

- `Arrays.sort(arr, (a,b) -> b-a); // descening`

#### 4. Stack // Collection

1. Definition -> `Stack st = new Stack<>();`
2. insert -> `T push(t); // TC: O(1)`
3. size -> `int size(); // TC: O(1)`
4. look up for head element -> `T peek(); // TC: O(1)`
5. remove head element -> `T pop(); // TC: O(1)`
6. check for Empty -> `boolean isEmpty(); // TC: O(1)`

#### 5. Queue // Collection

1. Definition -> `Queue queue = new LinkedList<>();`
2. insert -> `boolean add(t); // TC: O(1)`
3. size -> `int size(); // TC: O(1)`
4. look up for head element -> `T peek(); // TC: O(1)`
5. remove head element -> `T poll(); // TC: O(1)`
6. check for Empty -> `boolean isEmpty(); // TC: O(1)`
7. points to remember :
  - queue poll vs stack pop
  - queue add vs stack push
  - we can define queue via `LinkedList`, `PriorityQueue` based on use case

#### 6. String / StringBuilder

1. Definition -> `String str = new String();`
2. size -> `int length(); // TC: O(1)`
3. convert to char Array -> `toCharArray(); // TC: O(n)`
4. value for specific index -> `charAt(int index); // TC: O(1)`
5. substring from string -> `substring(a,b) // a : inclusive, b: Exclusive, TC: O(n)`
6. transform to Lowercase -> `toLowerCase(); // TC: O(n)`
7. transform to UpperCase -> `toUpperCase(); // TC: O(n)`
8. replace all characters in string -> `replaceAll(from, to) // TC: O(n)`
9. Some useful Character properties
  - `Character.isLetter();`
  - `Character.isAlphabetic();`
  - `Character.isUpperCase();`
  - `Character.isLowerCase();`
  - `Character.isDigit();`
10. Concatenation
  - `T str1 + str2`
  - `StringBuilder ->`
    - `new StringBuilder() / new StringBuilder(int)`
    - `append("adding string") // better way to do`
    - `toString() // converting back to string`

#### 7. HashSet // Collection

1. Definition -> `Set set = new HashSet<>();`
2. insert -> `boolean add(t); // TC: O(1)`