ClickHouse 常用函数学习笔记

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编制日期：2021/11/10-12/10

一、检测函数

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| --- | --- | --- |
| 函数名 | 示例 | 备注 |
| toTypeName | SELECT toTypeName(0); | UInt8(三位数为8) |
| SELECT toTypeName(-0); | Int8 |
| SELECT toTypeName(-343); | Int16 |
| SELECT toTypeName(12.43); | Float64 |
| SELECT toTypeName(toFloat32(12.43)); | Float32 |
| SELECT toTypeName(12.34343); | Float64 |
| SELECT toTypeName(toDateTime(1502396027)); | DateTime |

二、数值函数

|  |  |  |
| --- | --- | --- |
| 函数名 | 示例 | 备注 |
| plus | SELECT plus(12, 21), plus(10, -10); | 和 |
| Minus | SELECT minus(10, 5), minus(10, -10); | 差 |
| multiply | SELECT multiply(12, 2), multiply(12, -2); | 积 |
| divide | SELECT divide(12, 4), divide(-4.5, 3); | 除 |
| modulo | SELECT modulo(10, 3),modulo(10.5, 3); | 求余 |
| negate | SELECT negate(10), negate(-10); | 取反 |
| abs | SELECT abs(-10), abs(10); | 绝对值 |
| gcd | SELECT gcd(12, 24), gcd(-12, -24) | 最大公约数 |
| lcm | SELECT lcm(12, 24), lcm(-12, -24) | 最小公倍数 |
|  |  |  |

三、比较函数

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| --- | --- | --- |
| 函数名 | 示例 | 备注 |
| ==、！=、<> | SELECT 12 == 12, 12 != 10, 12 <> 12; | 相等、不相等 |
| Equals、notEquals | SELECT equals(12, 12), notEquals(12, 10); | 相等、不相等 |
| greater | SELECT greater(12, 10), greater(10, 12); | 大于 |
| greaterOrEquals | SELECT greaterOrEquals(12,10), greaterOrEquals(12,12); | 大于等于 |
| less | SELECT less(12, 21), less(12, 10); | 小于 |
| lessOrEquals | SELECT lessOrEquals(12, 120), lessOrEquals(12, 12); | 小于等于 |

说明：始终返回0表示false 或 1表示true

四、逻辑函数

|  |  |  |
| --- | --- | --- |
| 函数名 | 示例 | 备注 |
| or | SELECT 12==12 or 12!=10;  SELECT or(equals(12, 12), notEquals(12, 10)); | 或 |
| and | SELECT 12==12 and 12!=10;  SELECT and(equals(12, 12), notEquals(12, 10)); | 与 |
| not | SELECT not 12, not 0;  SELECT not(12), not(0); | 非 |

说明：逻辑操作符（返回0表示false 或 1表示true）

五、转换函数

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| --- | --- | --- |
| 函数名 | 示例 | 备注 |
| toInt8 | toInt8(12.3334343) | 数值转8位整数 |
| toFloat32 | toFloat32(10.001) | 数值转32位浮点数 |
| toFloat64 | toFloat64(1.000040) | 数值转64位浮点数 |
| toString | toString(now()) | 日期转字符 |
| cast | SELECT  '2016-06-15 23:00:00' AS timestamp,  cast(timestamp AS DateTime) AS datetime,  cast(timestamp AS Date) AS date,  cast(timestamp, 'String') AS string,  cast(timestamp, 'FixedString(22)') AS fixed\_string; | 强制类型转换 |
| toIntervalMonth | WITH  toDate('2019-01-01') AS date,  INTERVAL 1 WEEK AS interval\_week,  toIntervalWeek(1) AS interval\_to\_week,  toIntervalMonth(1) AS interval\_to\_month  SELECT  date + interval\_week,  date + interval\_to\_week,  date + interval\_to\_month; | 字符转日期 |
| toIntervalHour | WITH  toDateTime('2019-01-01 12:10:10') as datetime,  INTERVAL 1 HOUR AS interval\_hour,  toIntervalHour(1) as invterval\_to\_hour  SELECT  plus(datetime, interval\_hour),  plus(datetime, invterval\_to\_hour); | 字符转日期时间 |
| toUnixTimestamp | SELECT  toDateTime('2019-07-30 10:10:10') AS time,  -- 将DateTime转换成Unix时间戳  toUnixTimestamp(time) as unixTimestamp,  -- 保留 时-分-秒  toDate(time) as date\_local,  -- 将DateTime中的日期转换为一个固定的日期，同时保留时间部分  toTime(time) as date\_time,。  -- 获取年份，月份，季度，小时，分钟，秒钟  toYear(time) as get\_year,  toMonth(time) as get\_month,  -- 一年分为四个季度。1（一季度:1-3）,2（二季度:4-6）,3（三季度:7-9）,4（四季度:10-12）  toQuarter(time) as get\_quarter,  toHour(time) as get\_hour,  toMinute(time) as get\_minute,  toSecond(time) as get\_second,  -- 获取 DateTime中的当前日期是当前年份的第几天，  -- 当前月份的第几日，当前星期的周几  toDayOfYear(time) as "当前年份中的第几天",  toDayOfMonth(time) as "当前月份的第几天",  toDayOfWeek(time) as "星期",  toDate(time, 'Asia/Shanghai') AS date\_shanghai,  toDateTime(time, 'Asia/Shanghai') AS time\_shanghai,  -- 得到当前年份的第一天,当前月份的第一天  -- 当前季度的第一天，当前日期的开始时刻  toStartOfYear(time),  toStartOfMonth(time),  toStartOfQuarter(time),  toStartOfDay(time) AS cur\_start\_daytime,  toStartOfHour(time) as cur\_start\_hour,  toStartOfMinute(time) AS cur\_start\_minute,  -- 从过去的某个固定的时间开始，以此得到当前指定的日期的编号  toRelativeYearNum(time),  toRelativeQuarterNum(time); | 字符转日期时间 |
| toISOYear | SELECT toDateTime('2019-07-30 14:27:30') as time, toISOYear(time) AS iso\_year, toISOWeek(time) AS iso\_week,  -- 返回当前时间yyyy-MM-dd HH:mm:ss now() AS cur\_dateTime1,  -- 其功能与'toDate(now())'相同 today() AS cur\_dateTime2,  -- 当前日期的上一天 yesterday() AS yesterday,  -- 出现异常！！将时间向前取整半小时 -- timeSlot(1) AS timeSlot\_1, toDate(time) as getY\_M\_d; |  |
| toYYYYMMDD | SELECT now() as nowTime, -- 将Date或DateTime转换为包含年份和月份编号  -- 的UInt32类型的数字（YYYY \* 100 + MM） toYYYYMMDDhhmmss(nowTime), toYYYYMMDD(nowTime), toYYYYMM(nowTime); |  |
| formatDateTime | SELECT  now() as now\_time,  toDateTime('2019-07-31 18:20:30') AS def\_datetime,  formatDateTime(now\_time, '%D')  AS now\_time\_day\_month\_year,-- 07/30/19  -- toDateTime('2019-07-31 18:20:30',  'Asia/Shanghai') AS def\_datetime1,  -- 指定时区  formatDateTime(def\_datetime,'%Y')  AS def\_datetime\_year,  -- 2019（指定日期为2019年）  formatDateTime(def\_datetime, '%y')  AS def\_datetime\_year\_litter,  -- 19（指定日期为19年,Year, last two digits (00-99),本世纪的第19年）  formatDateTime(def\_datetime, '%H') AS hour24,  -- 18 下午六点  formatDateTime(def\_datetime, '%I') AS hour12,  -- 06下午六点  formatDateTime(def\_datetime, '%p') AS PMorAM,  -- 指定时间是上午还是下午  formatDateTime(def\_datetime, '%w')  AS def\_datetime\_get\_curWeek,-- 3(指定日期为星期三)  formatDateTime(def\_datetime, '%F')  AS def\_datetime\_get\_date,-- 2019-07-31  formatDateTime(def\_datetime, '%T')  AS def\_datetime\_get\_time,-- 18:20:30  formatDateTime(def\_datetime, '%M')  AS def\_datetime\_get\_minute,  -- 20(得到指定事件的“分”，minute (00-59))  formatDateTime(def\_datetime, '%S')  AS def\_datetime\_get\_second;  -- 30(得到指定事件的“秒”，second (00-59)) |  |

六、正则表达式

七、日期函数

八、窗口函数

八、参考

<https://www.cnblogs.com/superdrew/p/11279663.html>

<https://blog.csdn.net/vkingnew/article/details/107618128>

<https://www.cnblogs.com/pengpenghuhu/p/14546305.html>

DBeaver6.1.2操作快捷键：

-- 常用快捷键须知：（Ctrl + Shift + L 显示快捷键列表）  
-- 1.删除光标所在行：Ctrl + D  
-- 2.复制光标所在行：Ctrl + Alt + ↓  
-- 3.移动光标所在行：Ctrl + Shift + ↑/↓  
-- 4.缩小SQL编辑器的文本字体大小：Ctrl + -/+  
-- 5.查找：Ctrl + F  
-- 6.选中上或下的SQL执行语句：Alt + ↑/↓  
-- 7.执行当前光标所在SQL语句（无论是否格式化过，前提是此SQL语句和上一条有空行或者上一条SQL语句有分号“;”隔开）