Big O:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| File | ADT# | Insert | Delete | Series of Inserts | Series of Deletions | Entire File |
| 1 | 6(SkipList) |  |  |  |  |  |
| 2 | 6 |  |  |  |  |  |
| 3 | 6 |  |  |  |  |  |
| 4 | 6 |  |  |  |  |  |
| 1 | 7(Binary Search Tree) |  |  |  |  |  |
| 2 | 7 |  |  |  |  |  |
| 3 | 7 |  |  |  |  |  |
| 4 | 7 |  |  |  |  |  |
| 1 | 8(AVL Tree) |  |  |  |  |  |
| 2 | 8 |  |  |  |  |  |
| 3 | 8 |  |  |  |  |  |
| 4 | 8 |  |  |  |  |  |
| 1 | 9(Splay Tree) |  |  |  |  |  |
| 2 | 9 |  | (amortized ) |  | (amortized) | (amortized)N2 (big o) |
| 3 | 9 |  |  |  |  |  |
| 4 | 9 |  |  |  |  |  |
| 1 | 10 (B+ Tree M=3;L=1) |  | 0 | N \* | 0 | N \* |
| 2 | 10 |  |  |  | N \* | N \* |
| 3 | 10 |  |  | N \* | N \* | N \* |
| 4 | 10 |  |  | N \* | N \* | N \* |
| 1 | 10(3;200) |  | 0 |  | 0 |  |
| 2 | 10 |  |  |  |  |  |
| 3 | 10 |  |  |  |  |  |
| 4 | 10 |  |  |  |  |  |
| 1 | 10(1000;2) |  | 0 |  | 0 |  |
| 2 | 10 |  |  |  |  |  |
| 3 | 10 |  |  |  |  |  |
| 4 | 10 |  |  |  |  |  |
| 1 | 10(1000; 300) |  | 0 |  | 0 |  |
| 2 | 10 |  |  |  |  |  |
| 3 | 10 |  |  |  |  |  |
| 4 | 10 |  |  |  |  |  |
| 1 | 11(Separate Chaining Hash **λ** = .5) |  |  |  |  |  |
| 2 | 11 |  |  |  |  |  |
| 3 | 11 |  |  |  |  |  |
| 4 | 11 |  |  |  |  |  |
| 1 | 11(Separate Chaining Hash **λ** = 1) |  |  |  |  |  |
| 2 | 11 |  |  |  |  |  |
| 3 | 11 |  |  |  |  |  |
| 4 | 11 |  |  |  |  |  |
| 1 | 11(Separate Chaining Hash **λ** = 10) |  |  |  |  |  |
| 2 | 11 |  | 10, O(1) |  | 10n (Big O is n) |  |
| 3 | 11 |  | 10, O(1) |  | 10n ^see above |  |
| 4 | 11 |  | 10, O(1) |  | 10n ^see above |  |
| 1 | 11(Separate Chaining Hash **λ** = 100) | 1 (worst case O(100)) |  |  |  |  |
| 2 | 11 |  |  |  | 100n (Big O is n) |  |
| 3 | 11 |  |  |  |  |  |
| 4 | 11 |  |  |  |  |  |
| 1 | 11(Separate Chaining Hash **λ** = 1000) | 1 (worst case O(1000) |  |  |  |  |
| 2 | 11 |  | 1000, O(1) |  |  |  |
| 3 | 11 |  | 1000 |  |  |  |
| 4 | 11 |  | 1000 |  |  |  |
| 1 | 12(Quadratic Probing Hash **λ** = 2) |  |  | \*tableSize |  | \*tableSize, or n since tableSize is const |
| 2 | 12 |  | , O(1) |  | 2n (Big O is n) |  |
| 3 | 12 |  |  |  |  |  |
| 4 | 12 |  |  |  |  |  |
| 1 | 12(Quadratic Probing Hash **λ** = 1) |  |  |  |  |  |
| 2 | 12 |  |  |  |  |  |
| 3 | 12 |  |  |  |  |  |
| 4 | 12 |  |  |  |  |  |
| 1 | 12(Quadratic Probing Hash **λ** = .5) |  |  |  |  |  |
| 2 | 12 |  |  |  |  |  |
| 3 | 12 |  |  |  |  |  |
| 4 | 12 |  |  |  |  |  |
| 1 | 12(Quadratic Probing Hash **λ** = .25) |  |  |  |  |  |
| 2 | 12 |  |  |  |  |  |
| 3 | 12 |  |  |  |  |  |
| 4 | 12 |  |  |  |  |  |
| 1 | 12(Quadratic Probing Hash **λ** = .1) |  |  |  |  |  |
| 2 | 12 |  |  |  |  |  |
| 3 | 12 |  |  |  |  |  |
| 4 | 12 |  |  |  |  |  |
| 1 | 13 Binary Heap (min) |  |  |  |  |  |
| 2 | 13 |  | Log n |  | N log n | N log n |
| 3 | 13 |  | Log n |  | N log n | N log n |
| 4 | 13 | Log n | Log n | N log n | N log n | N log n |
| 1 | 14(Quadratic Probing Pointer Hash **λ** = 2) |  |  |  |  |  |
| 2 | 14 |  |  |  |  |  |
| 3 | 14 |  |  |  |  |  |
| 4 | 14 |  |  |  |  |  |
| 1 | 14(Quadratic Probing Pointer Hash **λ** = 1) |  |  |  |  |  |
| 2 | 14 |  |  |  |  |  |
| 3 | 14 |  |  |  |  |  |
| 4 | 14 |  |  |  |  |  |
| 1 | 14(Quadratic Probing Pointer Hash **λ** = .5) |  |  |  |  |  |
| 2 | 14 |  |  |  |  |  |
| 3 | 14 |  |  |  |  |  |
| 4 | 14 |  |  |  |  |  |
| 1 | 14(Quadratic Probing Pointer Hash **λ** = .25) |  |  |  |  |  |
| 2 | 14 |  |  |  |  |  |
| 3 | 14 |  |  |  |  |  |
| 4 | 14 |  |  |  |  |  |
| 1 | 14(Quadratic Probing Pointer Hash **λ** = .1) |  |  |  |  |  |
| 2 | 14 |  |  |  |  |  |
| 3 | 14 |  |  |  |  |  |
| 4 | 14 |  |  |  |  |  |