Lecture 17: `malloc()` Demo

CSE 29: Systems Programming and Software Tools

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Demo

Heap size = 400 bytes

mmap()

malloc(352)

store size of blk, if I'm alloc'd
3 least sig. bits are 0 ⇒ multiples of 8 ⇒ 1000 (binary)

PSET 4 ⇒ 16-byte

LSB: 0 = free
      1 = alloc'd / busy

- Assume:
  - 8-byte headers
  - 8-byte aligned addresses

int# a = malloc(40);

free header

| 400 |

alloc'd header | 401 |

payload

| 48 | | | | | 352 | . . . . |

| 40 | (49)

40 payload
+ 8 header
+ 1 alloc'd
──────
49

□ = 8 bytes

free(a);

| 48 | | | | | 352 | . . . |