# Order of Complexities

### 1. Arrays, ArrayLists, Singly Linked List

|  | Array | ArrayList | LinkedList |  |
|---|---|---|---|---|
| Find e by index |  |  |  |  |
| Find element by value |  |  |  |  |
| Clone a list |  |  |  |  |
|  | Array | ArrayList | With Tall | Without Tail |
| Add e to interior |  |  |  |  |
| Remove e from interior |  |  |  |  |
| Add e to end |  |  |  |  |
| Remove e from end |  |  |  |  |

### 2. Stacks

| Arrays | Top always index | Bottom always index |
|---|---|---|
| Push |  |  |
| Pop |  |  |
| Singly LinkedLists | Top is head | Top is tail |
| Push |  |  |
| Pop |  |  |

### 3. Queues

| Arrays | front always index | rear always index |
|---|---|---|
| Enqueue |  |  |
| Dequeue |  |  |
| Singly LinkedLists | Front is head | Front is tail |
| Enqueue |  |  |
| Dequeue |  |  |

## 4. Binary trees

| | Search Tree | Balanced Search Tree | [Max] Heaps |
|---|---|---|---|
| Finding min value | | | |
| Finding max value | | | |
| Finding a target | | | |
| Print all elements | | | |
| Insert | | | |
| Remove | | | |

## 5. Searching algorithms
Linear/Sequential Search:
Binary Search:

## 6. Sorting Algorithms
Selection Sort:
Insertion Sort:
Bubble Sort:
Merge Sort:
Quick Sort:
Heap Sort:
Counting Sort:
Radix Sort: