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A sampling of the MySQL string oriented functions.

Concat	RPad	Repeat	ELT
Concat_ws	LPad	Replace	Field
Upper	Substring	Reverse	Find in set

Lower Substring\_Index Space
RTrim Instr Ascii
LTrim Locate Char

### 1. Concat, Concat\_ws

### Demo 01: We have been using **concat** for several weeks.

Demo 02: If you want a particular string placed between each item to be concatenated, use Concat\_ws. The first argument is placed between the other items to be concatenated

It is always a good idea to check what functions do with null arguments.

First concat with a null; nulls propagate

But we get a different results with concat\_ws with nulls.

```
Select
  concat_ws(' ','a','b')
, concat_ws(' ',null,'b')
, concat_ws(' ', 'c', null,'b');
```

Demo 03: **Concat\_ws**. (The \G terminator changes the display to a vertical display. This terminator might not work in all clients.)

### 2. Binary

The default behavior for MySQL string comparisons is case insensitive. So the following query returns rows- a row with a match on 'dog' and a match on "Dog" and it would match "DOG", "DoG" etc.

#### Demo 04: Binary

We may want to use case sensitive comparisons in a particular query. We can do this by placing the keyword BINARY before the springs being compared.

### Demo 05: Binary

You can also use BINARY in the order by clause to get a case sensitive sort.

order by binary an type;

### 3. Capitalization

### Demo 06: **Upper** and **Lower** return a string in the specified case pattern. UCase and LCase are aliases.

```
+-----+
| Upper( 'MY sTrInG') | Upper( '50 Phelan Ave SF 94112') | Lower( 'MY sTrInG') |
+-----+
| MY STRING | 50 PHELAN AVE SF 94112 | my string |
```

### 4. Padding and Trimming strings

Demo 07: **RTRIM** and **LTRIM** remove blanks from the Right/Left side of the string. Note the nested functions for the third example.

### Demo 08: **RPAD** and **LPad** add characters to the edge of the string to the specified length..

### 5. Parts of strings and matches within a string

Demo 09: **SUBSTRING**: returns part of a string. Substring (strExp1, pos\_start, len) returns part of strExp1, starting from position pos\_start and continuing for len characters. Substr, mid are aliases.

```
Stating from pos_start and containing for for characters. Subsite in the analysis of the the analysis
```

### Demo 10: **LEFT** and **RIGHT** return the indicated number of characters from the Left or Right of the string.

# Demo 11: **SUBSTRING\_INDEX** (strExp1, delimiter, count) breaks the strExp1 into substrings using the delimiter and then returns the substring up to the count\_th delimiter

### Demo 12: This returns the substring up to the third comma.

### Demo 13: This returns the substring counting from the end of the string.

```
select SUBSTRING_INDEX( 'Cat,Ant,Elephant, Blue Frog, Zebra', ',', -1);
+-----+
| SUBSTRING INDEX( 'Cat,Ant,Elephant, Blue Frog, Zebra', ',', -1) |
```

+	+
Zebra	1
+	+

### Demo 14: This uses 'a' as the delimiter. This is case dependent..

### Demo 15: **INSTR** returns the location of the substring in the target string.

# Demo 16: **LOCATE** also returns the location of the substring in the target string. With this function the search argument comes first. You can also add a third argument which states the position in which to start the search.

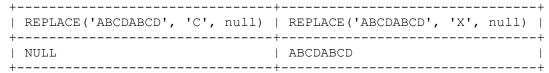
### 6. Changing the string contents

#### Demo 17: **REPLACE** replaces every occurrence of the second argument with the third argument.

## Demo 18: You can use replace to remove patterns by using a zero length string for the third argument.

```
+-----+
| REPLACE('ABCDABCD', 'CD', '') |
+-----+
| ABAB |
```

#### Replace with a null third argument



Demo 19: **INSERT**(strExp1, pos\_start, len, StrExp2,) starts at position pos\_start in strExp1 and removes len characters. It then puts strExp2 in that place in the string. Len can be 0 which results in just an insert.

### 7. Misc string functions

Demo 20: **Length**: Length(strExp) returns the number of characters in the expression. If the argument is a null string, Length returns null (not 0).

```
+-----+
| length(' abc ') | length('') | length(null) |
+-----+
| 9 | 0 | NULL |
```

### Demo 21: **REPEAT** duplicates the first argument the indicated number of times

```
+-----+
| repeat('*-* ',3) |
+------+
| *-* *-* *-* |
```

### Demo 22: **REVERSE** reverses the characters in the string

```
+-----+
| reverse('abcdefgh') |
+-----+
| hgfedcba |
+-----+
```

### Demo 23: **SPACE** creates a string of spaces of the indicated length

### Demo 24: **ASCII** returns the ASCII number corresponding to the first character in the argument string

+	ascii('Dog')	ascii('dog')	ascii('')	ascii(null)
	68 			

Demo 25: **CHAR** returns the character associated with an ASCII number

```
+-----+
| char(68) | char(69) | char(70) | char(50) | char(123) | char(124) |
+-----+
| D | E | F | 2 | { | | |
```

#### Demo 26: FIELD

The Field function gets two or more arguments. The first argument ids the value you are trying to match, the second and other arguments are possible matches. If the first argument is found, then the position of that argument is returns, otherwise 0.

Nulls always need testing; if the first argument is null, then the function returns 0, not a null.

| Field(0,1002,120,'ant',12, 2012,12) | +-----+

### Demo 27: ELT

ELT is the complement of Field. The first argument is a number and the rest of the arguments are values- the function returned the value that corresponds to the first argument.

#### Demo 28: FIND\_IN\_SET

The FIND\_IN\_SET function gets two arguments, the first is a string and the second is a comma-separated list. (a set value). The function returns the number of the first element in the list that matches the first argument. Avoid spaces in the literals. The first argument should not contain a comma.

First- two examples with string literals.

#### Demo 29: How could we use this with a table?

Set a variable to the list of animal types we are considering.

```
set @list = 'cat, dog, bird';
```

Then use that variable as a function argument,

### We could use the function in the Where clause;

#### Demo 30: Using an In list

We could do the same logic with an IN list. With the In List, each different animal type value has to be independently delimited. With the FIND\_IN\_SET function, we have one string. This approach is often easier when the list of animal types is coming from an external application. The list is a comma-separated values (CSV) string; csv strings occur in many programming situations.

```
Select an_name, an_type
From vt_animals
Where an type in ('cat', 'dog', 'bird');
```