**Runtime Analysis Chart**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Method | Array | | Singly Linked | | | Doubly Linked | | |
|  | **average** | **worst** | | **no tail** | **tail** | | **no tail** | **tail** |
| Object get(int pos) | **O(1)** | **O(1)** | | **O(n)** | **O(n)** | | **O(n)** | **O(n)** |
| int size() | **O(1)** | **O(1)** | | **O(1)** | **O(1)** | | **O(1)** | **O(1)** |
| int find(Object o) | **O(n)** | **O(n)** | | **O(n)** | **O(n)** | | **O(n)** | **O(n)** |
| String toString() | **O(n)** | **O(n)** | | **O(n)** | **O(n)** | | **O(n)** | **O(n)** |
| void addAt(Object o, int pos) | **O(n)** | **O(n)** | | **O(n)** | **O(n)** | | **O(n)** | **O(n)** |
| void addFront(Object o) | **O(n)** | **O(n)** | | **O(1)** | **O(1)** | | **O(1)** | **O(1)** |
| void addBack(Object o) | **O(1)** | **O(n)** | | **O(n)** | **O(1)** | | **O(n)** | **O(1)** |
| void removeAt(int pos) | **O(n)** | **O(n)** | | **O(n)** | **O(n)** | | **O(n)** | **O(n)** |
| void removeFront() | **O(n)** | **O(n)** | | **O(1)** | **O(1)** | | **O(1)** | **O(1)** |
| void removeBack() | **O(1)** | **O(1)** | | **O(n)** | **O(n)** | | **O(n)** | **O(1)** |
| void swapElements(int pos1, int pos2) | **O(1)** | **O(1)** | | **O(n)** | **O(n)** | | **O(n)** | **O(n)** |