Query Optimization Summary

Author: Olivia Rueschhoff

Position: Data Reporting Intern at RLI Insurance Company Notice:

Due to Privacy Query names have been removed.

Below is a table of the original runtime the SQL queries ran at before I made any adjustments and then the runtimes after I optimized the query runtime. In addition to improving runtime and efficiency, I also removed calling on views so that the queries can be passed into the new database they're going to get added to and I improved readability of the files for easier traversing.

	Original Runtime	My SQL New Runtime
Query 1	3:29	0:20
Query 2	0:38	0:33
Query 3	3:15	0:33
Query 4	0:31	0:26
Query 5	2:46	0:07
Query 6	3:08	1:43
Query 7	4:31	1:42
Query 8	1:38	0:10

Query 9	8:19	3:13
Query 10	7:58	1:19
Query 11	4:15	1:48
Query 12	1:31	0:15
Query 13	5:19	0:09
Query 14	7:50	1:18
Query 15	9:46	2:30
Query 16	5:30	5:33
Query 17	9:53	6:43
Query 18	6:11	3:14
Query 19	2:02	1:01
Query 20	0:04	0:00
Query 21	0:21	0:03
Note: Runtimes were approximated by running both queries at the same time 5 times and the average amount of time (Minutes:Seconds) was recorded.		

The runtime was improved using a variety of tools including:

- Restructuring Joins
- Indexing
- Redesigning filtering logic
- Removing redundancies
- Combining temp queries
- Using 1-2 CTEs instead of 3-5 temp tables
- Seemingly minor format changes that had larger effects than expected
    - Changing from ‘ ‘ column renames to [ ] when working with 25+ columns