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

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## Scenario: 1-3jp_ujjp__g__h0-3ss_h0nss

## Scale factor: 2 GB

## The 1000-query pack was generated on: 2023-11-09

## 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, 6, 113] 10 / 13	
SELECT_n_of_non_aggr_funcLOWER		
0	711 (71%)	
1	$218\ (22\%)$	
2	47 (4.7%)	
3	$15\ (1.5\%)$	
4	5~(0.5%)	
5	4(0.4%)	
SELECT_n_of_non_aggr_funcRTRIM		
0	669~(67%)	
1	256~(26%)	
2	50 (5.0%)	
3	19 (1.9%)	
4	5~(0.5%)	
5	1 (0.1%)	

Query parameter or value	Descriptive statistics
SELECT_n_of_non_aggr_funcSQRT	
0	837 (84%)
1	126 (13%)
2	29 (2.9%)
3	7~(0.7%)
5	1~(0.1%)
SELECT_n_of_non_aggr_funcLOG	
0	889 (89%)
1	92 (9.2%)
2	11 (1.1%)
3	$8 \; (0.8\%)$
SELECT_n_of_non_aggr_funcLTRIM	
0	686 (69%)
1	243~(24%)
2	48 (4.8%)
3	13 (1.3%)
4	7~(0.7%)
5	1~(0.1%)
6	1~(0.1%)
8	1~(0.1%)
SELECT_n_of_non_aggr_funcROUND	
0	944~(94%)
1	51 (5.1%)
2	5~(0.5%)
SELECT_n_of_non_aggr_funcSUBSTR	
0	675 (68%)
1	235~(24%)
2	65~(6.5%)
3	19 (1.9%)
4	4~(0.4%)
6	2~(0.2%)
SELECT_n_of_non_aggr_funcUPPER	
0	694~(69%)
1	241~(24%)
2	$42 \ (4.2\%)$
3	12 (1.2%)
4	7~(0.7%)
5	2~(0.2%)
6	1~(0.1%)
$\gamma$	1 (0.1%)
SELECT_n_of_non_aggr_funcABS	
0	945~(95%)
1	49 (4.9%)
2	5~(0.5%)
3	1 (0.1%)
$SELECT\_n\_of\_non\_aggr\_func\_\_MONTH$	

Query parameter or value	Descriptive statistics
0	846 (85%)
1	115 (12%)
2	23 (2.3%)
~ 3	6 (0.6%)
4	5 (0.5%)
5	3 (0.3%)
6	1 (0.1%)
8	1 (0.1%)
SELECT_n_of_non_aggr_funcFLOOR	1 (0.170)
0	926 (93%)
1	68 (6.8%)
2	6 (0.6%)
SELECT_n_of_non_aggr_funcDAY	0 (0.070)
0	920 (92%)
1	62 (6.2%)
2	13 (1.3%)
	` ,
3	3(0.3%)
SELECTE of VEAD	2~(0.2%)
SELECT_n_of_non_aggr_funcYEAR	061 (0607)
0	861 (86%)
1	113 (11%)
2	18 (1.8%)
3	4 (0.4%)
4	2 (0.2%)
6	1 (0.1%)
8	1~(0.1%)
SELECT_n_of_non_aggr_funcDOW	00× (00M)
0	885 (89%)
1	90 (9.0%)
2	14 (1.4%)
3	7 (0.7%)
4	$3\ (0.3\%)$
5	$1 \ (0.1\%)$
SELECT_n_of_non_aggr_funcTRUNC	(
$\theta$	941 (94%)
1	53 (5.3%)
2	6 (0.6%)
SELECT_n_of_all_non_aggr_func	[0.0,  2.0,  50.0]  3.4  /  4.9
SELECT_n_of_aggr_funcCOUNT	[0.00,0.00,9.00]0.68/1.59
SELECT_n_of_aggr_funcMAX	
0	780 (78%)
1	$84 \ (8.4\%)$
2	52 (5.2%)
3	33~(3.3%)
4	$21\ (2.1\%)$
5	$16 \ (1.6\%)$

Query parameter or value	Descriptive statistics
6	4 (0.4%)
7	5~(0.5%)
8	5~(0.5%)
SELECT_n_of_aggr_funcCOUNT_DISTING	$[0.00, 0.00, 10.00] \ 0.64 \ / \ 1.46$
SELECT_n_of_aggr_funcMIN	[0.00,  0.00,  9.00]  0.67  /  1.47
SELECT_n_of_aggr_funcSUM	
0	944~(94%)
1	35 (3.5%)
2	$17 \ (1.7\%)$
3	3~(0.3%)
5	1~(0.1%)
SELECT_n_of_aggr_funcAVG	
0	$946 \ (95\%)$
1	$40 \ (4.0\%)$
2	$12 \ (1.2\%)$
3	1  (0.1%)
4	1 (0.1%)
SELECT_n_of_all_aggr_func	[0.00,  2.00,  10.00]  2.69  /  2.32
FROM_n_of_join_paths	4 . 24
1	$317 \; (32\%)$
2	$359 \ (36\%)$
3	324~(32%)
FROM_n_of_super_joinsRIGHT	T00 (T404)
0	736 (74%)
1	241 (24%)
2 FROM n of super joins FULL	23~(2.3%)
FROM_n_of_super_joinsFULL 0	770 (7807)
1	779 (78%) 203 (20%)
2	18 (1.8%)
FROM_n_of_super_joinsLEFT	10 (1.070)
0	780 (78%)
1	207 (21%)
2	13 (1.3%)
FROM_n_of_joinsINNER	[0.00, 1.00, 9.00] 1.71 / 1.49
FROM_n_of_joinsRIGHT	L , , , , , , , , , , , , , , , , , , ,
0 = -3	235~(24%)
1	268~(27%)
2	$205\ (21\%)$
3	131 (13%)
4	$98 \; (9.8\%)$
5	38 (3.8%)
6	19 (1.9%)
$\gamma$	6 (0.6%)
FROM_n_of_processed_rows [5,	$13,\!615,\!796,45,\!887,\!241]12,\!804,\!519/11,\!697,\!003$
$WHERE\_n\_of\_predicates$	[0.00,  2.00,  9.00]   2.82  /   2.23

WHERE_n_of_attribs_of_typecharacter  0	Query parameter or value	Descriptive statistics
1       207 (21%)         2       45 (4.5%)         3       10 (1.0%)         4       2 (0.2%)         WHERE_n_of_attribs_of_typecharacter_varying         0       436 (44%)         1       307 (31%)         2       173 (17%)         3       61 (6.1%)         4       21 (2.1%)         5       2 (0.2%)         WHERE_n_of_attribs_of_typedate         0       828 (83%)         1       163 (16%)         2       9 (0.9%)         WHERE_n_of_attribs_of_typenumeric         0       659 (66%)         1       222 (22%)         2       92 (9.2%)         3       23 (2.3%)         4       4 (0.4%)         WHERE_n_of_attribs_of_type_integer       4 (0.4%)         0       450 (45%)         1       310 (31%)         2       2 (0.2%)         WHERE_n_of_attribs_of_type_integer       58 (5.8%)         4       104 (1.4%)         5       2 (0.2%)         WHERE_n_of_pkey_attribs       599 (60%)         4       10 (1.6%)         4       10 (1.6%)	WHERE_n_of_attribs_of_typecharacter	
2	0	736 (74%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	207 (21%)
## WHERE n_of_attribs_of_typecharacter_varying ## VASC   436 (44%) ## VASC   436 (44	2	$45 \; (4.5\%)$
WHERE_n_of_attribs_of_typecharacter_varying 0	3	10 (1.0%)
0	4	2~(0.2%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_attribs_of_typecharacter_varying	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	436 (44%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	307 (31%)
4	2	173 (17%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3	61 (6.1%)
5       2 (0.2%)         WHERE_n_of_attribs_of_typedate       828 (83%)         1       163 (16%)         2       9 (0.9%)         WHERE_n_of_attribs_of_typenumeric       659 (66%)         0       659 (66%)         1       222 (22%)         2       92 (9.2%)         3       23 (2.3%)         4       4 (0.4%)         WHERE_n_of_attribs_of_typeinteger       450 (45%)         1       310 (31%)         2       166 (17%)         3       58 (5.8%)         4       14 (1.4%)         5       58 (5.8%)         4       14 (1.4%)         5       2 (0.2%)         WHERE_n_of_pkey_attribs       599 (60%)         1       311 (31%)         2       71 (7.1%)         3       16 (1.6%)         4       3 (0.3%)         WHERE_n_of_connect_OR       450 (45%)         0       450 (45%)         1       195 (20%)         2       127 (13%)         3       95 (9.5%)         4       62 (6.2%)         5       40 (4.0%)         6       62 (6.2%) <tr< td=""><td>4</td><td>21 (2.1%)</td></tr<>	4	21 (2.1%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		2~(0.2%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_attribs_of_typedate	
2       9 (0.9%)         WHERE_n_of_attribs_of_typenumeric       659 (66%)         1       222 (22%)         2       92 (9.2%)         3       23 (2.3%)         4       4 (0.4%)         WHERE_n_of_attribs_of_typeinteger       50 (45%)         1       310 (31%)         2       166 (17%)         3       58 (5.8%)         4       14 (1.4%)         5       2 (0.2%)         WHERE_n_of_pkey_attribs       599 (60%)         0       599 (60%)         1       311 (31%)         2       71 (7.1%)         3       16 (1.6%)         4       3 (0.3%)         WHERE_n_of_connect_OR       450 (45%)         1       195 (20%)         2       127 (13%)         3       95 (9.5%)         4       62 (6.2%)         5       40 (4.0%)         6       22 (2.2%)         7       4 (0.4%)	0	828 (83%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	163 (16%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2	9 (0.9%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_attribs_of_typenumeric	,
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	659~(66%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	$222\ (22\%)$
4       4 (0.4%)         WHERE_n_of_attribs_of_typeinteger       450 (45%)         1       310 (31%)         2       166 (17%)         3       58 (5.8%)         4       14 (1.4%)         5       2 (0.2%)         WHERE_n_of_pkey_attribs       599 (60%)         1       311 (31%)         2       71 (7.1%)         3       16 (1.6%)         4       3 (0.3%)         WHERE_n_of_connect_OR       450 (45%)         1       195 (20%)         2       127 (13%)         3       95 (9.5%)         4       62 (6.2%)         5       40 (4.0%)         6       22 (2.2%)         7       4 (0.4%)	2	92 (9.2%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3	$23\ (2.3\%)$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4	4 (0.4%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_attribs_of_typeinteger	,
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	450 (45%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	310 (31%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2	166 (17%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3	58 (5.8%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4	$14 \ (1.4\%)$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		2~(0.2%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_pkey_attribs	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	599 (60%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	
4       3 (0.3%)         WHERE_n_of_connect_OR       450 (45%)         0       450 (20%)         1       195 (20%)         2       127 (13%)         3       95 (9.5%)         4       62 (6.2%)         5       40 (4.0%)         6       22 (2.2%)         7       4 (0.4%)	2	
WHERE_n_of_connect_OR  0	3	16 (1.6%)
WHERE_n_of_connect_OR  0	4	$3\ (0.3\%)$
1 195 (20%) 2 127 (13%) 3 95 (9.5%) 4 62 (6.2%) 5 40 (4.0%) 6 22 (2.2%) 7 4 (0.4%)		
2 127 (13%) 3 95 (9.5%) 4 62 (6.2%) 5 40 (4.0%) 6 22 (2.2%) 7 4 (0.4%)	0	450 (45%)
3       95 (9.5%)         4       62 (6.2%)         5       40 (4.0%)         6       22 (2.2%)         7       4 (0.4%)	1	195~(20%)
3       95 (9.5%)         4       62 (6.2%)         5       40 (4.0%)         6       22 (2.2%)         7       4 (0.4%)	2	· · · · · ·
4 62 (6.2%) 5 40 (4.0%) 6 22 (2.2%) 7 4 (0.4%)		
5 6 22 (2.2%) 7 4 (0.4%)	4	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	, ,
4 (0.4%)		
	7	
	8	5~(0.5%)

Query parameter or value	Descriptive statistics
WHERE_n_of_operatorsgreater_or_less	
0	402~(40%)
1	323~(32%)
2	153 (15%)
3	91 (9.1%)
4	28 (2.8%)
5	3~(0.3%)
WHERE_n_of_operatorsin	
0	628~(63%)
1	256~(26%)
2	$89 \ (8.9\%)$
3	$21 \ (2.1\%)$
4	4~(0.4%)
5	1 (0.1%)
6	1 (0.1%)
WHERE_n_of_operatorslike	
0	849~(85%)
1	133 (13%)
2	18 (1.8%)
WHERE_n_of_operatorsbetween	
0	623~(62%)
1	255~(26%)
2	$96 \ (9.6\%)$
3	23~(2.3%)
4	$2\;(0.2\%)$
5	1 (0.1%)
WHERE_n_of_non_aggr_funcABS	
0	979 (98%)
1	19 (1.9%)
2	2~(0.2%)
WHERE_n_of_non_aggr_funcSQRT	
0	901 (90%)
1	91 (9.1%)
2	8~(0.8%)
WHERE_n_of_non_aggr_funcFLOOR	
0	961 (96%)
1	38 (3.8%)
2	1~(0.1%)
WHERE_n_of_non_aggr_funcLOG	
0	943 (94%)
1	56 (5.6%)
2	1 (0.1%)
WHERE_n_of_non_aggr_funcMONTH	
0	973 (97%)
1	27 (2.7%)
$WHERE\_n\_of\_non\_aggr\_func\_\_DOW$	

Query parameter or value	Descriptive statistics
0	970 (97%)
1	30 (3.0%)
$WHERE\_n\_of\_non\_aggr\_func\_\_TRUNC$	
0	966 (97%)
1	$34 \ (3.4\%)$
WHERE_n_of_non_aggr_funcYEAR	0=0 (0004)
0	978 (98%)
1	22~(2.2%)
WHERE_n_of_non_aggr_funcROUND 0	970 (97%)
<i>0 1</i>	28 (2.8%)
2	28 (2.6%) $2 (0.2%)$
WHERE n of non aggr func DAY	2 (0.270)
0	974 (97%)
1	26 (2.6%)
WHERE_n_of_all_non_aggr_func	(
0	690 (69%)
1	240 (24%)
2	53~(5.3%)
3	15~(1.5%)
4	2 (0.2%)
GROUP_BY_n_of_columns	[0.00,  2.00,  9.00]   2.29  /   2.08
HAVING_n_of_main_predicates	01* (000*)
0	315 (32%)
1	78 (7.8%)
2 3	129 (13%)
	193 (19%) 146 (15%)
<i>4 5</i>	92 (9.2%)
6	47 (4.7%)
HAVING_n_of_main_predicatesscalar_subque	` ,
0	452 (45%)
1	175 (18%)
2	$185\ (19\%)$
3	188 (19%)
$HAVING\_n\_of\_subqueries\_\_scalar\_subquery$	[0.0,  1.0,  20.0]  2.4  /  3.5
HAVING_n_of_processed_rows_by_subquerie, 1	[90,285, 643,609,335] $[28,848,818 / 63,429,131]$
ORDER_BY_n_of_columns	
$\theta$	307 (31%)
1	375 (38%)
2	251 (25%)
3	47 (4.7%)
4	11 (1.1%)
5 6	$6\ (0.6\%) \ 2\ (0.2\%)$
8	2(0.2%) $1(0.1%)$
O .	I (U.170)

Query parameter or value	Descriptive statistics
limit	[1, 475, 998] 485 / 293
offset	[0,  0,  999]  262  /  336