DB Assignment 6

Brennan Duff

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Query Type:	Description:	Dataset Size:	Index Type:	Average Execution Time (Microseconds):
Point Query 1:	SELECT COUNT(*) FROM accounts WHERE branch_name = "Branch_1" AND balance = 50000	50,000	branch_name, account_type, balance	135
			none	18251
Point Query 2:		100,000	branch_name, account_type, balance	147
			none	38516
Point Query 3:		150,000	branch_name, account_type, balance	294
			none	59933
Range Query 1:	SELECT COUNT(*) FROM accounts WHERE branch_name = "Branch_1" AND balance BETWEEN 10000 AND 50000	50,000	branch_name, account_type, balance	11052
			none	24499
Range Query 2:		100,000	branch_name, account_type, balance	16903
			none	40861
Range Query 3:		150,000	branch_name, account_type, balance	32055
			none	65041

Point Queries

1. Point Query 1:
    - With Indexing: Execution time was 135 microseconds.
    - Without Indexing: Execution time was 18,251 microseconds.
    - Indexing reduced the execution time by over 99%.
2. Point Query 2:
    - With Indexing: Execution time was 147 microseconds.
    - Without Indexing: Execution time was 38,516 microseconds.
    - Indexing resulted in a similar reduction of execution time by over 99%.
3. Point Query 3:
    - With Indexing: Execution time was 294 microseconds.
    - Without Indexing: Execution time was 59,933 microseconds.
    - The trend of improved performance with indexing was consistent.

Range Queries

1. Range Query 1:
    - With Indexing: Execution time was 11,052 microseconds.
    - Without Indexing: Execution time was 24,499 microseconds.
    - While the performance improvement was notable (55% reduction), range queries benefit less from indexing compared to point queries due to the need to scan larger portions of data.
2. Range Query 2:
    - With Indexing: Execution time was 16,903 microseconds.
    - Without Indexing: Execution time was 40,861 microseconds.
    - Indexing reduced execution time by approximately 59%, less than point queries.
3. Range Query 3:
    - With Indexing: Execution time was 32,055 microseconds.
    - Without Indexing: Execution time was 65,041 microseconds.
    - Indexing halved the execution time, but the query still exhibited higher execution times compared to point queries.