

Java sheet sheet

Array

- sort: `Arrays.sort(array)`
- sort with comparator:
 - return 1 means $l1 > l2$

```
Comparator<int[]> selfDefineComparator = new Comparator<int[]>() {  
    public int compare(int[] l1, int[] l2) {  
        if(l1[0]==l2[0]){  
            return l1[1]>l2[1]?1:-1;  
        }else{  
            return l1[0]>l2[0]?1:-1;  
        }  
    }  
};  
Arrays.sort(list, selfDefineComparator);
```

- `arrays.clone()`

String

- `result.toLowerCase()`
- `result.charAt(i)`
- Start include, end exclude. `result.substring(start, end)`
- `StringBuilder`
 - constructor: `StringBuilder builder = new StringBuilder()`
 - `builder.append('a')`
 - `builder.toString()`
- `word.toCharArray() <=> String word = new String(wordArray)`

Integer

- `Integer.toString(i) <=> Integer.parseInt(string)`
- `Integer.MAX_VALUE`
-

HashMap

- `containsKey(Object key)`
- `containsValue(Object key)`
- `get(Object key)`
- `size()`
- `put(K key, V value)`
- `remove(Object key)`
- List to array: `result.toArray(new String[result.size()])`

HashSet

- `set.iterator().next();`
- `set.add(num)`
- `set.remove(num)`
-

ArrayList

- `concat array1.addAll(array2);`
- `copy List<Integer> newList = new ArrayList<>(oldList);`

LinkedList

- `add(E e)`
- `add(int index, E element)`
- `addAll(Collection<> c)`
- `addFirst(E e)`
- `addLast(E e)`
-

Stack

- `stack.empty()`
- `stack.peek()`
- `stack.pop()`
- `stack.push()`

Interface Queue

- FIFO: LinkedList
 - `Queue<Integer> fifo = new LinkedList<>()`
 - add to end `fifo.offer(e)`
 - retrieve and remove the head, return null if empty `fifo.poll()`
 - `fifo.peek()`

Priority Queue

- `PriorityQueue<Map.Entry<Integer, Integer>> pq = new PriorityQueue<>((a,b)->(b.getValue()-a.getValue()));`
- `pq.offer(e)`
- `pq.poll()`
- `pq.peek()`

Collection

- `collections.sort(list)`

Random

- `Random rand = new Random()`

- `rand.nextInt(bount) [0,bound)`
- `rand.nextDouble() [0,1)`

easy error

- Variable not defined
- string double quote
- duplicate define
- corner case
- bonary search overflow