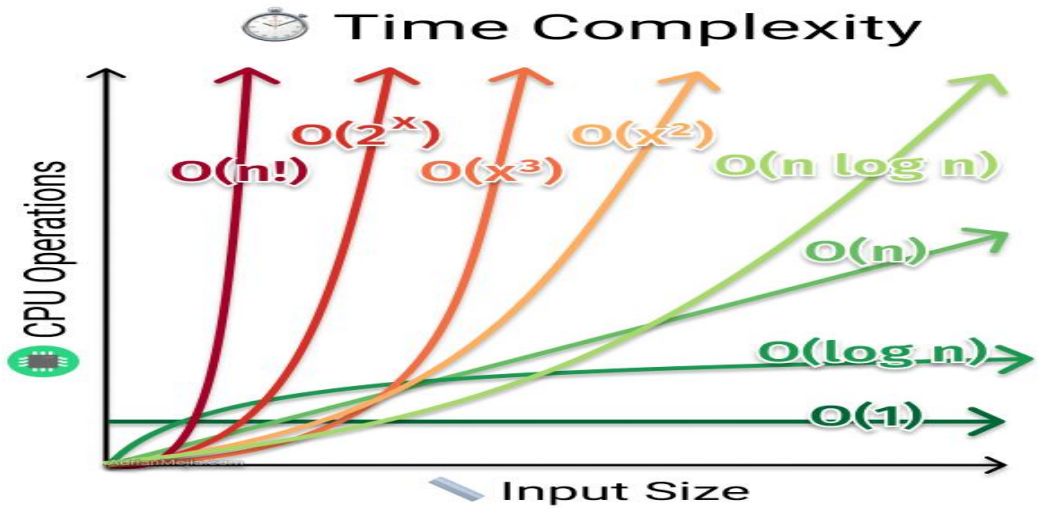


1.

**Access (Get element by index)**

| Structure | Time Complexity |
|---|---|
| Array | **O(1)** |
| List (Dynamic Array) | **O(1)** |
| Stack | **O(1)** (Top only) |
| Queue | **O(1)** (Front only) |
| Singly Linked List (SLL) | **O(n)** |
| Doubly Linked List (DLL) | **O(n)** |

**2. Search (Find an element)**

| Structure | Time Complexity |
|---|---|
| Array | **O(n)** |
| List (Dynamic Array) | **O(n)** |
| Stack | **O(n)** (Must pop elements) |
| Queue | **O(n)** (Must dequeue elements) |
| Singly Linked List (SLL) | **O(n)** |
| Doubly Linked List (DLL) | **O(n)** |

**3. Insertion**

| Structure | Insert at Start | Insert at End | Insert at Middle |
|---|---|---|---|
| **Array** | **O(n)** (Shift elements) | **O(1)** (If space) / **O(n)** (If resize) | **O(n)** |
| **List (Dynamic Array)** | **O(n)** | **O(1)** (Amortized) | **O(n)** |
| **Stack** | ❌ Not allowed | **O(1)** (Push) | ❌ Not allowed |
| **Queue** | ❌ Not allowed | **O(1)** (Enqueue) | ❌ Not allowed |
| **Singly Linked List (SLL)** | **O(1)** | **O(1)** (If tail pointer) / **O(n)** (Otherwise) | **O(n)** (Search + Insert) |

| Structure | Insert at Start | Insert at End | Insert at Middle |
|---|---|---|---|
| **Doubly Linked List (DLL)** | **O(1)** | **O(1)** | **O(n)** (Search + Insert) |

**4. Deletion**

| Structure | Delete at Start | Delete at End | Delete at Middle |
|---|---|---|---|
| **Array** | **O(n)** (Shift elements) | **O(1)** | **O(n)** |
| **List (Dynamic Array)** | **O(n)** | **O(1)** | **O(n)** |
| **Stack** | ❌ Not allowed | **O(1)** (Pop) | ❌ Not allowed |
| **Queue** | **O(1)** (Dequeue) | ❌ Not allowed | ❌ Not allowed |
| **Singly Linked List (SLL)** | **O(1)** | **O(n)** (Must traverse) | **O(n)** (Search + Delete) |
| **Doubly Linked List (DLL)** | **O(1)** | **O(1)** | **O(n)** (Search + Delete) |

**5. Space Complexity**

| Structure | Space Complexity |
|---|---|
| **Array** | **O(n)** (Fixed) |
| **List (Dynamic Array)** | **O(n)** (Resizes) |
| **Stack** | **O(n)** |
| **Queue** | **O(n)** |

| Structure | Space Complexity |
| --- | --- |
| **Singly Linked List (SLL)** | **O(n)** + **O(1)** per node |
| **Doubly Linked List (DLL)** | **O(n)** + **O(2)** per node |