**Time Complexity:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | skiplist | skiplist | skiplist | skiplist | Lsm tree | Lsm tree | Lsm tree | Lsm tree |
|  | Insert | Delete | Search | Range Query | Insert | Delete | Search | Range Query |
| 10K | 0.165 seconds | 0.022 seconds | 0.003 seconds | 0.001 seconds | 0.035  seconds | 0.001  seconds | 0.00097  seconds | 0.00099  seconds |
| 100K | 1.384 seconds | 0.147 seconds | 0.03  seconds | 0.00099 seconds | 0.4901 seconds | 0.001  seconds | 0.0089 seconds | 0.0490 seconds |
| 1M | 17.692  seconds | 1.456 seconds | 0.2342  seconds | 0.004 seconds | 13.01  seconds | 0.222  seconds | 1.234  seconds | 0.448  Seconds |
| 10M | 280.988 seconds | 13.009 seconds | 2.5323  seconds | 0.0645 seconds | 169.65  seconds | 2.33  seconds | 2.56  seconds | 0.565  seconds |

**Space Complexity:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **skiplist** | **skiplist** | **skiplist** | **skiplist** | **Lsm tree** | **Lsm tree** | **Lsm tree** | **Lsm tree** |
|  | Insert | Delete | Search | Range Query | Insert | Delete | Search | Range Query |
| 10K | 283.004  KB | 282.976  KB | 281.758  KB | 34.749  KB | 283.146  KB | 283.118  KB | - | - |
| 100K | 2832.002  KB | 2831.974 KB | 1740.594  KB | 1222.304 KB | 2831.9746 KB | 2831.97459 KB | - | - |
| 1M | 28320.284 KB | 28320.255 KB | 12655.781 KB | 3923.779 KB | 104243.2  KB | 104243.09  KB | - | - |
| 10M | 283203.125 KB | 283203.096 KB | 147617.504 KB | 46842.589  KB | 210688.5  KB | 210687.9  KB | - | - |