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

```
## Scenario: 1-6jp_ujjp__g_h0-3ss_h0nss

## Scale factor: 1000 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)
```

Query parameter or value	Descriptive statistics	
SELECT_n_of_columns	[1, 9, 164] 16 / 24	
SELECT_n_of_non_aggr_funcDAY		
0	861 (86%)	
1	100 (10%)	
2	23~(2.3%)	
3	6~(0.6%)	
4	8 (0.8%)	
5	1~(0.1%)	
6	1~(0.1%)	
SELECT_n_of_non_aggr_funcLOG		
0	862 (86%)	
1	$96 \ (9.6\%)$	
2	$26\ (2.6\%)$	
3	11 (1.1%)	
4	$3\ (0.3\%)$	

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

Query parameter or value	Descriptive statistics
5	1 (0.1%)
6	1 (0.1%)
SELECT_n_of_non_aggr_funcLOWER	[0.00,  0.00,  10.00]  0.65  /  1.18
SELECT_n_of_non_aggr_funcLTRIM	
0	636~(64%)
1	230 (23%)
2	77 (7.7%)
3	$28\ (2.8\%)$
4	$13\ (1.3\%)$
$\frac{1}{5}$	11 (1.1%)
6	2(0.2%)
$\gamma$	3(0.3%)
SELECT_n_of_non_aggr_funcMONTH	$[0.00, 0.00, 13.00] \ 0.42 \ / \ 1.06$
SELECT_n_of_non_aggr_funcROUND	
0	907 (91%)
1	78 (7.8%)
2	$12\;(1.2\%)$
3	2(0.2%)
4	1 (0.1%)
SELECT_n_of_non_aggr_funcRTRIM	[0.00,  0.00,  10.00]  0.67  /  1.23
SELECT_n_of_non_aggr_funcSQRT	
0	798 (80%)
1	137 (14%)
2	$31 \ (3.1\%)$
3	$13\ (1.3\%)$
4	11 (1.1%)
5	1~(0.1%)
6	4~(0.4%)
7	5~(0.5%)
SELECT_n_of_non_aggr_funcUPPER	
0	618~(62%)
1	248~(25%)
2	$82 \ (8.2\%)$
3	$27\ (2.7\%)$
4	10 (1.0%)
5	7 (0.7%)
6	3~(0.3%)
7	4~(0.4%)
8	1~(0.1%)
SELECT_n_of_non_aggr_funcYEAR	
0	800 (80%)
1	137 (14%)
2	$42\ (4.2\%)$
3	9 (0.9%)
4	4 (0.4%)

Query parameter or value	Descriptive statistics
6	1 (0.1%)
$\gamma$	3~(0.3%)
8	1 (0.1%)
SELECT_n_of_non_aggr_funcSUBSTR	
0	595~(60%)
1	264~(26%)
2	81 (8.1%)
3	28 (2.8%)
4	11 (1.1%)
5	10 (1.0%)
6	5 (0.5%)
7	4 (0.4%)
8	2~(0.2%)
SELECT_n_of_non_aggr_funcDOW	026 (0407)
<i>0 1</i>	836 (84%) 116 (12%)
11	, ,
2	$ \begin{array}{c} 1 \ (0.1\%) \\ 29 \ (2.9\%) \end{array} $
3	10 (1.0%)
	5 (0.5%)
<i>4 5</i>	2(0.2%)
7	1 (0.1%)
SELECT_n_of_non_aggr_funcFLOOR	1 (0.170)
0	914 (91%)
1	74 (7.4%)
2	11 (1.1%)
3	1 (0.1%)
SELECT_n_of_non_aggr_funcABS	,
0	909 (91%)
1	79 (7.9%)
2	11 (1.1%)
3	1 (0.1%)
SELECT_n_of_non_aggr_funcTRUNC	
0	921 (92%)
1	62~(6.2%)
2	$13 \ (1.3\%)$
3	3~(0.3%)
4	1~(0.1%)
SELECT_n_of_all_non_aggr_func	$[0, 3, 74] \ 5 \ / \ 9$
SELECT_n_of_aggr_funcMAX	[0.00,  0.00,  12.00]  0.84  /  1.96
SELECT_n_of_aggr_funcCOUNT_DISTINCT	[0.00, 0.00, 15.00] 0.84 / 2.00
SELECT_n_of_aggr_funcMIN	[0.00,  0.00,  11.00]   0.95   /   2.03
SELECT_n_of_aggr_funcAVG	000 (0004)
0	933 (93%)
1	46 (4.6%)
2	$18 \ (1.8\%)$

Query parameter or value	Descriptive statistics
3	1 (0.1%)
4	$2\;(0.2\%)$
SELECT_n_of_aggr_funcCOUNT	$[0.00, 0.00, 14.00] \ 0.81 \ / \ 2.02$
SELECT_n_of_aggr_funcSUM	
0	931 (93%)
1	$42\ (4.2\%)$
2	20~(2.0%)
3	$3\ (0.3\%)$
4	3~(0.3%)
5	1~(0.1%)
SELECT_n_of_all_aggr_func	$[0.0, 3.0, 15.0] \stackrel{?}{3.6} / 3.2$
FROM_n_of_join_paths	, , ,
	177 (18%)
2	$159\ (16\%)$
3	$159\ (16\%)$
4	$156\ (16\%)$
5	167 (17%)
6	182 (18%)
FROM_n_of_super_joinsRIGHT	
0	547 (55%)
1	302 (30%)
2	130 (13%)
3	19 (1.9%)
4	2(0.2%)
FROM_n_of_super_joinsFULL	( )
0	536 (54%)
1	$317\ (32\%)$
2	$117\ (12\%)$
3	28 (2.8%)
4	$2\;(0.2\%)^{'}$
FROM_n_of_super_joinsLEFT	,
$0$ $=$ $=$ $1$ $\longrightarrow$ $=$	541 (54%)
1	313 (31%)
2	108 (11%)
3	32 (3.2%)
4	6(0.6%)
FROM_n_of_joinsINNER	[0.00,  3.00,  13.00]   3.35  /   2.51
FROM_n_of_joinsRIGHT	[0.00, 3.00, 12.00] $3.34 / 2.48$
FROM_n_of_processed_rows	[5, 9,424,989,724, 42,559,938,309] 12,298,444,138 /
r	10,054,929,038
WHERE_n_of_predicates	[0.00, 3.00, 12.00] $3.80 / 2.94$
WHERE n_of_attribs_of_typechara	
0	363 (36%)
1	295 (30%)
2	187 (19%)
3	100 (10%)
-	

HERE_n_of_attribs_of_typecharacter  HERE_n_of_attribs_of_typenumeric  HERE_n_of_attribs_of_typenumeric	35 (3.5%) 14 (1.4%) 4 (0.4%) 2 (0.2%)  389 (39%) 289 (29%) 156 (16%) 100 (10%) 42 (4.2%) 18 (1.8%) 6 (0.6%)  630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%)  569 (57%) 291 (29%)
HERE_n_of_attribs_of_typecharacter  HERE_n_of_attribs_of_typenumeric	4 (0.4%) 2 (0.2%) 389 (39%) 289 (29%) 156 (16%) 100 (10%) 42 (4.2%) 18 (1.8%) 6 (0.6%) 630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%) 569 (57%) 291 (29%)
HERE_n_of_attribs_of_typecharacter  HERE_n_of_attribs_of_typenumeric	2 (0.2%)  389 (39%) 289 (29%) 156 (16%) 100 (10%) 42 (4.2%) 18 (1.8%) 6 (0.6%)  630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%)  569 (57%) 291 (29%)
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HERE_n_of_attribs_of_typenumeric	100 (10%) 42 (4.2%) 18 (1.8%) 6 (0.6%) 630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%) 569 (57%) 291 (29%)
HERE_n_of_attribs_of_typenumeric	42 (4.2%) 18 (1.8%) 6 (0.6%) 630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%) 569 (57%) 291 (29%)
HERE_n_of_attribs_of_typenumeric	18 (1.8%) 6 (0.6%) 630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%) 569 (57%) 291 (29%)
HERE_n_of_attribs_of_typenumeric	18 (1.8%) 6 (0.6%) 630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%) 569 (57%) 291 (29%)
HERE_n_of_attribs_of_typenumeric	630 (63%) 272 (27%) 68 (6.8%) 25 (2.5%) 5 (0.5%) 569 (57%) 291 (29%)
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	25 (2.5%) 5 (0.5%) 569 (57%) 291 (29%)
	5 (0.5%) 569 (57%) 291 (29%)
	569 (57%) 291 (29%)
	291 (29%)
HERE_n_of_attribs_of_typedate	291 (29%)
HERE_n_of_attribs_of_typedate	, ,
HERE_n_of_attribs_of_typedate	97 (9.7%)
HERE_n_of_attribs_of_typedate	38 (3.8%)
HERE_n_of_attribs_of_typedate	5 (0.5%)
	,
	778 (78%)
	185 (19%)
	29 (2.9%)
	6 (0.6%)
	2(0.2%)
HERE_n_of_pkey_attribs	,
,	574 (57%)
	268 (27%)
	109 (11%)
	35 (3.5%)
	12 (1.2%)
	1 (0.1%)
	1 (0.1%)
HERE_n_of_connect_OR [0.0	0, 1.00, 11.00] 2.16 / 2.39
HERE_n_of_operatorsbetween	, , , , , , , , , , , , , , , , , , , ,
	519 (52%)
	300 (30%)
	120 (12%)
	±=0 (±=/0)
	50 (5.0%)
	50 (5.0%) 9 (0.9%)

Query parameter or value	Descriptive statistics	
6	1 (0.1%)	
$WHERE\_n\_of\_operators\_\_greater\_or\_less$		
$\theta$	317 (32%)	
1	272 (27%)	
2	201 (20%)	
3	122 (12%)	
4	48 (4.8%)	
5	24 (2.4%)	
6	9 (0.9%)	
7	6 (0.6%)	
8 WHERE p of appretors in	1 (0.1%)	
WHERE_n_of_operatorsin 0	547 (55%)	
1	292 (29%)	
2	105 (11%)	
3	45 (4.5%)	
4	7 (0.7%)	
5	4(0.4%)	
WHERE_n_of_operatorslike	(- , 3)	
0	785 (79%)	
1	184 (18%)	
2	$29\ (2.9\%)$	
3	$2\;(0.2\%)$	
$WHERE\_n\_of\_non\_aggr\_func\_\_SQRT$		
0	884 (88%)	
1	104~(10%)	
2	$12 \ (1.2\%)$	
WHERE_n_of_non_aggr_funcFLOOR	(	
0	960 (96%)	
1	$40 \ (4.0\%)$	
WHERE_n_of_non_aggr_funcTRUNC	0.47 (0.504)	
0	947 (95%)	
1 WHERE p of non ager fund POUND	$53 \ (5.3\%)$	
WHERE_n_of_non_aggr_funcROUND 0	948 (95%)	
1	49 (4.9%)	
2	3(0.3%)	
WHERE_n_of_non_aggr_funcABS	0 (0.070)	
0	960 (96%)	
1	40 (4.0%)	
WHERE_n_of_non_aggr_funcDOW	(,0)	
0	967 (97%)	
1	33 (3.3%)	
WHERE_n_of_non_aggr_funcLOG	` ,	
0	932~(93%)	
1	61 (6.1%)	

Query parameter or value	Descriptive statistics
2	7 (0.7%)
WHERE_n_of_non_aggr_funcMONTH	
0	958 (96%)
1	39(3.9%)
2	2~(0.2%)
3	1(0.1%)
WHERE_n_of_non_aggr_funcYEAR	
0	963~(96%)
1	37 (3.7%)
WHERE_n_of_non_aggr_funcDAY	
0	963~(96%)
1	37 (3.7%)
WHERE_n_of_all_non_aggr_func	
0	646~(65%)
1	223~(22%)
2	91 (9.1%)
3	26 (2.6%)
4	9~(0.9%)
5	5~(0.5%)
GROUP_BY_n_of_columns	$[0.00, 2.00, 13.00] \ 2.96 \ / \ 2.81$
$HAVING\_n\_of\_main\_predicates$	
0	305 (31%)
1	94 (9.4%)
2	$142 \ (14\%)$
3	159 (16%)
4	157 (16%)
5	93 (9.3%)
6	50 (5.0%)
HAVING_n_of_main_predicatesscalar_subquery	7
0	462~(46%)
1	$169 \ (17\%)$
2	176 (18%)
3	$193 \ (19\%)$
HAVING_n_of_subqueriesscalar_subquery	[0.0,  1.0,  28.0]  2.3  /  3.7
HAVING_n_of_processed_rows_by_subqu@:ide65,00	
	$61,\!280,\!548,\!037$
ORDER_BY_n_of_columns	
0	303 (30%)
1	327 (33%)
2	226 (23%)
3	$103\ (10\%)$
4	28 (2.8%)
5	$6\ (0.6\%)$
6	5 (0.5%)
7	1 (0.1%)
8	1 (0.1%)

Query parameter or value	Descriptive statistics
limit	[1, 512, 998] 505 / 291
offset	[0, 41, 994] 267 / 327