Common Data Structure Operations

Data Structure	Time Complexity								Space Complexity
	Average				Worst				Worst
	Access	Search	Insertion	Deletion	Access	Search	Insertion	Deletion	
<u>Array</u>	Θ(1)	Θ(n)	Θ(n)	Θ(n)	0(1)	0(n)	0(n)	0(n)	0(n)
<u>Stack</u>	Θ(n)	Θ(n)	Θ(1)	0(1)	0(n)	0(n)	0(1)	0(1)	0(n)
<u>Queue</u>	<u>Θ(n)</u>	Θ(n)	Θ(1)	Θ(1)	0(n)	0(n)	0(1)	0(1)	0(n)
Singly-Linked List	<u>Θ(n)</u>	<u>Θ(n)</u>	Θ(1)	Θ(1)	0(n)	0(n)	0(1)	0(1)	0(n)
Doubly-Linked List	<u>Θ(n)</u>	<u>Θ(n)</u>	Θ(1)	0(1)	0(n)	0(n)	0(1)	0(1)	0(n)
Skip List	Θ(log(n))	Θ(log(n))	θ(log(n))	Θ(log(n))	0(n)	0(n)	0(n)	0(n)	0(n log(n))
Hash Table	N/A	Θ(1)	Θ(1)	0(1)	N/A	0(n)	0(n)	0(n)	0(n)
Binary Search Tree	Θ(log(n))	Θ(log(n))	θ(log(n))	Θ(log(n))	0(n)	0(n)	0(n)	0(n)	0(n)
Cartesian Tree	N/A	Θ(log(n))	θ(log(n))	Θ(log(n))	N/A	0(n)	0(n)	0(n)	0(n)
B-Tree	θ(log(n))	Θ(log(n))	θ(log(n))	Θ(log(n))	0(log(n))	0(log(n))	0(log(n))	0(log(n))	0(n)
Red-Black Tree	θ(log(n))	Θ(log(n))	θ(log(n))	Θ(log(n))	0(log(n))	0(log(n))	0(log(n))	0(log(n))	0(n)
Splay Tree	N/A	Θ(log(n))	θ(log(n))	Θ(log(n))	N/A	0(log(n))	0(log(n))	0(log(n))	0(n)
AVL Tree	Θ(log(n))	Θ(log(n))	θ(log(n))	Θ(log(n))	0(log(n))	0(log(n))	O(log(n))	0(log(n))	0(n)
KD Tree	Θ(log(n))	Θ(log(n))	θ(log(n))	Θ(log(n))	0(n)	0(n)	0(n)	0(n)	0(n)