN JIMÉNEZ       |
| MONICA MARTÍN      |
| BARTOLOME GOMIS    |
| MARIA CEREZO       |
| JESUS GILBERTO     |
| LUIS TOVAR         |
| FERNANDO ALONSO    |
| XAVIER JIMENO      |
| ANA FERNÁNDEZ      |
| ANTONIA MUÑOZ      |
| ANTONIO BANDERAS   |
| FERNANDA RUIZ      |
+--------------------+
16 rows in set (0.002 sec)
```

	FullName
1	BRAD PITT
2	SERGIO SÁNCHEZ
3	MARTA ARROYO
4	REBECA SALA
5	JUAN JIMÉNEZ
6	MONICA MARTÍN
7	BARTOLOME GOMIS
8	MARIA CEREZO
9	JESUS GILBERTO
10	LUIS TOVAR
11	FERNANDO ALONSO
12	XAVIER JIMENO
13	ANA FERNÁNDEZ
14	ANTONIA MUÑOZ
15	ANTONIO BANDERAS
16	FERNANDA RUIZ

Concat_ws, works by setting on the first parameter the character or string that will be used in the middle of the other concat parameters.

```
select concat_ws(' ',name,surname) as FullName from EMPLOYEES;
```

2. Format employees' commission with format ##,## (you must check MariaDB docs, not only the slides…).

```
+-------------+
| ComissionF  |
+-------------+
| NULL        |
| NULL        |
| 390,00      |
| 650,00      |
| NULL        |
| 1020,00     |
| NULL        |
| NULL        |
| NULL        |
| 0,00        |
| NULL        |
| NULL        |
| NULL        |
| NULL        |
| NULL        |
| NULL        |
+-------------+
16 rows in set (0.005 sec)
```

	ComissionF
1	<null>
2	<null>
3	390,00
4	650,00
5	<null>
6	1020,00
7	<null>
8	<null>
9	<null>
10	0,00
11	<null>
12	<null>
13	<null>
14	<null>
15	<null>
16	<null>

We will be using the format function allowing numbers to set decimals easily as the following example. But datagrip won't be showing the coma replacing the dot due to it's own UI design.

```
select format(commission,2,'es_ES') as ComissionF from EMPLOYEES;
```

3. Return the position of the first A in the employees' surname.

```
+---------------+--------+
| surname       | FirstA |
+---------------+--------+
| PITT          |      0 |
| SÁNCHEZ       |      2 |
| ARROYO        |      1 |
| SALA          |      2 |
| JIMÉNEZ       |      0 |
| MARTÍN        |      2 |
| GOMIS         |      0 |
| CEREZO        |      0 |
| GILBERTO      |      0 |
| TOVAR         |      4 |
| ALONSO        |      1 |
| JIMENO        |      0 |
| FERNÁNDEZ     |      5 |
| MUÑOZ         |      0 |
| BANDERAS      |      2 |
| RUIZ          |      0 |
+---------------+--------+
16 rows in set (0.001 sec)
```

	surname	position
1	PITT	0
2	SÁNCHEZ	2
3	ARROYO	1
4	SALA	2
5	JIMÉNEZ	0
6	MARTÍN	2
7	GOMIS	0
8	CEREZO	0
9	GILBERTO	0
10	TOVAR	4
11	ALONSO	1
12	JIMENO	0
13	FERNÁNDEZ	5
14	MUÑOZ	0
15	BANDERAS	2
16	RUIZ	0

Locate function allows us to search strings or characters position inside another string, using it as the example it just shows us the first position.
By the way we can also use the INSTR function.

```
select surname, locate('a',surname) as position from EMPLOYEES;
```

4. Return the position of the second A in the employees' surname. Clue: Check IF function and use nested functions SUBSTRING and INSTR.

```
+---------------+---------+
| surname       | SecondA |
+---------------+---------+
| PITT          |       0 |
| SÁNCHEZ       |       0 |
| ARROYO        |       0 |
| SALA          |       4 |
| JIMÉNEZ       |       0 |
| MARTÍN        |       0 |
| GOMIS         |       0 |
| CEREZO        |       0 |
| GILBERTO      |       0 |
| TOVAR         |       0 |
| ALONSO        |       0 |
| JIMENO        |       0 |
| FERNÁNDEZ     |       0 |
| MUÑOZ         |       0 |
| BANDERAS      |       7 |
| RUIZ          |       0 |
+---------------+---------+
16 rows in set (0.003 sec)
```

	surname	SecondA
4	SALA	4
5	JIMÉNEZ	0
6	MARTÍN	0
7	GOMIS	0
8	CEREZO	0
9	GILBERTO	0
10	TOVAR	0
11	ALONSO	0
12	JIMENO	0
13	FERNÁNDEZ	0
14	MUÑOZ	0
15	BANDERAS	7
16	RUIZ	0

It works the following way, first we check if there is more than one 'a' on the string, if there is not we set the column to 0, if it exists, we execute the sum of the first position and the position of the other 'a' starting from the first 'a' position.

```
select surname, if ( instr(substring(surname,
instr(surname,'a')+1),'a')=0,
    0,
    instr(surname,'a')+instr(substring(surname,
instr(surname,'a')+1),'a')
) as SecondA from EMPLOYEES;
```

5. Return the full name of the employees with the next format:

```
+--------------------+
| FullName           |
+--------------------+
| Brad Pitt          |
| Sergio Sánchez     |
| Marta Arroyo       |
| Rebeca Sala        |
| Juan Jiménez       |
| Monica Martín      |
| Bartolome Gomis    |
| Maria Cerezo       |
| Jesus Gilberto     |
| Luis Tovar         |
| Fernando Alonso    |
| Xavier Jimeno      |
| Ana Fernández      |
| Antonia Muñoz      |
| Antonio Banderas   |
| Fernanda Ruiz      |
+--------------------+
16 rows in set (0.005 sec)
```

	FullName
1	Brad Pitt
2	Sergio Sánchez
3	Marta Arroyo
4	Rebeca Sala
5	Juan Jiménez
6	Monica Martín
7	Bartolome Gomis
8	Maria Cerezo
9	Jesus Gilberto
10	Luis Tovar
11	Fernando Alonso
12	Xavier Jimeno
13	Ana Fernández
14	Antonia Muñoz
15	Antonio Banderas
16	Fernanda Ruiz

It works by getting the first letter and setting it to upper, then get the rest of the string and set it to lowercase. I used the left function to extract the first letter on the left, as far as it is already on upper case format i have not to set it. Continue by concating the rest of the string setted to lower using substring, lenght and lower function. Like this:

```
select concat_ws('',
concat(left(name,1),lower(substring(name,2,length(name)))),
concat(left(surname,1),lower(substring(surname,2,length(surname)))
)) as FullName
from EMPLOYEES;
```

6. Select all the full names of the databases but changing 'IO' for 'IOTE'. If you do this using string function in a SELECT clause you don't change the data stored in the database…

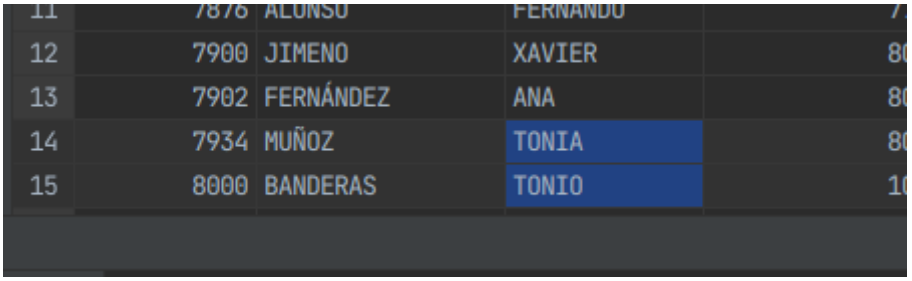
```
+--------------------+
| IOTE_NAME          |
+--------------------+
| BRAD PITT          |
| SERGIOTE SÁNCHEZ   |
| MARTA ARROYO       |
| REBECA SALA        |
| JUAN JIMÉNEZ       |
| MONICA MARTÍN      |
| BARTOLOME GOMIS    |
| MARIA CEREZO       |
| JESUS GILBERTO     |
| LUIS TOVAR         |
| FERNANDO ALONSO    |
| XAVIER JIMENO      |
| ANA FERNÁNDEZ      |
| ANTONIA MUÑOZ      |
| ANTONIOTE BANDERAS |
| FERNANDA RUIZ      |
+--------------------+
16 rows in set (0.001 sec)
```

	IOTE_Name
1	BRAD PITT
2	SERGIOTE SÁNCHEZ
3	MARTA ARROYO
4	REBECA SALA
5	JUAN JIMÉNEZ
6	MONICA MARTÍN
7	BARTOLOME GOMIS
8	MARIA CEREZO
9	JESUS GILBERTO
10	LUIS TOVAR
11	FERNANDO ALONSO
12	XAVIER JIMENO
13	ANA FERNÁNDEZ
14	ANTONIA MUÑOZ
15	ANTONIOTE BANDERAS
16	FERNANDA RUIZ

It can be executed by using the replace function, where you set the first parameter the target, the second parameter, what you like to change and the third the replacing string.

```
select replace(concat_ws(' ',name,surname), 'IO','IOTE') as
IOTE_Name from EMPLOYEES;
```

7. Update all the names like Antonio or Antonia with Tonio or Tonia. You must use UPDATE and the function REPLACE.



11	7876	ALONSO	FERNANDO	7
12	7900	JIMENO	XAVIER	8
13	7902	FERNÁNDEZ	ANA	8
14	7934	MUÑOZ	TONIA	8
15	8000	BANDERAS	TONIO	1

Replace function can be also used the following way:

```
update EMPLOYEES
set name = replace(name, 'ANTONIA','TONIA'),
name = replace(name, 'ANTONIO','TONIO');
```

8. Show the surnames of the employees with an underscore after the second char.

```
+----------------+
| Surname        |
+----------------+
| PI_TT          |
| SÁ_NCHEZ       |
| AR_ROYO        |
| SA_LA          |
| JI_MÉNEZ       |
| MA_RTÍN        |
| GO_MIS         |
| CE_REZO        |
| GI_LBERTO      |
| TO_VAR         |
| AL_ONSO        |
| JI_MENO        |
| FE_RNÁNDEZ     |
| MU_ÑOZ         |
| BA_NDERAS      |
| RU_IZ          |
+----------------+
16 rows in set (0.001 sec)
```

	Surname
1	PI_TT
2	SÁ_NCHEZ
3	AR_ROYO
4	SA_LA
5	JI_MÉNEZ
6	MA_RTÍN
7	GO_MIS
8	CE_REZO
9	GI_LBERTO
10	TO_VAR
11	AL_ONSO
12	JI_MENO
13	FE_RNÁNDEZ
14	MU_ÑOZ
15	BA_NDERAS
16	RU_IZ

This exercise is pretty similar to capitalizing only the first letter.

```
select concat_ws(' ',
substring(surname,1,2),
substring(surname,3,length(surname))) as Surname
from EMPLOYEES;
```

9. Write the first char of the surnames and the first char of the surnames in ASCII code.

```
+-----------+--------------+
| FirstChar | SurnameASCII |
+-----------+--------------+
| P         |           80 |
| S         |           83 |
| A         |           65 |
| S         |           83 |
| J         |           74 |
| M         |           77 |
| G         |           71 |
| C         |           67 |
| G         |           71 |
| T         |           84 |
| A         |           65 |
| J         |           74 |
| F         |           70 |
| M         |           77 |
| B         |           66 |
| R         |           82 |
+-----------+--------------+
16 rows in set (0.001 sec)
```

	FirstChar	SurnameAscii
1	P	80
2	S	83
3	A	65
4	S	83
5	J	74
6	M	77
7	G	71
8	C	67
9	G	71
10	T	84
11	A	65
12	J	74
13	F	70
14	M	77
15	B	66
16	R	82

By using the ascii function we can translate a character to ascii code.

```
select left(surname,1) as FirstChar,
ascii(left(surname,1)) as SurnameAscii
from EMPLOYEES;
```

10. Show the full name of the employees but ensuring that there won't be white spaces before and/or after the name and/or surname.

```
+-----------------+
| FullName        |
+-----------------+
| BRAD PITT       |
| SERGIO SÁNCHEZ  |
| MARTA ARROYO    |
| REBECA SALA     |
| JUAN JIMÉNEZ    |
| MONICA MARTÍN   |
| BARTOLOME GOMIS |
| MARIA CEREZO    |
| JESUS GILBERTO  |
| LUIS TOVAR      |
| FERNANDO ALONSO |
| XAVIER JIMENO   |
| ANA FERNÁNDEZ   |
| TONIA MUÑOZ     |
| TONIO BANDERAS  |
| FERNANDA RUIZ   |
+-----------------+
16 rows in set (0.001 sec)
```

	FullName
1	BRAD PITT
2	SERGIO SÁNCHEZ
3	MARTA ARROYO
4	REBECA SALA
5	JUAN JIMÉNEZ
6	MONICA MARTÍN
7	BARTOLOME GOMIS
8	MARIA CEREZO
9	JESUS GILBERTO
10	LUIS TOVAR
11	FERNANDO ALONSO
12	XAVIER JIMENO
13	ANA FERNÁNDEZ
14	TONIA MUÑOZ
15	TONIO BANDERAS
16	FERNANDA RUIZ

As usual, it already exists a function capable of removing whitespaces from the beginning and ending of a string called trim, that you can also customize.

```
select concat_ws(' ',trim(name),trim(surname)) as FullName from
EMPLOYEES;
```