Data Structure

- Time Complexity :-

Average

Data Structure	Access	Search	Insertion	Delation
Array	O(1)	O(n)	O(n)	O(n)
Stack	O(n)	O(n)	O(1)	O(1)
Singly-Linked List	O(n)	O(n)	O(1)	O(1)
Doubly-Linked List	O(n)	O(n)	O(1)	O(1)
Skip List	O(log(n))	O(log(n))	O(log(n))	O(log(n))
Hash Table	–	O(1)	O(1)	O(1)
Binary Search Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))
Cartesian Tree	–	O(log(n))	O(log(n))	O(log(n))
B-Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))
Red-Black Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))
Splay Tree	–	O(log(n))	O(log(n))	O(log(n))
AVL Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))

- **Time Complexity :-**

Worst

Data Structure	Access	Search	Insertion	Delation
Array	O(1)	O(n)	O(n)	O(n)
Stack	O(n)	O(n)	O(1)	O(1)
Singly-Linked List	O(n)	O(n)	O(1)	O(1)
Doubly-Linked List	O(n)	O(n)	O(1)	O(1)
Skip List	O(n)	O(n)	O(n)	O(n)
Hash Table	–	O(n)	O(n)	O(n)
Binary Search Tree	O(n)	O(n)	O(n)	O(n)
Cartesian Tree	–	O(n)	O(n)	O(n)
B-Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))
Red-Black Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))
Splay Tree	–	O(log(n))	O(log(n))	O(log(n))
AVL Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))

- **Space Complexity :-**

Data Structure	Space Complexity
Array	O(n)
Stack	O(n)
Singly-Linked List	O(n)
Doubly-Linked List	O(n)
Skip List	O(n(log(n)))
Hash Table	O(n)
Binary Search Tree	O(n)
Cartesian Tree	O(n)
B-Tree	O(n)
Red-Black Tree	O(n)
Splay Tree	O(n)
AVL Tree	O(n)