

15-213

“The course that gives CMU its Zip!”

Memory Management II: Dynamic Storage Allocation Mar 6, 2000

Topics

- Segregated free lists
 - Buddy system
- Garbage collection
 - Mark and Sweep
 - Copying
 - Reference counting

Basic allocator mechanisms

Sequential fits (implicit or explicit single free list)

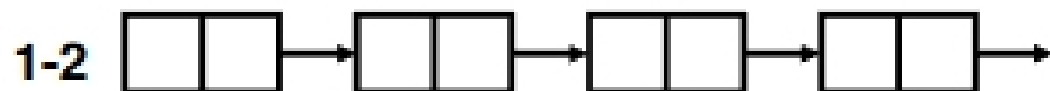
- best fit, first fit, or next fit placement
- various splitting and coalescing options
 - splitting thresholds
 - immediate or deferred coalescing

Segregated free lists

- simple segregated storage -- separate heap for each size class
- segregated fits -- separate linked list for each size class
 - buddy systems

Segregate

Each size “class” has its own collection of blocks



- Often have separate collection for every small size (2,3,4,...)
- For larger sizes typically have a collection for each power of 2