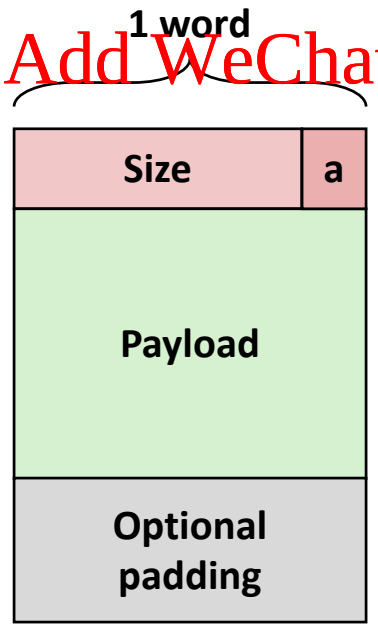
Method 1: Implicit List

- **For each block we need both size and allocation status**
  - Could store this information in two words: wasteful!
- **Standard trick**
  - If blocks are aligned, some low-order address bits are always 0
  - Instead of storing an always-0 bit, use it as a allocated/free flag
  - When reading size word, must mask out this bit

Format of allocated and free blocks



a = 1: Allocated block
a = 0: Free block

Size: block size

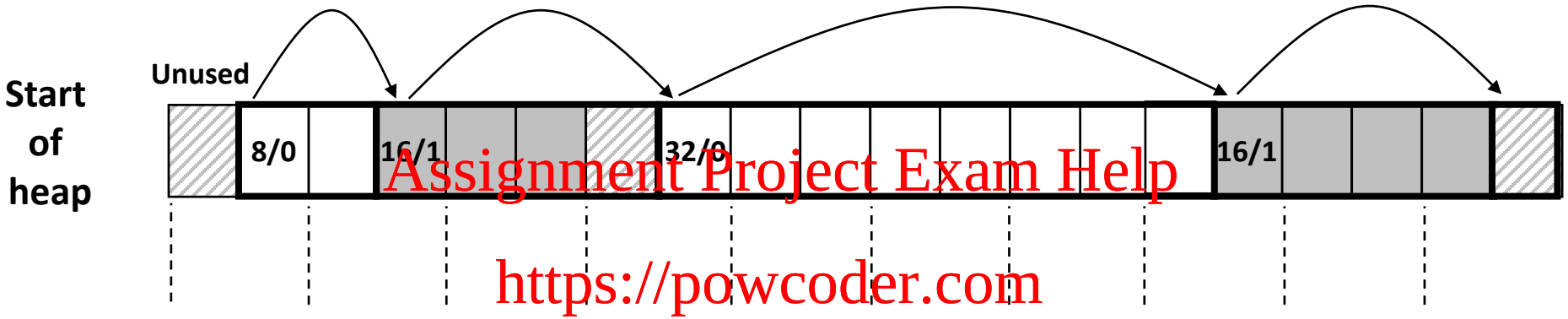
Payload: application data (allocated blocks only)

Header Example

- **Size = 16, allocation status = 1**
  - 16 = 00010000

- **Need to "zero out" the LSB to get the size**
- **-2 = 11111110**
  - Least significant bit is 0
- **Bitwise AND with -2 sets LSB to 0**

Detailed Implicit Free List Example



Double-word aligned

Allocated blocks: shaded
Free blocks: unshaded
Headers: labeled with size in bytes/allocated bit