7.18. Summary of Map ADT Implementations

Over the past two chapters we have looked at several data structures that can be used to implement the map abstract data type. A binary Search on a list, a hash table, a binary search tree, and a balanced binary search tree. To conclude this section, let's summarize the performance of each data structure for the key operations defined by the map ADT (see Table 1).

Table 1: Comparing the Performance of Different Map Implementations

operation	Sorted List	Hash Table	Binary Search Tree	AVL Tree
put	$O(n)$	$O(1)$	$O(n)$	$O(\log_2 n)$
get	$O(\log_2 n)$	$O(1)$	$O(n)$	$O(\log_2 n)$
in	$O(\log_2 n)$	$O(1)$	$O(n)$	$O(\log_2 n)$
del	$O(n)$	$O(1)$	$O(n)$	$O(\log_2 n)$

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