

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

## Scenario: 1-6jp\_ujpp\_\_g\_\_h0-3ss\_h0-3nss

## Scale factor: 10 GB

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

## 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, 198] 15 / 24            |
| SELECT_n_of_non_aggr_func__RTRIM | [0.00, 0.00, 9.00] 0.58 / 0.99 |
| SELECT_n_of_non_aggr_func__UPPER |                                |
| 0                                | 619 (62%)                      |
| 1                                | 269 (27%)                      |
| 2                                | 76 (7.6%)                      |
| 3                                | 18 (1.8%)                      |
| 4                                | 10 (1.0%)                      |
| 5                                | 2 (0.2%)                       |
| 6                                | 4 (0.4%)                       |
| 7                                | 1 (0.1%)                       |
| 8                                | 1 (0.1%)                       |
| SELECT_n_of_non_aggr_func__LTRIM |                                |
| 0                                | 622 (62%)                      |
| 1                                | 266 (27%)                      |

| Query parameter or value          | Descriptive statistics |
|-----------------------------------|------------------------|
| 2                                 | 72 (7.2%)              |
| 3                                 | 25 (2.5%)              |
| 4                                 | 7 (0.7%)               |
| 5                                 | 5 (0.5%)               |
| 6                                 | 1 (0.1%)               |
| 8                                 | 2 (0.2%)               |
| SELECT_n_of_non_aggr_func__SUBSTR |                        |
| 0                                 | 615 (62%)              |
| 1                                 | 261 (26%)              |
| 2                                 | 87 (8.7%)              |
| 3                                 | 23 (2.3%)              |
| 4                                 | 7 (0.7%)               |
| 5                                 | 2 (0.2%)               |
| 6                                 | 4 (0.4%)               |
| 9                                 | 1 (0.1%)               |
| SELECT_n_of_non_aggr_func__DOW    |                        |
| 0                                 | 856 (86%)              |
| 1                                 | 113 (11%)              |
| 2                                 | 17 (1.7%)              |
| 3                                 | 8 (0.8%)               |
| 4                                 | 1 (0.1%)               |
| 5                                 | 5 (0.5%)               |
| SELECT_n_of_non_aggr_func__SQRT   |                        |
| 0                                 | 825 (83%)              |
| 1                                 | 127 (13%)              |
| 2                                 | 29 (2.9%)              |
| 3                                 | 12 (1.2%)              |
| 4                                 | 4 (0.4%)               |
| 5                                 | 2 (0.2%)               |
| 6                                 | 1 (0.1%)               |
| SELECT_n_of_non_aggr_func__LOWER  |                        |
| 0                                 | 630 (63%)              |
| 1                                 | 240 (24%)              |
| 2                                 | 88 (8.8%)              |
| 3                                 | 24 (2.4%)              |
| 4                                 | 12 (1.2%)              |
| 5                                 | 3 (0.3%)               |
| 6                                 | 1 (0.1%)               |
| 7                                 | 2 (0.2%)               |
| SELECT_n_of_non_aggr_func__DAY    |                        |
| 0                                 | 903 (90%)              |
| 1                                 | 71 (7.1%)              |
| 2                                 | 20 (2.0%)              |
| 3                                 | 4 (0.4%)               |
| 4                                 | 2 (0.2%)               |
| SELECT_n_of_non_aggr_func__MONTH  |                        |

| Query parameter or value             | Descriptive statistics |
|--------------------------------------|------------------------|
| 0                                    | 819 (82%)              |
| 1                                    | 125 (13%)              |
| 2                                    | 30 (3.0%)              |
| 3                                    | 17 (1.7%)              |
| 4                                    | 6 (0.6%)               |
| 6                                    | 1 (0.1%)               |
| 7                                    | 1 (0.1%)               |
| 9                                    | 1 (0.1%)               |
| SELECT__n_of__non__aggr__func__FLOOR |                        |
| 0                                    | 931 (93%)              |
| 1                                    | 55 (5.5%)              |
| 2                                    | 9 (0.9%)               |
| 3                                    | 4 (0.4%)               |
| 4                                    | 1 (0.1%)               |
| SELECT__n_of__non__aggr__func__LOG   |                        |
| 0                                    | 867 (87%)              |
| 1                                    | 105 (11%)              |
| 2                                    | 18 (1.8%)              |
| 3                                    | 4 (0.4%)               |
| 4                                    | 3 (0.3%)               |
| 5                                    | 2 (0.2%)               |
| 6                                    | 1 (0.1%)               |
| SELECT__n_of__non__aggr__func__ROUND |                        |
| 0                                    | 925 (93%)              |
| 1                                    | 66 (6.6%)              |
| 2                                    | 4 (0.4%)               |
| 3                                    | 4 (0.4%)               |
| 5                                    | 1 (0.1%)               |
| SELECT__n_of__non__aggr__func__TRUNC |                        |
| 0                                    | 918 (92%)              |
| 1                                    | 71 (7.1%)              |
| 2                                    | 9 (0.9%)               |
| 3                                    | 2 (0.2%)               |
| SELECT__n_of__non__aggr__func__YEAR  |                        |
| 0                                    | 848 (85%)              |
| 1                                    | 114 (11%)              |
| 2                                    | 19 (1.9%)              |
| 3                                    | 12 (1.2%)              |
| 4                                    | 4 (0.4%)               |
| 5                                    | 1 (0.1%)               |
| 6                                    | 2 (0.2%)               |
| SELECT__n_of__non__aggr__func__ABS   |                        |
| 0                                    | 929 (93%)              |
| 1                                    | 64 (6.4%)              |
| 2                                    | 5 (0.5%)               |
| 3                                    | 2 (0.2%)               |

| Query parameter or value              | Descriptive statistics                                |
|---------------------------------------|---|
| SELECT_n_of_all_non_aggr_func         | [0.0, 3.0, 74.0] 4.5 / 6.3                            |
| SELECT_n_of_aggr_func__COUNT          | [0.00, 0.00, 11.00] 0.74 / 1.73                       |
| SELECT_n_of_aggr_func__MIN            | [0.00, 0.00, 13.00] 0.81 / 1.79                       |
| SELECT_n_of_aggr_func__MAX            | [0.00, 0.00, 12.00] 1.01 / 2.12                       |
| SELECT_n_of_aggr_func__SUM            |   |
| 0                                     | 938 (94%)   |
| 1                                     | 40 (4.0%)   |
| 2                                     | 16 (1.6%)   |
| 3                                     | 4 (0.4%)  |
| 4                                     | 2 (0.2%)  |
| SELECT_n_of_aggr_func__COUNT_DISTINCT | [0.00, 0.00, 12.00] 0.88 / 1.86                       |
| SELECT_n_of_aggr_func__AVG            |   |
| 0                                     | 929 (93%)   |
| 1                                     | 38 (3.8%)   |
| 2                                     | 17 (1.7%)   |
| 3                                     | 12 (1.2%)   |
| 4                                     | 4 (0.4%)  |
| SELECT_n_of_all_aggr_func             | [0.00, 3.00, 13.00] 3.66 / 3.00                       |
| FROM_n_of_join_paths                  |   |
| 1                                     | 158 (16%)   |
| 2                                     | 158 (16%)   |
| 3                                     | 182 (18%)   |
| 4                                     | 157 (16%)   |
| 5                                     | 173 (17%)   |
| 6                                     | 172 (17%)   |
| FROM_n_of_super_joins__LEFT           |   |
| 0                                     | 545 (55%)   |
| 1                                     | 321 (32%)   |
| 2                                     | 104 (10%)   |
| 3                                     | 30 (3.0%)   |
| FROM_n_of_super_joins__FULL           |   |
| 0                                     | 522 (52%)   |
| 1                                     | 316 (32%)   |
| 2                                     | 134 (13%)   |
| 3                                     | 26 (2.6%)   |
| 4                                     | 2 (0.2%)  |
| FROM_n_of_super_joins__RIGHT          |   |
| 0                                     | 558 (56%)   |
| 1                                     | 293 (29%)   |
| 2                                     | 118 (12%)   |
| 3                                     | 30 (3.0%)   |
| 4                                     | 1 (0.1%)  |
| FROM_n_of_joins__INNER                | [0.00, 3.00, 13.00] 3.37 / 2.54                       |
| FROM_n_of_joins__RIGHT                | [0.00, 3.00, 12.00] 3.41 / 2.42                       |
| FROM_n_of_processed_rows              | [5, 94,482,757, 449,382,022] 120,526,821 / 97,239,315 |
| WHERE_n_of_predicates                 | [0.0, 3.0, 13.0] 3.9 / 3.0                            |

| Query parameter or value                      | Descriptive statistics          |
|---|---------------------------------|
| WHERE_n_of_attribs_of_type__character_varying |                                 |
| 0   | 362 (36%)                       |
| 1   | 293 (29%)                       |
| 2   | 194 (19%)                       |
| 3   | 88 (8.8%)                       |
| 4   | 47 (4.7%)                       |
| 5   | 12 (1.2%)                       |
| 6   | 4 (0.4%)                        |
| WHERE_n_of_attribs_of_type__integer           |                                 |
| 0   | 394 (39%)                       |
| 1   | 267 (27%)                       |
| 2   | 185 (19%)                       |
| 3   | 96 (9.6%)                       |
| 4   | 35 (3.5%)                       |
| 5   | 17 (1.7%)                       |
| 6   | 5 (0.5%)                        |
| 7   | 1 (0.1%)                        |
| WHERE_n_of_attribs_of_type__date              |                                 |
| 0   | 750 (75%)                       |
| 1   | 203 (20%)                       |
| 2   | 42 (4.2%)                       |
| 3   | 5 (0.5%)                        |
| WHERE_n_of_attribs_of_type__character         |                                 |
| 0   | 637 (64%)                       |
| 1   | 262 (26%)                       |
| 2   | 77 (7.7%)                       |
| 3   | 20 (2.0%)                       |
| 4   | 4 (0.4%)                        |
| WHERE_n_of_attribs_of_type__numeric           |                                 |
| 0   | 562 (56%)                       |
| 1   | 267 (27%)                       |
| 2   | 126 (13%)                       |
| 3   | 32 (3.2%)                       |
| 4   | 9 (0.9%)                        |
| 5   | 3 (0.3%)                        |
| 6   | 1 (0.1%)                        |
| WHERE_n_of_pkey_attribs                       |                                 |
| 0   | 547 (55%)                       |
| 1   | 303 (30%)                       |
| 2   | 114 (11%)                       |
| 3   | 29 (2.9%)                       |
| 4   | 4 (0.4%)                        |
| 5   | 3 (0.3%)                        |
| WHERE_n_of_connect_OR                         | [0.00, 1.00, 12.00] 2.25 / 2.48 |
| WHERE_n_of_operators__greater_or_less         |                                 |
| 0   | 341 (34%)                       |

| Query parameter or value        | Descriptive statistics |
|---------------------------------|------------------------|
| 1                               | 263 (26%)              |
| 2                               | 170 (17%)              |
| 3                               | 123 (12%)              |
| 4                               | 58 (5.8%)              |
| 5                               | 30 (3.0%)              |
| 6                               | 10 (1.0%)              |
| 7                               | 4 (0.4%)               |
| 8                               | 1 (0.1%)               |
| WHERE_n_of_operators__in        |                        |
| 0                               | 524 (52%)              |
| 1                               | 278 (28%)              |
| 2                               | 148 (15%)              |
| 3                               | 40 (4.0%)              |
| 4                               | 10 (1.0%)              |
| WHERE_n_of_operators__between   |                        |
| 0                               | 542 (54%)              |
| 1                               | 298 (30%)              |
| 2                               | 105 (11%)              |
| 3                               | 38 (3.8%)              |
| 4                               | 11 (1.1%)              |
| 5                               | 5 (0.5%)               |
| 6                               | 1 (0.1%)               |
| WHERE_n_of_operators__like      |                        |
| 0                               | 774 (77%)              |
| 1                               | 197 (20%)              |
| 2                               | 27 (2.7%)              |
| 3                               | 2 (0.2%)               |
| WHERE_n_of_non_aggr_func__LOG   |                        |
| 0                               | 921 (92%)              |
| 1                               | 76 (7.6%)              |
| 2                               | 3 (0.3%)               |
| WHERE_n_of_non_aggr_func__FLOOR |                        |
| 0                               | 957 (96%)              |
| 1                               | 42 (4.2%)              |
| 2                               | 1 (0.1%)               |
| WHERE_n_of_non_aggr_func__TRUNC |                        |
| 0                               | 954 (95%)              |
| 1                               | 46 (4.6%)              |
| WHERE_n_of_non_aggr_func__SQRT  |                        |
| 0                               | 884 (88%)              |
| 1                               | 107 (11%)              |
| 2                               | 9 (0.9%)               |
| WHERE_n_of_non_aggr_func__YEAR  |                        |
| 0                               | 956 (96%)              |
| 1                               | 44 (4.4%)              |
| WHERE_n_of_non_aggr_func__ROUND |                        |

| Query parameter or value                         | Descriptive statistics                                    |
|--|---|
| 0  | 961 (96%)   |
| 1  | 38 (3.8%)   |
| 2  | 1 (0.1%)  |
| WHERE_n_of_non_aggr_func__DOW                    |   |
| 0  | 953 (95%)   |
| 1  | 41 (4.1%)   |
| 2  | 6 (0.6%)  |
| WHERE_n_of_non_aggr_func__ABS                    |   |
| 0  | 973 (97%)   |
| 1  | 26 (2.6%)   |
| 2  | 1 (0.1%)  |
| WHERE_n_of_non_aggr_func__DAY                    |   |
| 0  | 962 (96%)   |
| 1  | 38 (3.8%)   |
| WHERE_n_of_non_aggr_func__MONTH                  |   |
| 0  | 966 (97%)   |
| 1  | 34 (3.4%)   |
| WHERE_n_of_all_non_aggr_func                     |   |
| 0  | 627 (63%)   |
| 1  | 253 (25%)   |
| 2  | 86 (8.6%)   |
| 3  | 28 (2.8%)   |
| 4  | 5 (0.5%)  |
| 5  | 1 (0.1%)  |
| GROUP_BY_n_of_columns                            | [0.00, 3.00, 13.00] 3.33 / 2.90                           |
| HAVING_n_of_main_predicates                      | [0.00, 4.00, 9.00] 3.44 / 2.52                            |
| HAVING_n_of_main_predicates__non_scalar_subquery |   |
| 0  | 424 (42%)   |
| 1  | 195 (20%)   |
| 2  | 197 (20%)   |
| 3  | 184 (18%)   |
| HAVING_n_of_main_predicates__scalar_subquery     |   |
| 0  | 441 (44%)   |
| 1  | 162 (16%)   |
| 2  | 195 (20%)   |
| 3  | 202 (20%)   |
| HAVING_n_of_subqueries__non_scalar_subquery      |   |
| 0  | 424 (42%)   |
| 1  | 195 (20%)   |
| 2  | 197 (20%)   |
| 3  | 184 (18%)   |
| HAVING_n_of_subqueries__scalar_subquery          | [0.0, 1.0, 27.0] 2.5 / 3.8                                |
| HAVING_n_of_processed_rows_by_subqueries         | [0, 155,360,205, 5,499,389,352] 424,438,726 / 693,645,939 |
| ORDER_BY_n_of_columns                            |   |
| 0  | 298 (30%)   |

| Query parameter or value | Descriptive statistics    |
|--------------------------|---------------------------|
| <i>1</i>                 | 333 (33%)                 |
| <i>2</i>                 | 250 (25%)                 |
| <i>3</i>                 | 96 (9.6%)                 |
| <i>4</i>                 | 13 (1.3%)                 |
| <i>5</i>                 | 5 (0.5%)                  |
| <i>6</i>                 | 3 (0.3%)                  |
| <i>7</i>                 | 1 (0.1%)                  |
| <i>8</i>                 | 1 (0.1%)                  |
| limit                    | [1, 511, 1,000] 502 / 296 |
| offset                   | [0, 0, 999] 230 / 315     |