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

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## Scenario: 1-6jp_rjjp__g__h0-3ss_h0nss

## Scale factor: 50 GB

## The 1000-query pack was generated on: 2023-11-07

## 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, 8, 171] 15 / 24 | |
| SELECT_n_of_non_aggr_funcABS | | |
| 0 | 931 (93%) | |
| 1 | 55 (5.5%) | |
| 2 | 9~(0.9%) | |
| 3 | $3\ (0.3\%)$ | |
| 4 | $2\ (0.2\%)$ | |
| SELECT_n_of_non_aggr_funcDAY | | |
| 0 | 878 (88%) | |
| 1 | 89~(8.9%) | |
| 2 | 19 (1.9%) | |
| 3 | 5 (0.5%) | |
| 4 | 8 (0.8%) | |
| 5 | 1 (0.1%) | |
| SELECT_n_of_non_aggr_funcDOW | | |

| Query parameter or value | Descriptive statistics |
|--|---|
| 0 | 879 (88%) |
| 1 | 85 (8.5%) |
| 2 | 17 (1.7%) |
| 3 | 9~(0.9%) |
| 4 | 6~(0.6%) |
| 5 | 4~(0.4%) |
| SELECT_n_of_non_aggr_funcFLOOR | |
| 0 | 923 (92%) |
| 1 | 65~(6.5%) |
| 2 | 10 (1.0%) |
| 3 | 1 (0.1%) |
| 5 | 1 (0.1%) |
| SELECT_n_of_non_aggr_funcLOG | |
| 0 | 863~(86%) |
| 1 | 95~(9.5%) |
| 2 | 24~(2.4%) |
| 3 | 11 (1.1%) |
| 4 | 4~(0.4%) |
| 5 | 1 (0.1%) |
| 6 | 1 (0.1%) |
| 7 | 1 (0.1%) |
| SELECT_n_of_non_aggr_funcLOWER | [0.00,0.00,10.00]0.59/1.06 |
| SELECT_n_of_non_aggr_funcLTRIM | [0.00,0.00,9.00] $[0.58$ / $[0.02]$ |
| SELECT_n_of_non_aggr_funcMONTH | [0.00, 0.00, 9.00] 0.34 / 1.00 |
| SELECT_n_of_non_aggr_funcROUND | |
| 0 | $920 \; (92\%)$ |
| 1 | 65~(6.5%) |
| 2 | 12 (1.2%) |
| 3 | 1 (0.1%) |
| 4 | 2~(0.2%) |
| SELECT_n_of_non_aggr_funcRTRIM | [0.00, 0.00, 11.00] 0.63 / 1.11 |
| SELECT_n_of_non_aggr_funcSQRT | |
| 0 | 818 (82%) |
| 1 | 125~(13%) |
| 2 | 32 (3.2%) |
| 3 | 7 (0.7%) |
| 4 | 8 (0.8%) |
| 5 | 6~(0.6%) |
| 6 | 1 (0.1%) |
| 7 | 2~(0.2%) |
| 8 | 1 (0.1%) |
| $SELECT_n_of_non_aggr_func__SUBSTR$ | [0.00, 0.00, 14.00] 0.60 / 1.09 |
| $SELECT_n_of_non_aggr_func__UPPER$ | [0.00, 0.00, 10.00] 0.60 / 1.14 |
| $SELECT_n_of_non_aggr_func__YEAR$ | |
| 0 | 834 (83%) |
| 1 | 110 (11%) |

| Query parameter or value | Descriptive statistics |
|-------------------------------------|---------------------------------------|
| 2 | 31 (3.1%) |
| 3 | 9(0.9%) |
| 4 | 9(0.9%) |
| 5 | 2(0.2%) |
| 6 | 3~(0.3%) |
| 8 | 2(0.2%) |
| SELECT_n_of_non_aggr_funcTRUNC | () |
| θ | 926 (93%) |
| 1 | 59 (5.9%) |
| 2 | 9 (0.9%) |
| 3 | 5 (0.5%) |
| 4 | 1 (0.1%) |
| SELECT_n_of_all_non_aggr_func | [0.0, 3.0, 70.0] 4.9 / 8.4 |
| SELECT_n_of_aggr_funcCOUNT | [0.00, 0.00, 13.00] 0.94 / 2.09 |
| SELECT_n_of_aggr_funcMIN | [0.00, 0.00, 11.00] 0.85 / 1.89 |
| SELECT_n_of_aggr_funcCOUNT_DISTINCT | [0.00, 0.00, 12.00] 0.80 / 1.84 |
| SELECT_n_of_aggr_funcMAX | [0.00, 0.00, 14.00] $[0.76]$ $[0.75]$ |
| SELECT_n_of_aggr_funcAVG | [0.00, 0.00, 1.00] 0.00 / 1.00 |
| 0 | 940 (94%) |
| 1 | 46 (4.6%) |
| 2 | 11 (1.1%) |
| ~ 3 | 2(0.2%) |
| 4 | 1 (0.1%) |
| SELECT_n_of_aggr_funcSUM | 1 (0.170) |
| 0 | 931 (93%) |
| 1 | 47 (4.7%) |
| 2 | 13 (1.3%) |
| ~ 3 | 6 (0.6%) |
| 4 | 3 (0.3%) |
| SELECT_n_of_all_aggr_func | [0.00, 3.00, 14.00] 3.53 / 3.08 |
| FROM_n_of_join_paths | [0.00, 0.00, 1.00] 0.00 / 0.00 |
| 1 | $168 \ (17\%)$ |
| 2 | 170 (17%) |
| 3 | 155 (16%) |
| | 170 (17%) |
| <i>4 5</i> | 162 (16%) |
| 6 | 175 (18%) |
| FROM_n_of_super_joinsLEFT | 110 (10/0) |
| 0 | 552 (55%) |
| 1 | 303 (30%) |
| 2 | 114 (11%) |
| 3 | 22 (2.2%) |
| 4 | 9 (0.9%) |
| FROM_n_of_super_joinsRIGHT | J (0.070) |
| 0 | 549 (55%) |
| 1 | 308 (31%) |
| ± | 000 (01/0) |

| FROM_n_of_super_joinsFULL | 119 (12%) 23 (2.3%) 1 (0.1%) |
|--------------------------------------|--|
| ROM_n_of_super_joinsFULL | $\begin{array}{c} 23 \ (2.3\%) \\ 1 \ (0.1\%) \end{array}$ |
| ROM_n_of_super_joinsFULL | , , |
| | ECE (E707) |
| l | ECE (E707) |
| | 565~(57%) |
| | 288 (29%) |
| | 120 (12%) |
| | 25~(2.5%) |
| | 1 (0.1%) |
| | 1(0.1%) |
| TROM_n_of_joinsINNER | [0.00, 3.00, 12.00] 3.25 / 2.47 |
| ROM_n_of_joinsRIGHT | [0.00, 3.00, 14.00] 3.31 / 2.51 |
| FROM_n_of_processed_rows | [5, 461,963,033, 2,173,024,836] 595,508,361 / |
| | 494,625,937 |
| VHERE_n_of_predicates | [0.0, 3.0, 12.0] 4.0 / 3.1 |
| VHERE_n_of_attribs_of_typedate | [5:0, 5:0,:0] -:0 / 5:- |
|) | 772 (77%) |
| | 174 (17%) |
| | 44 (4.4%) |
| | 9 (0.9%) |
| | 1 (0.1%) |
| VHERE_n_of_attribs_of_typecharacter | 1 (0.17.0) |
|) | 645~(65%) |
| | 251 (25%) |
| | 79 (7.9%) |
| | 19 (1.9%) |
| | 6 (0.6%) |
| VHERE_n_of_attribs_of_typecharacter_ | ` ' |
|) | 353 (35%) |
| | 281 (28%) |
| | 185 (19%) |
| ? | 102 (10%) |
| | 50 (5.0%) |
| | 19 (1.9%) |
| | 9 (0.9%) |
| | 1 (0.1%) |
| VHERE_n_of_attribs_of_typeinteger | 1 (3.17.6) |
|) | 362~(36%) |
| | 297 (30%) |
| | 179 (18%) |
| | 88 (8.8%) |
| | 46 (4.6%) |
| | 18 (1.8%) |
| | 9 (0.9%) |
| , , | 1 (0.1%) |
| VHERE_n_of_attribs_of_typenumeric | 1 (0.170) |

| Query parameter or value | Descriptive statistics |
|-------------------------------------|---|
| 0 | 566 (57%) |
| 1 | 280 (28%) |
| 2 | 108 (11%) |
| 3 | 33 (3.3%) |
| 4 | 11 (1.1%) |
| 5 | 2~(0.2%) |
| $WHERE_n_of_pkey_attribs$ | |
| 0 | 538 (54%) |
| 1 | 306 (31%) |
| 2 | 102~(10%) |
| 3 | $41 \ (4.1\%)$ |
| 4 | $13 \ (1.3\%)$ |
| WHERE_n_of_connect_OR | [0.00, 2.00, 11.00] 2.33 / 2.54 |
| WHERE_n_of_operatorsgreater_or_less | 207 (2107) |
| 0 | 307 (31%) |
| 1 | 283 (28%) |
| 2 | 176 (18%) |
| 3 | 115 (12%) |
| 4 | 61 (6.1%) |
| 5 | 36 (3.6%) |
| 6 | 15 (1.5%) |
| 7 | 6 (0.6%) |
| 8 | 1~(0.1%) |
| WHERE_n_of_operatorsbetween | rao (ra07) |
| 0 | 529 (53%) |
| 1 | 284 (28%) |
| 2 3 | 132 (13%) |
| | 42 (4.2%) |
| <i>4 5</i> | 8 (0.8%) |
| 6 | 4 (0.4%) |
| | 1~(0.1%) |
| WHERE_n_of_operatorsin 0 | 538 (54%) |
| | $\frac{538 (54\%)}{278 (28\%)}$ |
| $\frac{1}{2}$ | 126 (13%) |
| $\frac{z}{3}$ | 43 (4.3%) |
| | $\frac{43}{12} \frac{(4.3\%)}{(1.2\%)}$ |
| <i>4 5</i> | 2(0.2%) |
| 6 | 1 (0.1%) |
| WHERE_n_of_operatorslike | 1 (0.1/0) |
| 0 | 783 (78%) |
| 1 | 175 (18%) |
| 2 | 37 (3.7%) |
| <i>z</i> <i>3</i> | 5 (0.5%) |
| WHERE_n_of_non_aggr_funcLOG | o (0.970) |
| 0 | 020 (02%) |
| U | $920 \; (92\%)$ |

| Query parameter or value | Descriptive statistics |
|-------------------------------|------------------------------|
| 1 | 76 (7.6%) |
| 2 | 3 (0.3%) |
| 3 | 1 (0.1%) |
| WHERE_n_of_non_aggr_funcMONTH | (- / 3) |
| 0 = 0 | 959 (96%) |
| 1 | 39 (3.9%) |
| 2 | 2~(0.2%) |
| WHERE_n_of_non_aggr_funcSQRT | _ (0:=/0) |
| 0 | 878 (88%) |
| 1 | 110 (11%) |
| 2 | 11 (1.1%) |
| ~ 3 | 11(1.170) $1(0.1%)$ |
| WHERE_n_of_non_aggr_funcTRUNC | 1 (0.170) |
| 0 | 956 (96%) |
| 0 1 | 42 (4.2%) |
| 2 2 | $\frac{42(4.2\%)}{2(0.2\%)}$ |
| | Z (U.Z/0) |
| | 060 (060/) |
| 0 | 960 (96%) |
| 1 | 39 (3.9%) |
| | 1 (0.1%) |
| WHERE_n_of_non_aggr_funcROUND | 054 (050/) |
| 0 | 954 (95%) |
| 1 | 45 (4.5%) |
| | 1 (0.1%) |
| WHERE_n_of_non_aggr_funcFLOOR | |
| 0 | 966 (97%) |
| 1 | 33 (3.3%) |
| 2 | 1 (0.1%) |
| WHERE_n_of_non_aggr_funcDOW | 0.0= (0.=01) |
| 0 | 967 (97%) |
| 1 | 32 (3.2%) |
| 2 | 1~(0.1%) |
| WHERE_n_of_non_aggr_funcABS | 4 |
| 0 | 964 (96%) |
| 1 | $35 \ (3.5\%)$ |
| 2 | 1~(0.1%) |
| WHERE_n_of_non_aggr_funcYEAR | |
| 0 | 954 (95%) |
| 1 | 46~(4.6%) |
| WHERE_n_of_all_non_aggr_func | |
| 0 | 607~(61%) |
| 1 | 276~(28%) |
| 2 | 86~(8.6%) |
| 3 | $24\ (2.4\%)$ |
| 1 | 5~(0.5%) |
| 4 | - (, 0) |

| Query parameter or value | Descriptive statistics |
|---|---|
| GROUP_BY_n_of_columns | [0.00, 2.00, 12.00] $[0.97 / 2.81]$ |
| HAVING_n_of_main_predicates | |
| 0 | 293~(29%) |
| 1 | 94 (9.4%) |
| 2 | 160 (16%) |
| 3 | 180 (18%) |
| 4 | 156 (16%) |
| 5 | 73 (7.3%) |
| 6 | 44 (4.4%) |
| $HAVING_n_of_main_predicates__scalar_subquery$ | |
| 0 | 428 (43%) |
| 1 | 209 (21%) |
| 2 | 178 (18%) |
| 3 | $185 \ (19\%)$ |
| HAVING_n_of_subqueriesscalar_subquery | $[0.0, 1.0, 21.0] \ 2.4 \ / \ 3.6$ |
| HAVING_n_of_processed_rows_by_subqueri@, 81,4 | 80,770, 29,418,811,100] 1,466,968,180 / |
| | 3,056,255,540 |
| ORDER_BY_n_of_columns | |
| 0 | 289 (29%) |
| 1 | $319 \ (32\%)$ |
| 2 | 256~(26%) |
| 3 | $92 \ (9.2\%)$ |
| 4 | 25~(2.5%) |
| 5 | $13 \ (1.3\%)$ |
| 6 | $3\;(0.3\%)$ |
| γ | 1~(0.1%) |
| 8 | $2\;(0.2\%)$ |
| limit | [1, 514, 997] 509 / 285 |
| offset | [0, 62, 998] 274 / 332 |