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

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## Scenario: 1-3jp_ujjp__g_hOss_hOnss

## Scale factor: 10 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)
```

Query parameter or value	Descriptive statistics	
SELECT_n_of_columns	[1, 7, 98] 11 / 14	
SELECT_n_of_non_aggr_funcDOW		
0	887 (89%)	
1	88 (8.8%)	
2	20~(2.0%)	
3	5 (0.5%)	
SELECT_n_of_non_aggr_funcFLOOR		
0	929~(93%)	
1	62~(6.2%)	
2	7 (0.7%)	
3	2~(0.2%)	
SELECT_n_of_non_aggr_funcLOG		
0	893 (89%)	
1	88 (8.8%)	
2	$14\ (1.4\%)$	

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

Query parameter or value	Descriptive statistics
3	5 (0.5%)
SELECT_n_of_non_aggr_funcLOWER	,
0	708 (71%)
1	206 (21%)
2	61 (6.1%)
3	17 (1.7%)
4	4~(0.4%)
5	3~(0.3%)
7	1~(0.1%)
SELECT_n_of_non_aggr_funcLTRIM	
θ	$718 \; (72\%)$
1	210 (21%)
2	$43 \ (4.3\%)$
3	20 (2.0%)
4	7 (0.7%)
5	2~(0.2%)
SELECT_n_of_non_aggr_funcMONTH	0.4.4 (0.407)
0	844 (84%)
1	105 (11%)
2	33 (3.3%)
3	11 (1.1%)
4 5	$4 (0.4\%) \ 3 (0.3\%)$
SELECT_n_of_non_aggr_funcROUND	3 (0.370)
0	950 (95%)
1	44 (4.4%)
2	4 (0.4%)
3	2 (0.2%)
SELECT_n_of_non_aggr_funcRTRIM	
0	689~(69%)
1	$248\ (25\%)$
2	46 (4.6%)
3	$9\;(0.9\%)$
4	5~(0.5%)
5	2~(0.2%)
7	1~(0.1%)
SELECT_n_of_non_aggr_funcSQRT	
θ	863 (86%)
1	99 (9.9%)
2	23 (2.3%)
3	8 (0.8%)
4	4 (0.4%)
5	1 (0.1%)
6 CELECTE C VEAD	2~(0.2%)
SELECT_n_of_non_aggr_funcYEAR	96 9 (9607)
0	862 (86%)

Query parameter or value	Descriptive statistics
1	106 (11%)
2	$22\;(2.2\%)$
3	5~(0.5%)
4	$3\ (0.3\%)$
5	1(0.1%)
6	1(0.1%)
SELECT_n_of_non_aggr_funcUPPER	, ,
0	691 (69%)
1	229~(23%)
2	61 (6.1%)
3	$13\ (1.3\%)$
4	4 (0.4%)
5	1(0.1%)
6	1(0.1%)
SELECT_n_of_non_aggr_funcSUBSTR	
0	677 (68%)
1	246~(25%)
2	59 (5.9%)
3	$12 \ (1.2\%)$
4	4~(0.4%)
6	2~(0.2%)
SELECT_n_of_non_aggr_funcDAY	
0	902 (90%)
1	83 (8.3%)
2	14 (1.4%)
3	1~(0.1%)
SELECT_n_of_non_aggr_funcTRUNC	
θ	$949 \; (95\%)$
1	$50 \ (5.0\%)$
2	1~(0.1%)
SELECT_n_of_non_aggr_funcABS	
θ	$937 \; (94\%)$
1	56~(5.6%)
2	6~(0.6%)
3	1 (0.1%)
SELECT_n_of_all_non_aggr_func	$[0.0, 2.0, 41.0] \ 3.3 \ / \ 4.8$
SELECT_n_of_aggr_funcCOUNT_DISTINCT	$[0.00,0.00,10.00]\;0.55\;/\;1.33$
SELECT_n_of_aggr_funcMAX	$[0.00,0.00,10.00]\;0.63\;/\;1.45$
SELECT_n_of_aggr_funcCOUNT	[0.00, 0.00, 12.00] 0.67 / 1.58
SELECT_n_of_aggr_funcMIN	[0.00, 0.00, 10.00] 0.71 / 1.54
SELECT_n_of_aggr_funcSUM	4
0	941 (94%)
1	42 (4.2%)
2	14 (1.4%)
3	3~(0.3%)
SELECT_n_of_aggr_funcAVG	

Query parameter or value	Descriptive statistics
0	955 (96%)
1	37 (3.7%)
2	6~(0.6%)
3	2~(0.2%)
SELECT_n_of_all_aggr_func	[0.00, 2.00, 12.00] $[2.69 / 2.34]$
FROM_n_of_join_paths	
1	328 (33%)
2	340 (34%)
3	332~(33%)
FROM_n_of_super_joinsRIGHT	
0	775 (78%)
1	204~(20%)
2	$21 \ (2.1\%)$
FROM_n_of_super_joinsLEFT	
θ	780 (78%)
1	195~(20%)
2	$25 \ (2.5\%)$
FROM_n_of_super_joinsFULL	(
0	779 (78%)
1	207 (21%)
	14 (1.4%)
FROM_n_of_joinsINNER	0.41 (0.407)
0	241 (24%)
1	283 (28%)
2	196 (20%)
3	142 (14%)
4	86 (8.6%)
5 6	$\begin{array}{c} 22 \ (2.2\%) \\ 21 \ (2.1\%) \end{array}$
7	8 (0.8%)
8	1 (0.3%)
FROM_n_of_joinsRIGHT	1 (0.170)
0	255 (26%)
1	253 (25%)
2	204 (20%)
3	141 (14%)
4	87 (8.7%)
5	38 (3.8%)
6	15 (1.5%)
7	5 (0.5%)
8	$2\;(0.2\%)$
FROM_n_of_processed_rows	[5, 68,179,156, 229,441,534] 68,142,511 / 61,094,347
WHERE_n_of_predicates	[0.00, 2.00, 10.00] 2.78 / 2.19
WHERE_n_of_attribs_of_typeinteger	, , , ,
0	483~(48%)
1	296 (30%)

2	Query parameter or value	Descriptive statistics
### ### ##############################	2	150 (15%)
## STATESTICK STATESTI	3	58 (5.8%)
### STATESTICK STATEST	4	
0 711 (71%) 1 223 (22%) 2 59 (5.9%) 3 7 (0.7%) WHERE_n_of_attribs_of_type numeric 0 65 (63%) 1 279 (28%) 2 75 (7.5%) 3 18 (1.8%) 4 3 (0.3%) WHERE_n_of_attribs_of_typecharacter_varying 6 0 456 (46%) 1 322 (32%) 2 150 (15%) 3 54 (5.4%) 4 4 (0.4%) WHERE_n_of_attribs_of_typedate 80 (80%) 0 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%)		1 (0.1%)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_attribs_of_typecharacter	•
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	711 (71%)
3 7 (0.7%) WHERE_n_of_attribs_of_typenumeric 625 (63%) 1 279 (28%) 2 75 (7.5%) 3 18 (1.8%) 4 3 (0.3%) WHERE_n_of_attribs_of_typecharacter_varying 456 (46%) 1 322 (32%) 2 150 (15%) 3 54 (5.4%) 4 14 (1.4%) 5 4 (0.4%) WHERE_n_of_attribs_of_typedate 802 (80%) 1 160 (16%) 2 34 (3.3%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operators_in 61	1	223~(22%)
WHERE_n_of_attribs_of_typenumeric 0 625 (63%) 1 279 (28%) 2 75 (7.5%) 3 18 (1.8%) 4 3 (0.3%) WHERE_n_of_attribs_of_type character_varying 0 456 (46%) 1 322 (32%) 2 150 (15%) 3 4 (0.4%) WHERE_n_of_attribs_of_typedate 0 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 0 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_connect_OR 0 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 4 1 (1.4%) 5 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 4 1 (0.1%) 8 WHERE_n_of_operators_in 0 614 (61%)	2	59 (5.9%)
0 625 (63%) 1 279 (28%) 2 75 (7.5%) 3 18 (1.8%) 4 3 (0.3%) WHERE_n_of_attribs_of_typecharacter_varying 0 456 (46%) 1 322 (32%) 2 150 (15%) 3 54 (5.4%) 4 14 (1.4%) 5 4 (0.4%) WHERE_n_of_attribs_of_typedate 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (40%) 6 19 (1.9%) 7 1 (0.1%) 8 8 (8.5%) 4 10 (10%) 5 40 (40%) <td>3</td> <td>7 (0.7%)</td>	3	7 (0.7%)
1 279 (28%) 2 75 (7.5%) 3 18 (1.8%) 4 3 (0.3%) WHERE_n_of_attribs_of_typecharacter_varying 0 456 (46%) 1 322 (32%) 2 150 (15%) 3 54 (5.4%) 4 14 (1.4%) 5 5 (5.4%) 4 4 (0.4%) WHERE_n_of_attribs_of_typedate 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 3 (0.3%) WHERE_n_of_pkey_attribs 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 1 (0.1%) 8 1 (0.1%) </td <td>$WHERE_n_of_attribs_of_type__numeric$</td> <td></td>	$WHERE_n_of_attribs_of_type__numeric$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	θ	625~(63%)
3 18 (1.8%) 4 3 (0.3%) WHERE_n_of_attribs_of_typecharacter_varying 0 456 (46%) 1 322 (32%) 2 150 (15%) 3 54 (5.4%) 4 14 (1.4%) 5 4 (0.4%) WHERE_n_of_attribs_of_typedate 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 614 (61%)	1	279~(28%)
WHERE_n_of_attribs_of_typecharacter_varying 0	2	75 (7.5%)
WHERE_n_of_attribs_of_typecharacter_varying 0	3	$18 \ (1.8\%)$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4	3~(0.3%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_attribs_of_typecharacter_varying	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	456~(46%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	322 (32%)
4 14 (1.4%) 5 4 (0.4%) WHERE_n_of_attribs_of_typedate 0 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 0 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) WHERE_n_of_operatorsin 0 614 (61%)	2	$150 \ (15\%)$
5 4 (0.4%) WHERE_n_of_attribs_of_typedate 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operators_in 614 (61%)	3	54 (5.4%)
WHERE_n_of_attribs_of_typedate 0	4	14 (1.4%)
0 802 (80%) 1 160 (16%) 2 34 (3.4%) 3 4 (0.4%) WHERE_n_of_pkey_attribs 648 (65%) 0 648 (65%) 1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operators_in 614 (61%)	5	4~(0.4%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	WHERE_n_of_attribs_of_typedate	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	802 (80%)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		$160 \ (16\%)$
WHERE_n_of_pkey_attribs 0	2	, ,
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3	4~(0.4%)
1 253 (25%) 2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 614 (61%)		
2 84 (8.4%) 3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operators_in 614 (61%)	0	` ,
3 14 (1.4%) 4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 614 (61%)		, ,
4 1 (0.1%) WHERE_n_of_connect_OR 464 (46%) 0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 614 (61%)		
WHERE_n_of_connect_OR 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operators_in 614 (61%)	3	
0 464 (46%) 1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operators_in 614 (61%)		1~(0.1%)
1 170 (17%) 2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 614 (61%)		
2 140 (14%) 3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 0 614 (61%)		` ,
3 85 (8.5%) 4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 614 (61%)		· · · · · · · · · · · · · · · · · · ·
4 79 (7.9%) 5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 614 (61%)		` ,
5 40 (4.0%) 6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 0 614 (61%)		, ,
6 19 (1.9%) 7 1 (0.1%) 8 2 (0.2%) WHERE_n_of_operatorsin 0 614 (61%)		,
7		· · · · · · · · · · · · · · · · · · ·
8 2 (0.2%) WHERE_n_of_operatorsin 0 614 (61%)		, ,
WHERE_n_of_operatorsin 614 (61%)		,
<i>0</i> 614 (61%)		2~(0.2%)
		(2.24)
261 (26%)		` ,
	1	261~(26%)

Query parameter or value	Descriptive statistics
2	97 (9.7%)
3	$26\ (2.6\%)$
4	$2\;(0.2\%)$
$WHERE_n_of_operators__greater_or_less$	
θ	429~(43%)
1	284~(28%)
2	167 (17%)
3	87 (8.7%)
4	$25 \; (2.5\%)$
5	7~(0.7%)
6	1~(0.1%)
WHERE_n_of_operatorsbetween	
0	635 (64%)
1	257 (26%)
2	82 (8.2%)
3	18 (1.8%)
4	8 (0.8%)
WHERE_n_of_operatorslike	010 (0104)
0	840 (84%)
1	144 (14%)
2 NUMBER (CODE	$16 \ (1.6\%)$
WHERE_n_of_non_aggr_funcSQRT	019 (0107)
0	912 (91%)
1	83 (8.3%)
WHERE p of non agen func. FLOOR	5~(0.5%)
WHERE_n_of_non_aggr_funcFLOOR	962 (96%)
1	37 (3.7%)
2	1 (0.1%)
WHERE_n_of_non_aggr_funcDOW	1 (0.170)
0	966 (97%)
1	34 (3.4%)
WHERE_n_of_non_aggr_funcDAY	01 (0.170)
0	959 (96%)
1	40 (4.0%)
2	1 (0.1%)
WHERE_n_of_non_aggr_funcTRUNC	()
0	959~(96%)
1	41 (4.1%)
WHERE_n_of_non_aggr_funcYEAR	,
0 $=$ $=$ $=$ ∞ $=$ $=$ 0	968 (97%)
1	31 (3.1%)
2	1 (0.1%)
WHERE_n_of_non_aggr_funcROUND	` '
0	966 (97%)
1	34 (3.4%)

Query parameter or value	Descriptive statistics
WHERE_n_of_non_aggr_funcABS	
0	960 (96%)
1	$39\ (3.9\%)$
2	1(0.1%)
WHERE_n_of_non_aggr_funcMONTH	, ,
0	970 (97%)
1	30 (3.0%)
WHERE_n_of_non_aggr_funcLOG	,
0	945 (95%)
1	54 (5.4%)
2	1(0.1%)
WHERE_n_of_all_non_aggr_func	,
0	667~(67%)
1	$242\ (24\%)$
2	74 (7.4%)
3	15~(1.5%)
4	2~(0.2%)
GROUP_BY_n_of_columns	[0.00, 2.00, 10.00] $2.30 / 2.12$
HAVING_n_of_main_predicates	
0	466~(47%)
1	197~(20%)
2	159~(16%)
3	178 (18%)
ORDER_BY_n_of_columns	
0	320~(32%)
1	370 (37%)
2	225~(23%)
3	58 (5.8%)
4	$16 \ (1.6\%)$
5	$8 \; (0.8\%)$
6	2 (0.2%)
7	1 (0.1%)
limit	[1, 517, 1,000] 503 / 292
offset	[0, 0, 993] 237 / 314