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UCS1412 – Database Lab | IV Semester

SQL Pre-defined Functions and TCL Statements

Syntax:

I. CHARACTER FUNCTIONS

1) Case-manipulation functions

a. LOWER(column/expression)

b. UPPER(column/expression)

c. INITCAP(column/expression)

2)Character-manipulation functions

a) CONCAT(column1/expression1,column2/expression2) – concatenates first character value to the second character value.

Ex: CONCAT('Hello','World') – HelloWorld

b) SUBSTR(column/expression,m [,n]) where m-starting position, n-characters long. If m is negative, the count starts from end of the character string

Ex: SUBSTR('HelloWorld',1,5) – Hello

c) LENGTH(column/expression) – returns number of characters in the expression

Ex: LENGTH('HelloWorld') – 10

d) INSTR(column/expression, 'string', [,m], [n]) – returns numeric position of a named string where m – is a position to start searching, and the n - occurrence of the string [by def: m,n=1]

Ex: INSTR('HelloWorld', 'W') – 6

e) LPAD | RPAD(column/expression, n, 'string') – pads the character(string) value left | right – justified to a total width of n character positions

Ex: LPAD(salary,10, '$') -- $$$$$24000

f) LTRIM | RTRIM(*char*, *set*) – returns *char*, with all the leftmost | rightmost charactes that appear in set removed

g) TRIM(leading/trailing/both, trim-character FROM trim_source)

h) REPLACE(text, search_string, relacement_string)

II – NUMBER (Arithmetic) FUNCTIONS

1. ROUND(column | expression, n) – rounds to n decimal places. If n omitted, no decimal places
2. TRUNC(column | expression, n) – truncates the value to n decimal places
3. MOD(m,n) – returns the remainder of m divided by n
4. ABS(n) – returns absolute value of n
5. FLOOR(n) – returns largest integer equal to or less than n. Ex:FLOOR(15.7) = 15
6. CEIL(n) – returns smallest integer greater than or equal to n. Ex:CEIL(15.7) = 16
7. SQRT(n) – returns square root of n. SQRT returns a “real” result
8. POWER(m,n) – returns m raised to the n^{th} power

III – DATE FUNCTIONS

1. ADD_MONTHS(d, n) – returns the date d plus n months
2. MONTHS_BETWEEN(date1, date2) – returns number of months between dates *date1* and *date2*
3. SYSDATE – returns current date and time, no arguments required
4. LAST_DAY(date) – returns the date of the last day of the month
5. NEXT_DAY(*date*, *char*) – returns the date of the first weekday named by *char* that is later than the *date*. Ex: NEXT_DAY(SYSDATE, 'MONDAY')

IV – GROUP FUNCTIONS

- All group functions ignore null values
- DISTINCT makes the function consider only non-duplicate values; by default, duplicates were considered

1. AVG([DISTINCT] n) – average value of n
2. COUNT({* | [DISTINCT] expr}) – three formats
   COUNT(*) - returns number of rows including duplicate rows and rows containing null values
   COUNT(expr) – returns the number of rows with non-null values in the coulmn given by *expr*

COUNT(DISTINCT expr) – returns the number of unique, non-null values in the column identified by *expr*

3. MAX([DISTINCT] expr) - maximum value of expr
4. MIN([DISTINCT] expr) - minimum value of expr
5. SUM([DISTINCT] n) - sum values of n

V – TCL – Transaction Control Language Statements

An automatic commit occurs under the following circumstances: DDL and DCL statement is issued, normal exit from SQL Plus without issuing COMMIT or ROLLBACK

1. COMMIT – ends the current transaction by making all data changes permanent in database
2. SAVEPOINT name – marks a savepoint within the current transaction with some name
3. ROLLBACK – ends the current transaction by discarding all changes done to data
4. ROLLBACK TO SAVEPOINT name – rolls back the current transaction to the specified savepoint, therby discarding any changes and or savepoints created after the savepoint to which you are rolling back

Note:

1. Character, number, date functions are called single-row functions
2. Group / aggregate functions are called multi-row functions