

Java Stuff

Outline

- Scanner
- ArrayList
- Sets
- PriorityQueue
- Queue
- Stack (lol)
- Comparable Interface
- ArrayDeque

Scanner

Allows for reading in from standard input or files

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Allows for reading in from **standard input** or files

Scanner

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Highlights:

Scanner

Allows for reading in from **standard input** or files

Highlights:

- `next()`
- `nextInt()`
- `nextDouble()`
- `nextLong()`

ArrayList

Unbounded array

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Unbounded array

Can be iterated over

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If removal is frequent, ArrayList should be avoided!

ArrayList

Unbounded array

Can be iterated over

If removal is frequent, ArrayList should be avoided!

Highlights

ArrayList

Unbounded array

Can be iterated over

If removal is frequent, ArrayList should be avoided!

Highlights

- `add()`
- `remove()`
- `size()`
- `isEmpty()`

TreeSet

Sorted Set

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Needs to have comparable objects

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Objects with the same value can only occur once

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Highlights

TreeSet

Sorted Set

Needs to have comparable objects

Objects with the same value can only occur once

Highlights

- add()
- remove()
- contains()
- size()
- isEmpty()
- lower()
- upper()
- ceiling()
- floor()
- Can also be iterated over

HashSet

Theoretically better than TreeSet

HashSet

Theoretically better than TreeSet

In practice it's not...

PriorityQueue

Pretty good heap based queue

PriorityQueue

Pretty good heap based queue

Highlights

PriorityQueue

Pretty good heap based queue

Highlights

- `add()`
- `poll()`
- `size()`
- `isEmpty()`

Queue

Standard FIFO data structure

Queue

Standard FIFO data structure

Highlights

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Standard FIFO data structure

Highlights

- `add()`
- `poll()`
- `size()`
- `isEmpty()`

Queue

Standard FIFO data structure

Highlights

- `add()`
- `poll()`
- `size()`
- `isEmpty()`

If an array can be used it should

Stack

Stack

NEVER USE JAVA'S STACK

Stack

NEVER USE JAVA'S STACK

Use ArrayDeque instead (or an array if possible)

Comparable Interface

Example

ArrayDeque

Double Ended Queue

ArrayDeque

Double Ended Queue

Highlights

ArrayDeque

Double Ended Queue

Highlights

- peekFirst()
- peekLast()
- pollFirst()
- pollLast()
- size()
- isEmpty()
- addFirst()
- addLast()