VE482 — Introduction to

Operating Systems

Payroll (Team 02)

1   Documentation

	Score	Out of
Clearly explain the design	1	6
Detailed information on the performance improvements	0	6
How common problems related to multi-threading were overcome	1	5
Other information that could ease the work of the future LemonDB developers	0.5	3
Total	2.5	20

2   Correctness

In the listen queries, TLE means that your program is not able to respond to queries piped into the listened files.

Test Case	Time (second)										Score	Out of
quit	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.004	2	2
management	1.022	1.018	1.029	1.012	1.040	1.022	1.017	1.014	1.032	1.063	3	3
all	RTE	/	/	/	/	/	/	/	/	/	0	15
listen 1	RTE	/	/	/	/	/	/	/	/	/		
listen 2	RTE	/	/	/	/	/	/	/	/	/		
listen 3	RTE	/	/	/	/	/	/	/	/	/		
listen 4	TLE	/	/	/	/	/	/	/	/	/	0	10
listen 5	RTE	/	/	/	/	/	/	/	/	/		
listen 6	TLE	/	/	/	/	/	/	/	/	/		
listen 7	TLE	/	/	/	/	/	/	/	/	/		
listen 8	RTE	/	/	/	/	/	/	/	/	/		
Total						/					5	30

Table 1: Result of correctness cases.

3 Performance

In the performance test, any error will lead to zero for the test case. The fastest and slowest time for each case are omitted.

TLE means that your program exceeds 2 times of the single thread base program so it is unnecessary to test this case anymore.

Test Case	Time (second)										Average	Base	LogRatio	Score
single read	~~25.960~~	~~26.329~~	26.196	26.146	26.142	26.301	26.041	26.287	26.306	26.115	26.192	19.523	0.000	0.000
single read update	27.266	27.429	27.728	~~27.863~~	27.830	27.812	27.393	27.604	27.374	~~27.247~~	27.555	20.012	0.000	0.000
single read dup	40.089	40.178	39.938	~~39.903~~	40.034	39.962	39.925	40.195	~~40.439~~	39.919	40.030	27.127	0.000	0.000
single insert delete	23.348	~~22.931~~	23.130	23.239	23.269	23.279	~~23.481~~	23.189	23.278	23.328	23.258	16.163	0.000	0.000
few read	TLE	/	/	/	/	/	/	/	/	/	/	16.581	0.000	0.000
few read update	TLE	/	/	/	/	/	/	/	/	/	/	17.246	0.000	0.000
few read dup	RTE	/	/	/	/	/	/	/	/	/	/	79.760	0.000	0.000
few insert delete	TLE	/	/	/	/	/	/	/	/	/	/	12.206	0.000	0.000
many read	RTE	/	/	/	/	/	/	/	/	/	/	13.894	0.000	0.000
many read update	RTE	/	/	/	/	/	/	/	/	/	/	13.023	0.000	0.000
many read dup	RTE	/	/	/	/	/	/	/	/	/	/	15.558	0.000	0.000
many insert delete	RTE	/	/	/	/	/	/	/	/	/	/	12.634	0.000	0.000
Total						/					/		0.000	0.000

Table 2: Result of performance cases.

Appendix

Tested on Linux-5.13.19-2-MANJARO-x86_64-with-glibc2.33, with Intel(R) Core(TM) i9-9820X CPU @ 3.30GHz, 20 threads and 62.5G memory.

All files are stored on a memory-based fs.

The source code of the test framework is based on https://github.com/tc-imba/VE482-p2-testcase and modified for 21FA.

Error Names:

- CE: Compile Error
- TLE: Time Limit Exceeded
- RTE: Runtime Error
- WA: Wrong Answer