Structure	Addition of new element	Removal of first element	Removal of middle element	Inclusion test
Vector	$O(1)$ or $O(n)$ †	$O(n)$	$O(1)$ or $O(n)$ †	$O(n)$ or $O(\log n)$ ‡
indexed, random access to elements, bounded size				
List	$O(1)$	$O(1)$	$O(1)$	$O(n)$
sequential access to elements, rapid insertion and removal				
Deque	$O(1)$	$O(1)$	$O(n)$	$O(n)$ or $O(\log n)$ ‡
random access, rapid insertion to front and back				
Stack	$O(1)$	$O(1)$	NA	NA
insertion and removal only from front				
Queue	$O(1)$	$O(1)$	NA	NA
insertion only from front, removal only from back				
Priority Queue	$O(\log n)$	$O(1)$ or $O(\log n)$ §	NA	NA
rapid removal of largest element				
Set	$O(\log n)$	$O(\log n)$	$O(\log n)$	$O(\log n)$
ordered collection, unique values, rapid insertion, removal and test a `multiset` allows repeated elements				
Map	$O(\log n)$	$O(\log n)$	$O(\log n)$	$O(\log n)$
collection of key-value pairs a `multimap` allows multiple elements with same key				
Notes	†constant if accessing existing position, linear if inserting/removing ‡logarithmic if ordered, linear if not ordered §constant access time, logarithmic removal			