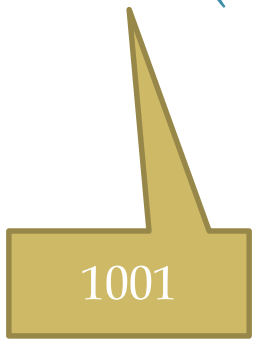
Outline

- In this tutorial we will see some String and Math functions

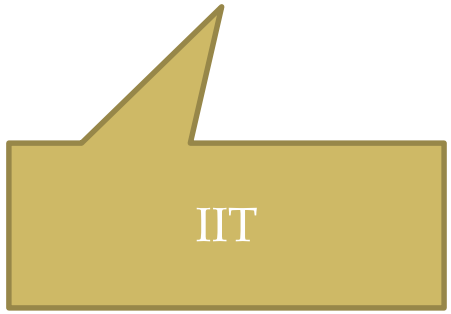
String Functions

- ASCII(str) returns numeric value of left most character of the string *str*
  - Example: **select ascii**('India')

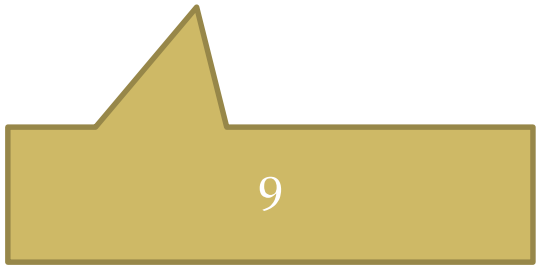
- BIN(N): returns a string representation of the binary value of ***N***
  - Example: **select bin**(9)



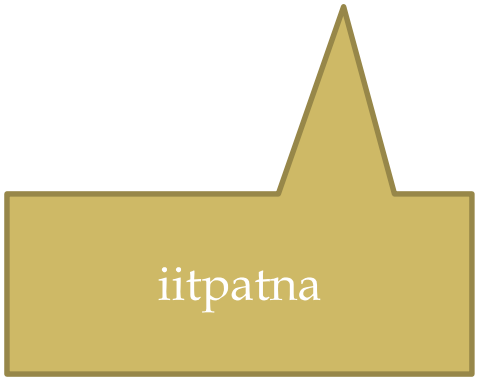
- CHAR() interprets each argument as an integer returns a string corresponding to each integer
  - Example: **select char**(73,73,84)



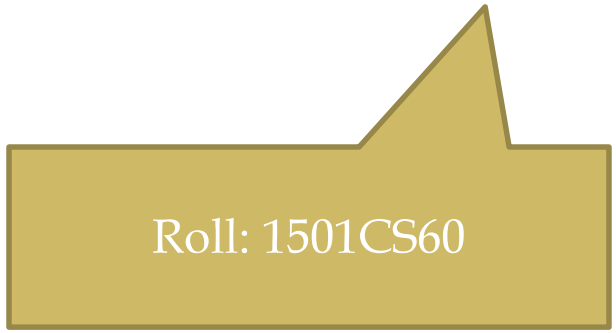
- CHAR_LENGTH(str): returns the length of the string ***str***. It is measured as the no. of characters
  - Example: **select char_length**('iit patna')



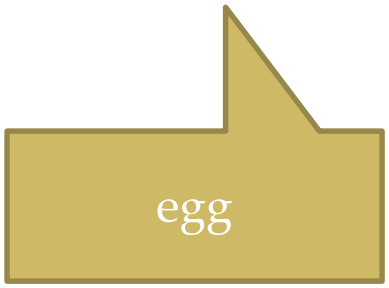
- CONCAT (str1, strg2, …): returns the string that results from concatenating the strings str1, str2, …
  - Example: **select concat** (‘iit’, ‘patna’)



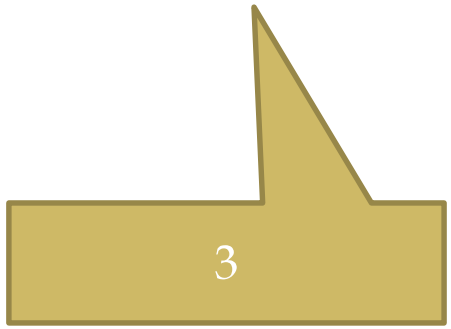
- CONCAT_WS(separator, str1, str2, …): a special form of CONCAT() function. The first argument is separator for the rest of the arguments.
  - Example: **select concat_ws** (‘: ’, ‘Roll’, ‘1501CS60’)



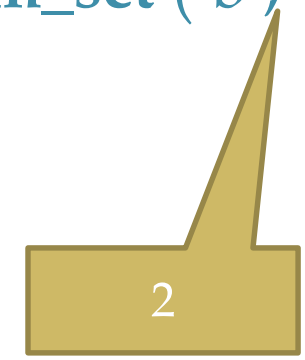
- ELT(n, str1, str2, str3, …): returns the n^{th} element of the list of the strings ***str1, str2, str3,*** …
  - Example: **select elt** (2, ‘apple’, ‘egg’, ‘mango’)



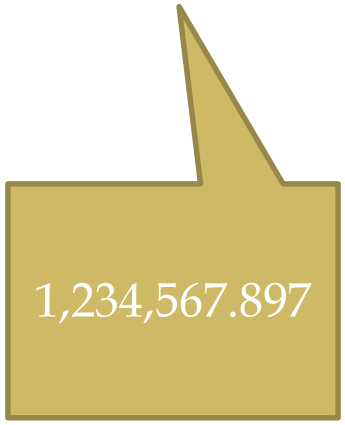
- FIELD (*str, str1, str2, str3, …*): returns the index position of the ***str*** in the ***str1, str2, str3, ...***
  Returns 0 if ***str*** not found
  - Example: **select field**('c', 'a', 'b', 'c')



- FIND_IN_SET(str, strlist): returns a value in the range of ***1*** to ***N*** if the string ***str*** is in the list of ***strlist*** consisting ***N*** substrings
  - Example: **select find_in_set** ('b', 'a,b,c,d')



- FORMAT (x,d): formats the number ***x*** to a format like '#,###,###.##' rounded to ***d*** decimal places
  - Example: **select format** (1234567.896754, 3)

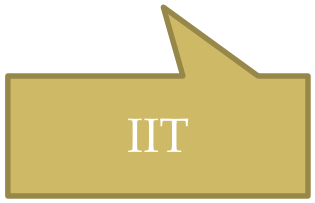


- INSERT(***str, pos, len, newstr***)
- Returns the string ***str***, with the substring beginning at position ***pos*** and ***len*** characters long replaced by the string ***newstr***.
- Returns the original string if ***pos*** is not within the length of the string.
- Replaces the rest of the string from position ***pos*** if ***len*** is not within the length of the rest of the string.
- Returns NULL if any argument is NULL.
  - Example: **select insert** ('iit patna', 4, 200, 'best')

- INSTR(***str, substr***): Returns the position of the first occurrence of substring ***substr*** in string ***str***. This is the same as the two-argument form of LOCATE(substr, str), except that the order of the arguments is reversed
  - Example: **select instr**('iit', 't')
  - Example: **select locate** ('t', 'iit')

- LCASE (str) or LOWER(str): returns the lower case version of the string *str*
  - Example: **select lower**('IIT')

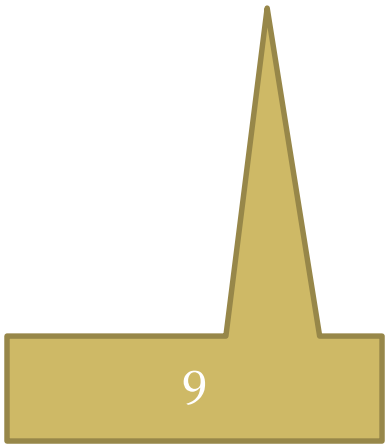
- UCASE (str) or UPPER (str): returns the upper case version of the string *str*
  - Example: **select upper**('iit')



- LEFT (str, len): returns the leftmost ***len*** characters from the string ***str*** or NULL if argument is NULL
  - Example: **select left** ('iit patna', 3)

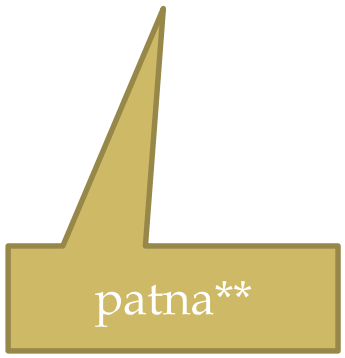
- RIGHT(str, len): returns the rightmost ***len*** characters from the string ***str*** or NULL if argument is NULL
  - Example: **select right**('patna', 3)

- LENGTH (str): returns the length of the string ***str***
  - Example: **select length** ('iit patna')



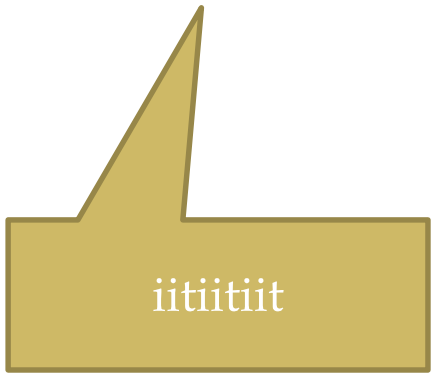
- LPAD(***str, len, padstr***): Returns the string ***str,*** left-padded with the string ***padstr*** to a length of ***len*** characters. If ***str*** is longer than ***len,*** the return value is shortened to ***len*** characters
  - Example: **select lpad**('iit patna', 12, '*')

- RPAD (str, len, padstr): returns the string ***str***, rightpadded with the string ***padstr*** to a length of ***len*** characters. If ***str*** is longer than ***len***, the return value is shortened to ***len*** characters.
  - Example: **select rpad**('patna', 7, '*')



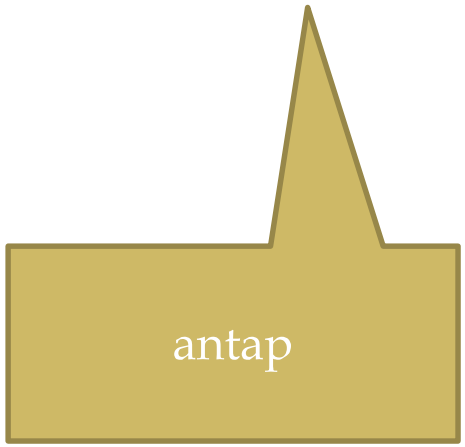
- LTRIM(***str***): Returns the string ***str*** with leading space characters removed.
  - Example: **select ltrim** (‘ iit’)
- RTRIM (str): returns the string ***str*** with trailing space characters removed
  - Example: **select rtrim** (‘ patna ’)
- TRIM(str): returns str by removing all leading and trailing space characters
  - Example: **select trim** (‘ iit patna ’)

- REPEAT(***str,count***):_Returns a string consisting of the string ***str*** repeated ***count*** times.
  If ***count*** is less than 1, returns an empty string.
  Returns NULL if ***str*** or ***count*** are NULL.
  - Example: **select repeat** (‘iit ’, 3)

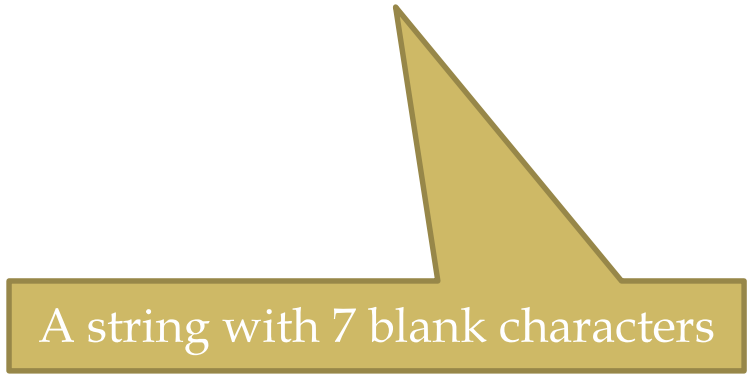


- REPLACE(***str, from_str, to_str***): Returns the string ***str*** with all occurrences of the string ***from_str*** replaced by the string ***to_str***.
- The function performs a case-sensitive match when searching for ***from_str***.
  - Example: **select replace** ('iit patna', 'i', 'I')

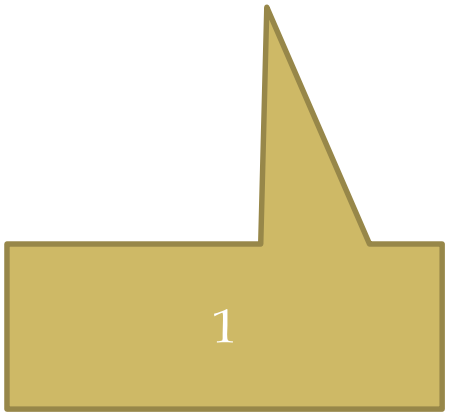
- REVERSE(***str***): Returns the string ***str*** with the order of the characters reversed.
  - Example: **select reverse** ('patna')



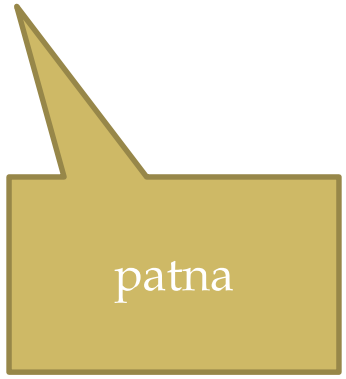
- SPACE (n): returns a string consisting of ***n*** space characters
  - Example: **select space** (7)



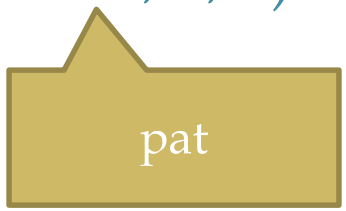
- STRCMP(expr1, expr2): returns 0 if expr1 and expr2 are same, returns -1 if |expr1| < |expr2| otherwise 1
  - Example: **select strcmp** ('iitp', 'iit')



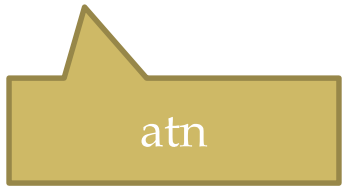
- SUBSTR (str, pos): returns the substring from string ***str*** starting from the position pos
  - Example: **select substr**('iit patna', 5)



- SUBSTR (str, pos, len): returns a substring of *len* characters from the string ***str*** starting from the position pos
  - Example: **select substr**('iit patna', 5, 3)



  - A negative value in the pos indicates the position of the string from the end
  - Example: **select substr**('iit patna', -4, 3)



Math Functions

- ABS(n): returns the absolute value of a number
  - Example: select abs(-1.72)

1.72

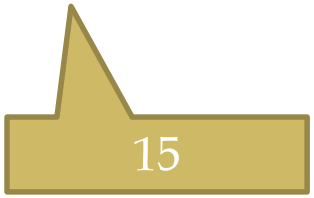
- CEIL(n): returns the smallest integer value not less than n
  - Example: select ceil(2.73)

3

- FLOOR(n): returns the largest integer value not greater than n
  - Example: select floor(2.73)

2

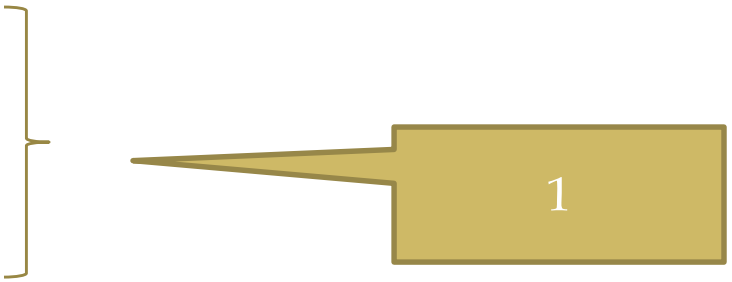
- CONV(n, from_base, to_base): converts a number from one base to another
  - Example: select conv(1111,2,10)



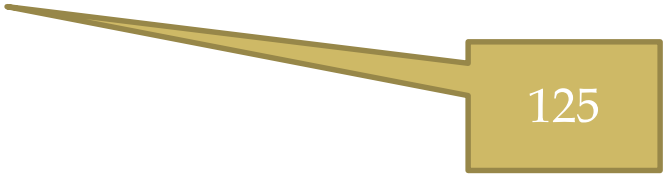
- DIV operator is used to perform integer division
  - Example: select 102 div 5

- '/' operator is also used to perform division
  - Example: select 102 / 5

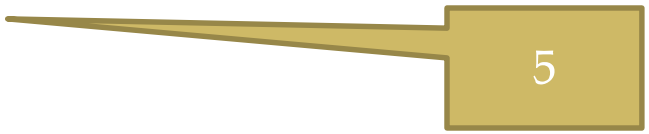
- MOD(): returns the remainder of a number divided by another number
- MOD(n,m) or n%m or n MOD m
  - Example:
  - select mod(10,3)
  - select 10%3
  - select 10 mod 3



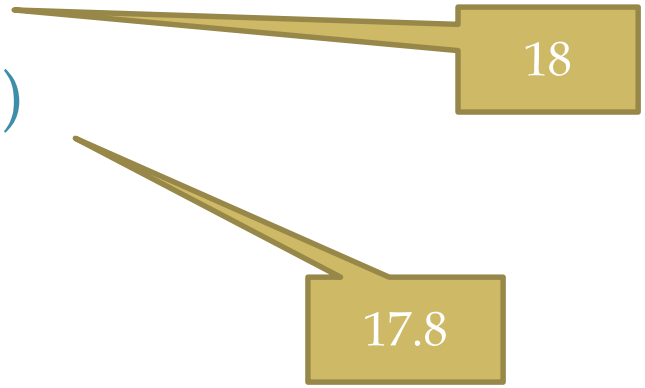
- POW(): returns the value of a number raised to the power of another number
  - Example: select pow(5,3)



- SQRT(): returns the square root of a non-negative number
  - Example: select sqrt(25)



- ROUND(): rounds a number specified as an argument up to a number specified as another argument
- ROUND(n,[d]), here n is the number which will be rounded upto d decimal places
  - select round(17.78)
  - Select round(17.78,1)



- RAND(): returns a random floating point value between the range 0 and 1
  - Example: select rand(), rand();

Two random number are generated

- RAND(seed): returns a repeatable random floating point value between the range 0 and 1
  - Example: select rand(2), rand(2);

Same random number generated twice