Processes, Address Spaces, and Memory Management

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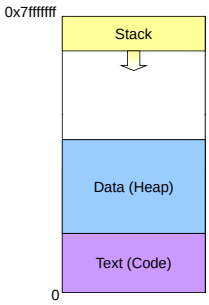
Process

A running program and its associated data

Process's Address Space

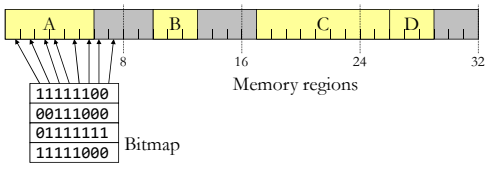


Operating Systems

- Manage Resources
- Abstract Details

Memory Management

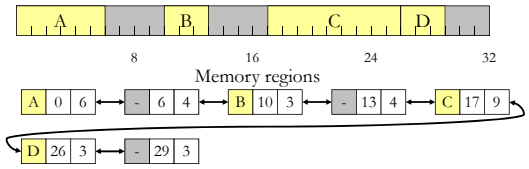
Bitmaps



Pages

- Break memory up into fixed sized chunks
- Easier to manage
- Need less entries in bitmap

Linked Lists



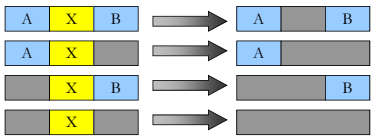
Allocation Strategies

- First fit
  - Find the first free block, starting from the beginning, that can accommodate the request
- Next fit
  - Find the first free block, starting where the last search left off, that can accommodate the request
- Best fit
  - Find the free block that is closest in size to the request

Allocation Strategies Continued

- Worst fit
  - Find the free block with the most left over after fulfilling the allocation request
- Quick fit
  - Keep several lists of free blocks of common sizes, allocate from the list that nearest matches the request

Reclaiming Freed Memory



malloc() and free()