Memory management

Explicit: C/C++ (ptrs)
- alloc: malloc/new
- dealloc: free/delete

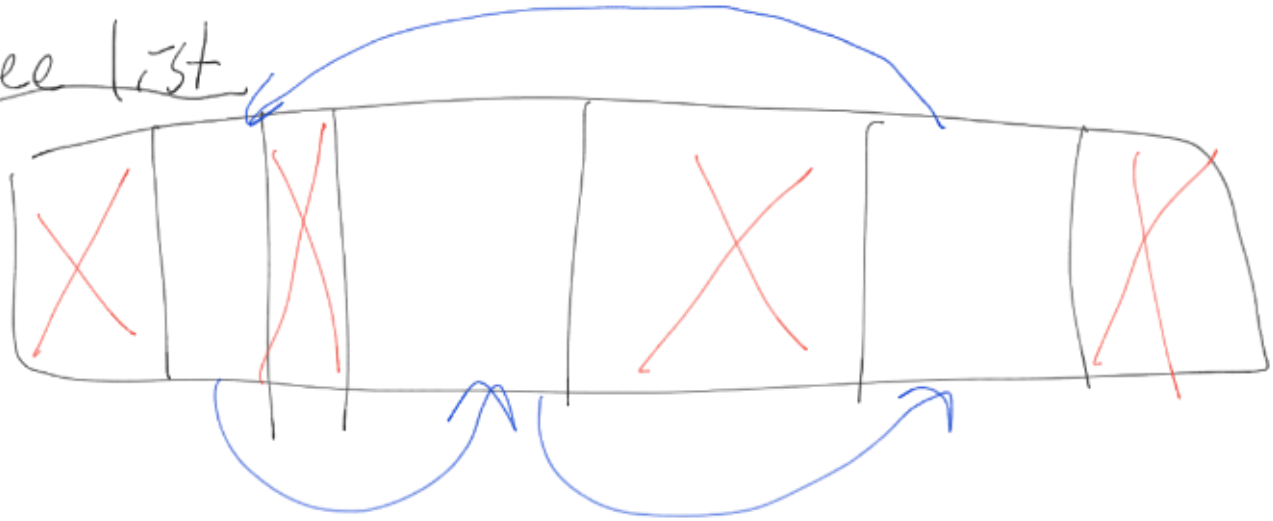
Auto: Java (No ptrs)
- alloc: new
- dealloc: none

Allocation

Bump ptr
- fast
- easy
- external fragmentation
- new blocks bumped post allocation


```
p1 = malloc(3)
p2 = malloc(1)
p3 = malloc(4)
free(p2)
p4 = malloc(6)
free(p3)
p5 = malloc(2)
free(p1)
free(p4)
free(p5)
```

Free list



- less wasted space
- slow
- free chunks are diff sizes

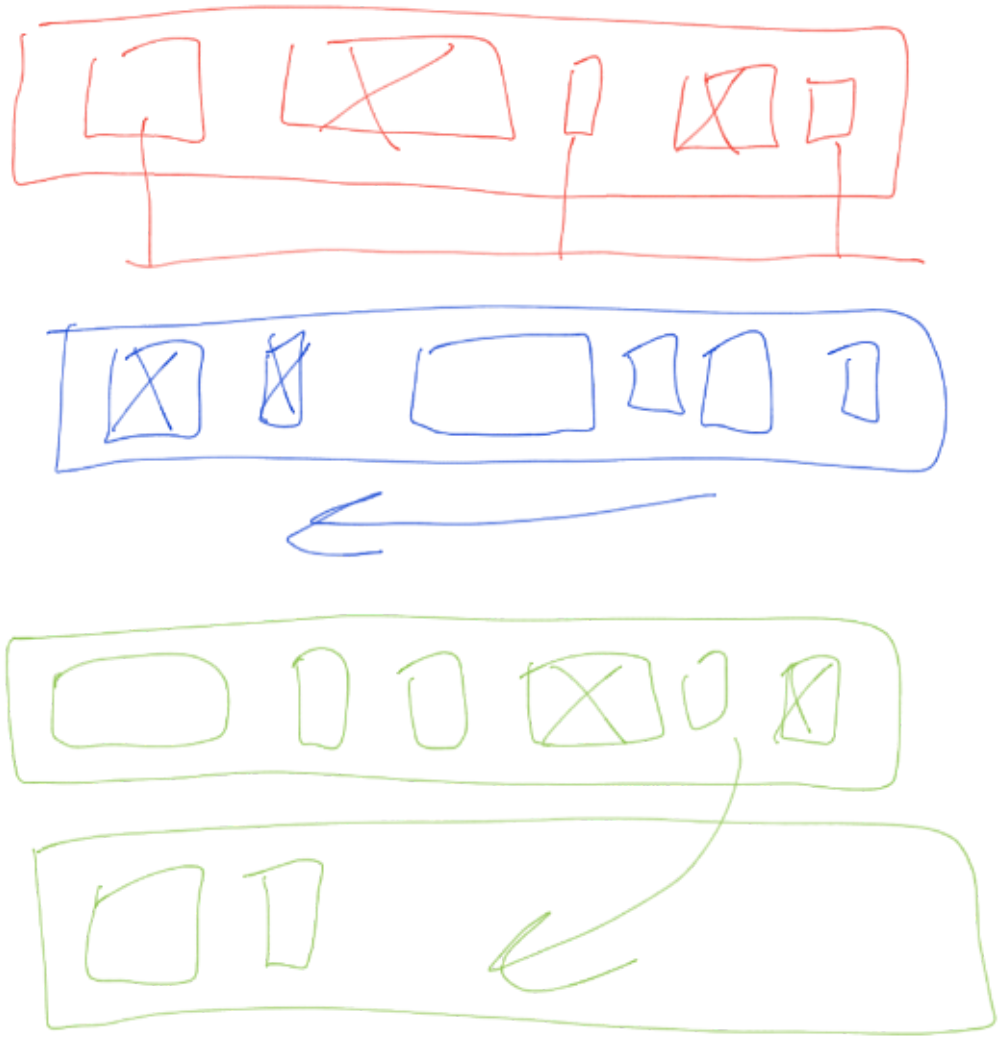
Identification

Tracing
- traces ptrs to source
- if not referenced, call it garbage

Ref count
- count # of times obj was ref'd
- any thing !ref = garbage

Reclamation
- sweep to free → Mark Sweep
- compact → Mark compact

- evacuate → semi space



MS
- fast collection
- space efficient
- slow alloc

MC
- fast alloc
- space efficient
- expensive multi pass collection

SS
- fast alloc

- Slow garbage collection
- wasted space

Last modified: Dec 12, 2018