Distribution of Parameters for Generated SQL Queries on the TPC-H Database

```
## Scenario: 1-6jp_ujjp__g_hOss_hOnss

## Scale factor: 10 GB

## The 1000-query pack was generated on: 2023-11-10

## First column ('Query parameter or value') displays either:

## - a parameter name, or

## - a value of the current parameter (only for low-cardinality parameters).

## Second column ('Descriptive statistics') displays:

## - for low cardinality parameters: frequency and proportion from total (of 1000 queries)

## - for higher cardinality parameters: [min, median, max] mean / SD
```

| Query parameter or value | Descriptive statistics | |
|--------------------------------|------------------------|--|
| SELECT_n_of_columns | [1, 9, 178] 17 / 25 | |
| SELECT_n_of_non_aggr_funcLTRIM | | |
| 0 | 590 (59%) | |
| 1 | 273~(27%) | |
| 2 | 77 (7.7%) | |
| 3 | $36 \ (3.6\%)$ | |
| 4 | 11 (1.1%) | |
| 5 | 4~(0.4%) | |
| 6 | 5~(0.5%) | |
| 7 | 3~(0.3%) | |
| g | 1 (0.1%) | |
| SELECT_n_of_non_aggr_funcRTRIM | ` , | |
| 0 | 624~(62%) | |
| 1 | 249~(25%) | |
| 2 | 70 (7.0%) | |
| | | |

| Query parameter or value | Descriptive statistics |
|---|--|
| 3 | 29 (2.9%) |
| 4 | $16\ (1.6\%)$ |
| 5 | 4 (0.4%) |
| 6 | 4 (0.4%) |
| γ | 2(0.2%) |
| g | 2(0.2%) |
| SELECT_n_of_non_aggr_funcSUBSTR | , |
| 0 $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ | 590 (59%) |
| 1 | $268\ (27\%)$ |
| 10 | 1 (0.1%) |
| 2 | 92 (9.2%) |
| <i>3</i> | 27 (2.7%) |
| 4 | 6 (0.6%) |
| 7 5 | 7 (0.7%) |
| $\frac{6}{6}$ | 8 (0.8%) |
| 8 | 1 (0.1%) |
| SELECT_n_of_non_aggr_funcUPPER | $[0.00, 0.00, 9.00] \ 0.60 \ / \ 1.09$ |
| SELECT_n_of_non_aggr_funcLOWER | [0.00, 0.00, 12.00] $[0.68 / 1.17]$ |
| SELECT_n_of_non_aggr_funcDAY | [0.00, 0.00, 12.00] 0.00 / 1.11 |
| 0 | 876 (88%) |
| 1 | 88 (8.8%) |
| 2 | 21 (2.1%) |
| ~ 3 | 6 (0.6%) |
| | 5(0.5%) |
| 4 5 | 2(0.2%) |
| $\frac{3}{6}$ | 2(0.2%) $2(0.2%)$ |
| SELECT_n_of_non_aggr_funcFLOOR | 2 (0.270) |
| | 900 (90%) |
| 1 | 74 (7.4%) |
| 2 | 17(1.7%) |
| $rac{z}{3}$ | 4(0.4%) |
| | 5(0.5%) |
| 4 SELECT_n_of_non_aggr_funcMONTH | [0.00, 0.00, 11.00] 0.39 / 1.07 |
| SELECT_n_of_non_aggr_funcABS | [0.00, 0.00, 11.00] 0.39 / 1.07 |
| 0 | 915 (92%) |
| 1 | 69 (6.9%) |
| 2 | 11 (1.1%) |
| $rac{z}{3}$ | 2(0.2%) |
| | 3(0.3%) |
| 4 | 3 (0.3/0) |
| SELECT_n_of_non_aggr_funcDOW | QA2 (QA07) |
| 0 | 843 (84%) |
| 1 | 109 (11%) |
| 2 | 26 (2.6%) |
| 3 | 10 (1.0%) |
| 4 | 9(0.9%) |
| 5 | $2\;(0.2\%)$ |

| Query parameter or value | Descriptive statistics |
|--|--|
| 7 | 1 (0.1%) |
| SELECT_n_of_non_aggr_funcYEAR | |
| 0 | 815 (82%) |
| 1 | $115\ (12\%)$ |
| 2 | $35\ (3.5\%)$ |
| 3 | 16(1.6%) |
| 4 | 9~(0.9%) |
| 5 | 3~(0.3%) |
| 6 | 6~(0.6%) |
| 7 | 1(0.1%) |
| SELECT_n_of_non_aggr_funcROUND | |
| 0 | 910 (91%) |
| 1 | 75 (7.5%) |
| 2 | 13 (1.3%) |
| 3 | 1~(0.1%) |
| 4 | 1~(0.1%) |
| SELECT_n_of_non_aggr_funcLOG | |
| 0 | 852 (85%) |
| 1 | 101 (10%) |
| 2 | 29 (2.9%) |
| 3 | 10 (1.0%) |
| 4 | 4~(0.4%) |
| 5 | 3~(0.3%) |
| 6 | 1~(0.1%) |
| $SELECT_n_of_non_aggr_func__SQRT$ | |
| 0 | 781 (78%) |
| 1 | $154 \ (15\%)$ |
| 2 | 29~(2.9%) |
| 3 | $17 \ (1.7\%)$ |
| 4 | $12 \ (1.2\%)$ |
| 5 | 6~(0.6%) |
| 7 | 1~(0.1%) |
| SELECT_n_of_non_aggr_funcTRUNC | |
| 0 | 893 (89%) |
| 1 | 91 (9.1%) |
| 2 | $10 \ (1.0\%)$ |
| 3 | 5 (0.5%) |
| 4 | 1 (0.1%) |
| SELECT_n_of_all_non_aggr_func | [0, 3, 80] 5 / 9 |
| SELECT_n_of_aggr_funcMAX | [0.00,0.00,13.00]0.82/1.96 |
| SELECT_n_of_aggr_funcMIN | [0.00, 0.00, 13.00] 0.86 / 1.93 |
| SELECT_n_of_aggr_funcAVG | |
| 0 | 936 (94%) |
| 1 | 44 (4.4%) |
| 2 | 16 (1.6%) |
| 3 | 3~(0.3%) |

| Query parameter or value | Descriptive statistics |
|-----------------------------------|---|
| 4 | 1 (0.1%) |
| SELECT_n_of_aggr_funcCOUNT_DI | , , |
| SELECT_n_of_aggr_funcCOUNT | [0.00, 0.00, 15.00] 1.01 / 2.18 |
| SELECT_n_of_aggr_funcSUM | |
| 0 | 947~(95%) |
| 1 | 32 (3.2%) |
| 2 | 10 (1.0%) |
| 3 | 5~(0.5%) |
| 4 | 5~(0.5%) |
| 5 | 1 (0.1%) |
| SELECT_n_of_all_aggr_func | $[0.0,\ 3.0,\ 15.0]\ 3.6\ /\ 3.2$ |
| FROM_n_of_join_paths | |
| 1 | $153 \; (15\%)$ |
| 2 | 182 (18%) |
| 3 | $158 \; (16\%)$ |
| 4 | 172 (17%) |
| 5 | $157 \ (16\%)$ |
| 6 | 178 (18%) |
| FROM_n_of_super_joinsFULL | |
| 0 | 547 (55%) |
| 1 | $305 \ (31\%)$ |
| 2 | 112 (11%) |
| 3 | 31 (3.1%) |
| 4 | 5~(0.5%) |
| FROM_n_of_super_joinsLEFT | F.CO. (F.CO.) |
| 0 | 560 (56%) |
| 1 | 314 (31%) |
| 2 3 | $99 (9.9\%) \ 24 (2.4\%)$ |
| | 3 (0.3%) |
| FROM_n_of_super_joinsRIGHT | 3 (0.370) |
| 0 | 538 (54%) |
| 1 | 323 (32%) |
| 2 | 114 (11%) |
| 2 3 | 24 (2.4%) |
| 4 | 1 (0.1%) |
| FROM_n_of_joinsINNER | [0.00, 3.00, 13.00] $[0.00, 3.00, 13.00]$ $[0.00, 3.00, 13.00]$ |
| FROM_n_of_joinsRIGHT | [0.00, 3.00, 13.00] $[0.37 / 2.51]$ |
| FROM_n_of_processed_rows | [5, 95,982,627, 458,882,983] 125,282,214 / 99,145,469 |
| WHERE n of predicates | [0.00, 3.00, 13.00] 3.80 / 2.93 |
| WHERE_n_of_attribs_of_typecharact | |
| 0 | 380 (38%) |
| 1 | 284 (28%) |
| 2 | 177 (18%) |
| 3 | $96\ (9.6\%)$ |
| 4 | $46\ (4.6\%)$ |
| | |

| Query parameter or value | Descriptive statistics |
|--|--------------------------------------|
| 5 | 14 (1.4%) |
| 6 | $3\;(0.3\%)$ |
| $WHERE_n_of_attribs_of_type__integer$ | |
| 0 | 385 (39%) |
| 1 | 285~(29%) |
| 2 | 175 (18%) |
| 3 | 94 (9.4%) |
| 4 | $47 \; (4.7\%)$ |
| 5 | $13 \ (1.3\%)$ |
| 6 | 1 (0.1%) |
| WHERE_n_of_attribs_of_typecharacter | |
| 0 | 661~(66%) |
| 1 | 239~(24%) |
| 2 | 77 (7.7%) |
| 3 | $22\ (2.2\%)$ |
| 4 | 1 (0.1%) |
| $WHERE_n_of_attribs_of_type__date$ | |
| 0 | 761~(76%) |
| 1 | 197~(20%) |
| 2 | $35 \ (3.5\%)$ |
| 3 | 7 (0.7%) |
| WHERE_n_of_attribs_of_typenumeric | |
| 0 | 540 (54%) |
| 1 | 307 (31%) |
| 2 | 101 (10%) |
| 3 | 43 (4.3%) |
| 4 | $7\;(0.7\%)$ |
| 5 | 2~(0.2%) |
| WHERE_n_of_pkey_attribs | |
| 0 | 553~(55%) |
| 1 | 288 (29%) |
| 2 | 113 (11%) |
| 3 | $41 \ (4.1\%)$ |
| 4 | 5~(0.5%) |
| WHERE_n_of_connect_OR | [0.00, 1.00, 10.00] 2.19 / 2.37 |
| $WHERE_n_of_operators__greater_or_less$ | |
| 0 | 353~(35%) |
| 1 | 271 (27%) |
| 2 | 177 (18%) |
| 3 | 98 (9.8%) |
| 4 | 52~(5.2%) |
| 5 | $35\ (3.5\%)$ |
| 6 | $9\;(0.9\%)$ |
| γ | $3\ (0.3\%)$ |
| 8 | $2\;(0.2\%)$ |
| WHERE_n_of_operatorsin | |

| Query parameter or value | Descriptive statistics |
|--------------------------------------|------------------------|
| 0 | 533 (53%) |
| 1 | 273 (27%) |
| 2 | 135 (14%) |
| 3 | 44 (4.4%) |
| 4 | $13\ (1.3\%)$ |
| 5 | 1~(0.1%) |
| 6 | 1~(0.1%) |
| WHERE_n_of_operatorslike | |
| 0 | 767 (77%) |
| 1 | 192 (19%) |
| 2 | 34 (3.4%) |
| 3 | 6~(0.6%) |
| 4 | 1~(0.1%) |
| $WHERE_n_of_operators__between$ | |
| 0 | 535 (54%) |
| 1 | 284~(28%) |
| 2 | 124~(12%) |
| 3 | 44 (4.4%) |
| 4 | 8~(0.8%) |
| 5 | 4~(0.4%) |
| 6 | 1~(0.1%) |
| WHERE_n_of_non_aggr_funcSQRT | |
| 0 | 863~(86%) |
| 1 | 124~(12%) |
| 2 | 11 (1.1%) |
| 3 | $2\;(0.2\%)$ |
| WHERE_n_of_non_aggr_funcDAY | 4 |
| 0 | 947 (95%) |
| 1 | 53~(5.3%) |
| WHERE_n_of_non_aggr_funcYEAR | ana (aa) |
| 0 | 959 (96%) |
| 1 | 41 (4.1%) |
| WHERE_n_of_non_aggr_funcTRUNC | 272 (2701) |
| 0 | 950 (95%) |
| 1 | 50~(5.0%) |
| WHERE_n_of_non_aggr_funcLOG | 000 (0107) |
| 0 | 908 (91%) |
| 1 | 85 (8.5%) |
| 2 | 5(0.5%) |
| 3 | 2~(0.2%) |
| WHERE_n_of_non_aggr_funcDOW | 060 (060/) |
| 0 | 960 (96%) |
| 1 WHERE is of non-agen fine DOUND | $40 \ (4.0\%)$ |
| WHERE_n_of_non_aggr_funcROUND | 055 (0607) |
| 0 | 955 (96%) |
| 1 | $42 \ (4.2\%)$ |

| Query parameter or value | Descriptive statistics |
|--------------------------------------|---------------------------------|
| 2 | 3 (0.3%) |
| WHERE_n_of_non_aggr_funcABS | , |
| 0 | 957 (96%) |
| 1 | $42\ (4.2\%)$ |
| 2 | 1 (0.1%) |
| WHERE_n_of_non_aggr_funcFLOOR | , |
| 0 | 964~(96%) |
| 1 | $33\ (3.3\%)$ |
| 2 | $3\ (0.3\%)$ |
| WHERE n_of_non_aggr_funcMONTH | , |
| 0 = 0 | 970 (97%) |
| 1 | $30\ (3.0\%)$ |
| WHERE_n_of_all_non_aggr_func | , , |
| 0 $=$ $=$ $=$ $=$ ∞ $=$ 0 | 588 (59%) |
| 1 | 275~(28%) |
| 2 | 96 (9.6%) |
| 3 | $34\ (3.4\%)$ |
| 4 | $6\ (0.6\%)$ |
| 5 | 1(0.1%) |
| GROUP_BY_n_of_columns | [0.00, 2.00, 12.00] 3.10 / 2.87 |
| HAVING_n_of_main_predicates | , , , |
| 0 | $450 \ (45\%)$ |
| 1 | $199\ (20\%)$ |
| 2 | 170 (17%) |
| 3 | 181 (18%) |
| ORDER_BY_n_of_columns | , , |
| 0 | 266~(27%) |
| 1 | $356\ (36\%)$ |
| 2 | $233\ (23\%)$ |
| 3 | $102\ (10\%)$ |
| 4 | $29\ (2.9\%)$ |
| 5 | 8 (0.8%) |
| 6 | 5(0.5%) |
| 8 | 1 (0.1%) |
| limit | [2, 511, 1,000] 504 / 290 |
| offset | [0, 66, 1,000] 285 / 340 |