

CPSC 213 Lab 4

Structs & Dynamic Allocation

Slides available at <https://randyzhu.com/cpsc213>

Randy Zhu

Course Deadlines

- A4 due this Friday, Feb 6th
- Quiz 2 next week
- Good luck with other midterms!

Struct sizeof and offsetof

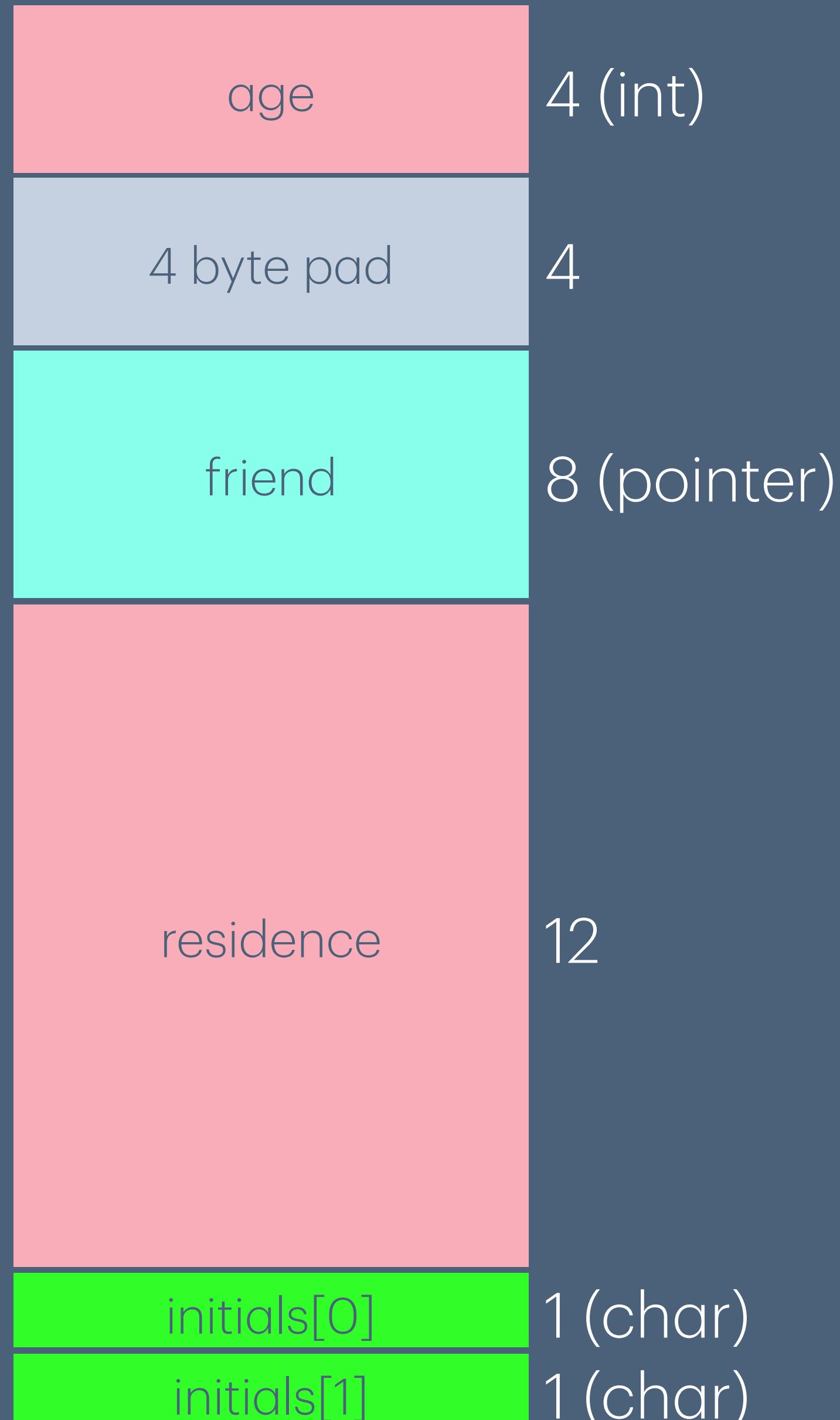
Q1

struct Address:

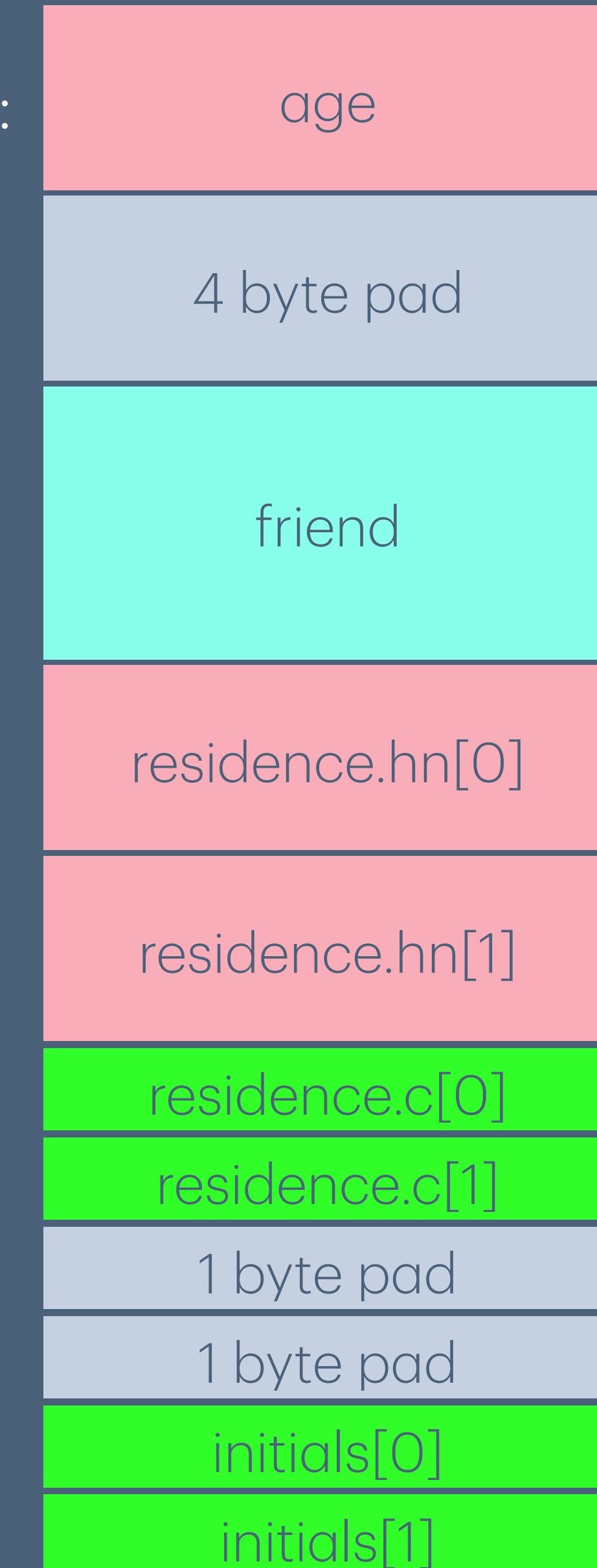
houseNumber[0]	4 (int)
houseNumber[1]	4 (int)
country[0]	1 (char)
country[1]	1 (char)
1 byte pad	1 (char)
1 byte pad	1 (char)

Struct sizeof and offsetof

struct Person

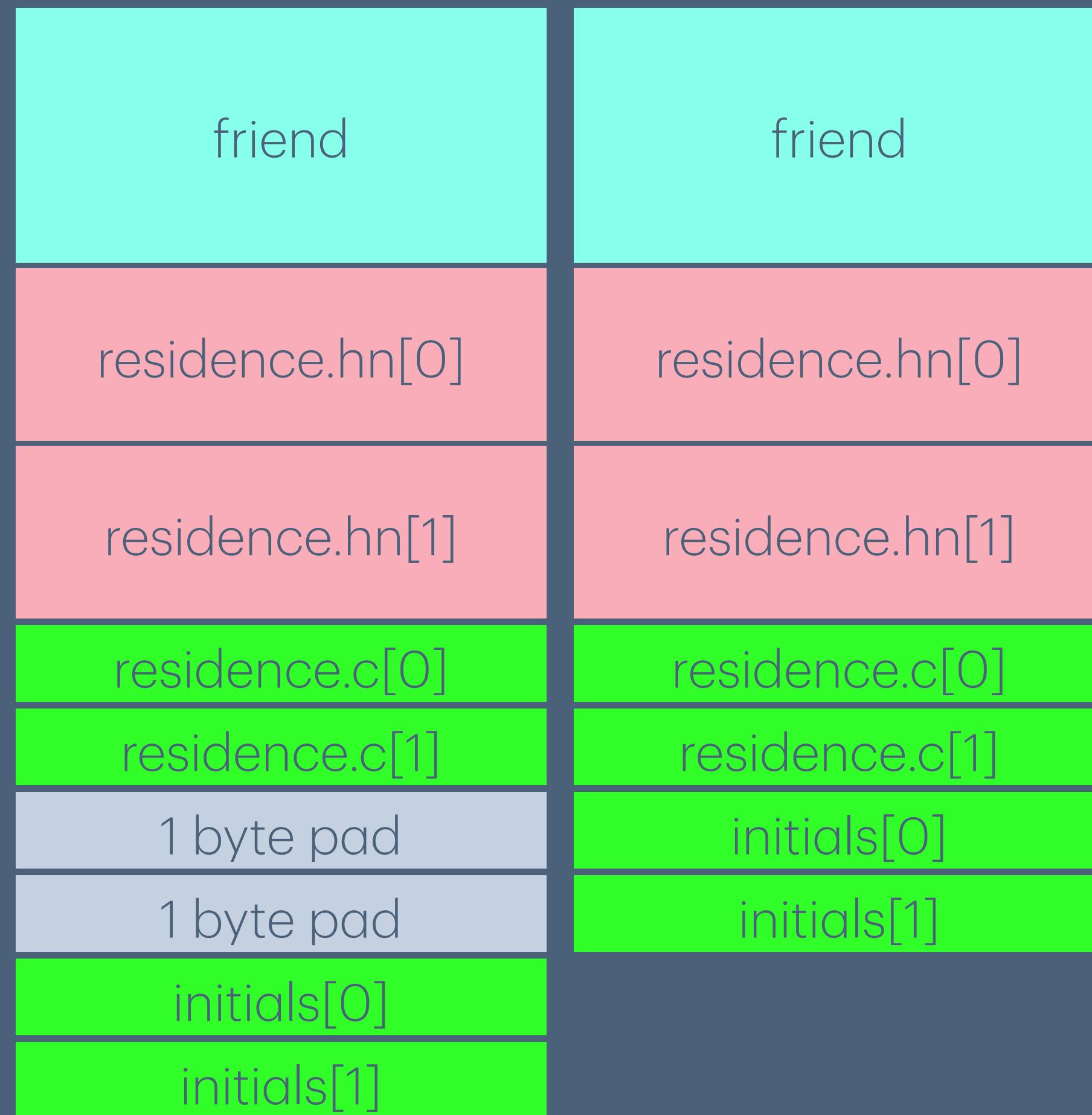


transparent:



Struct sizeof and offsetof

Why can't you be clever?



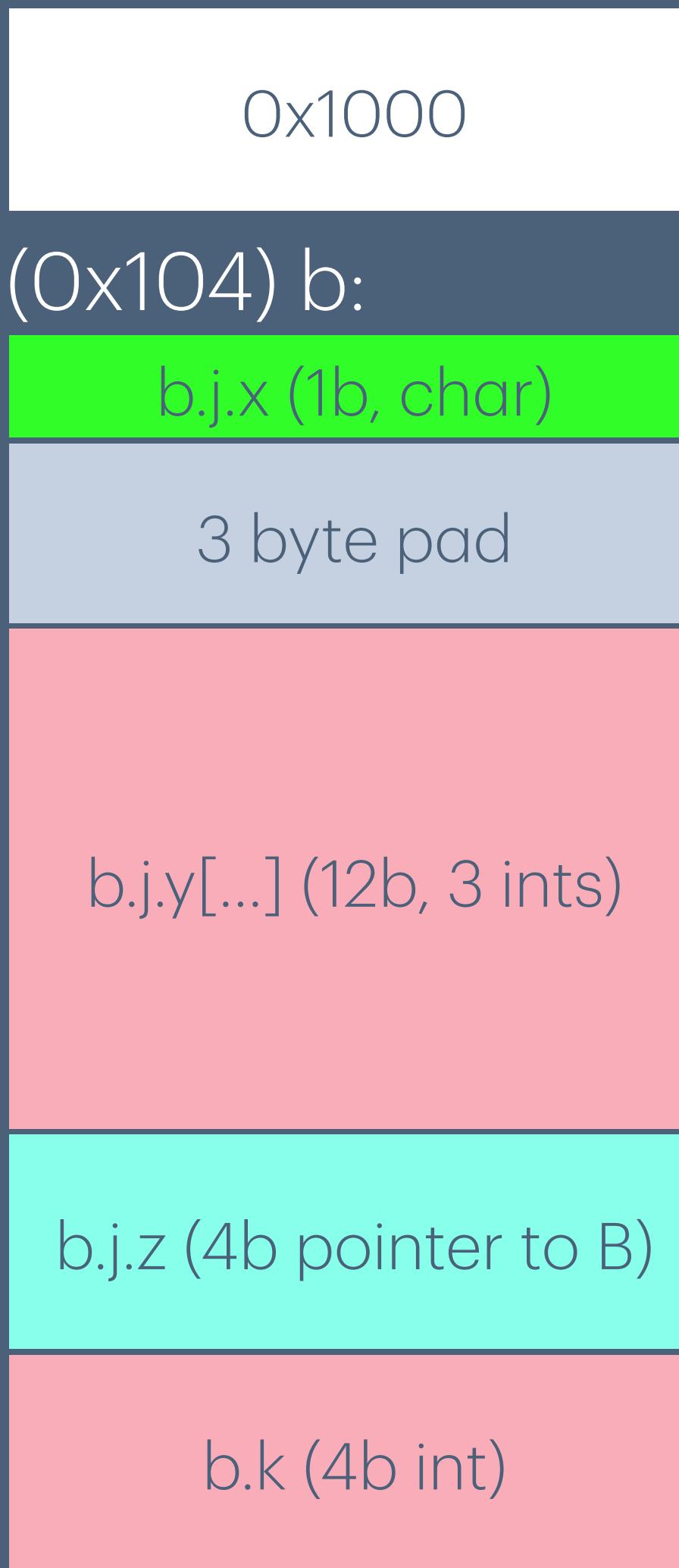
```
void f(struct Address *a):  
    unsigned char* c = ((unsigned char*) a) + 10;  
  
    c[0] = 3;  
    c[1] = 4;  
  
int main():  
    struct Person p;  
  
    f(&p.residence);
```

Lab Code

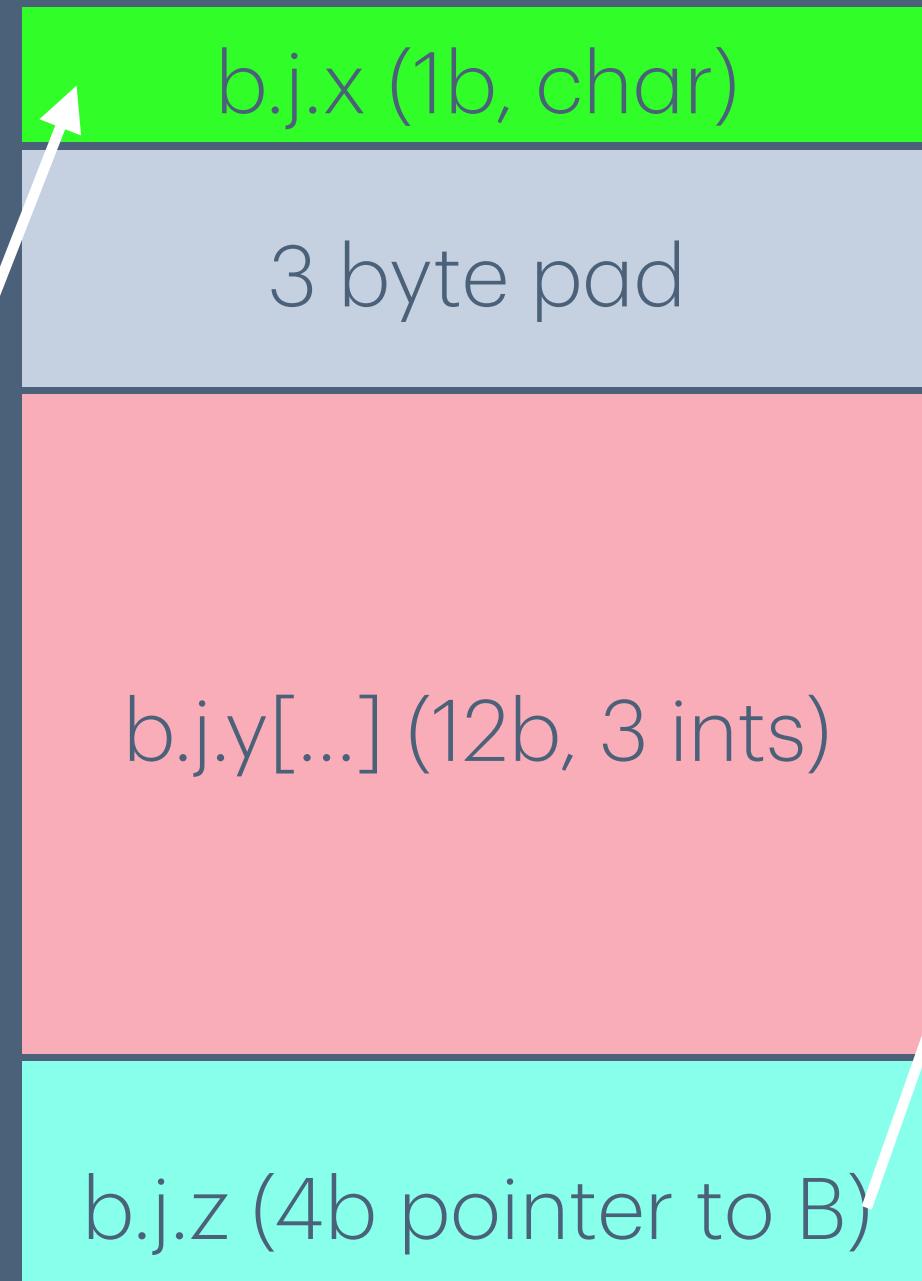
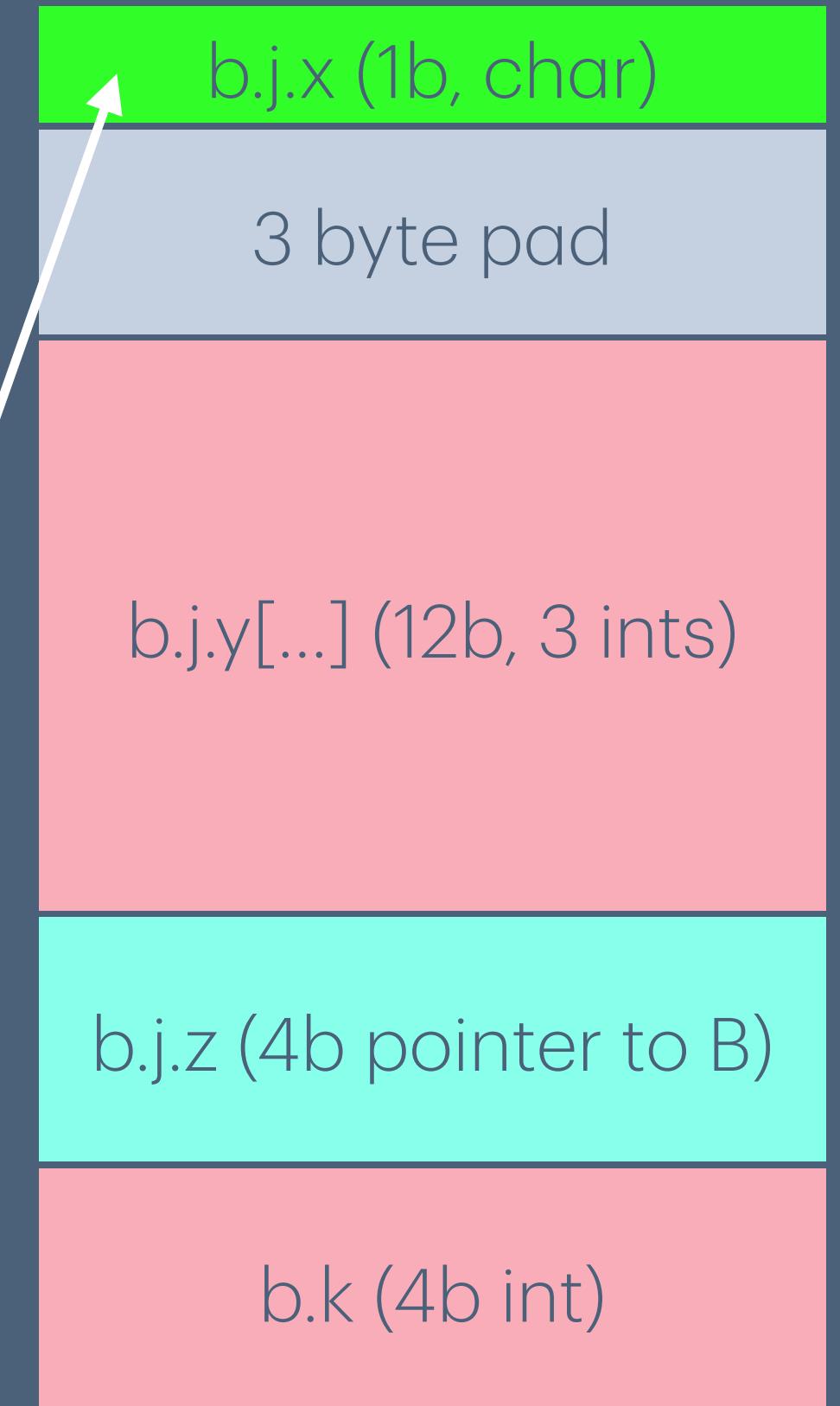
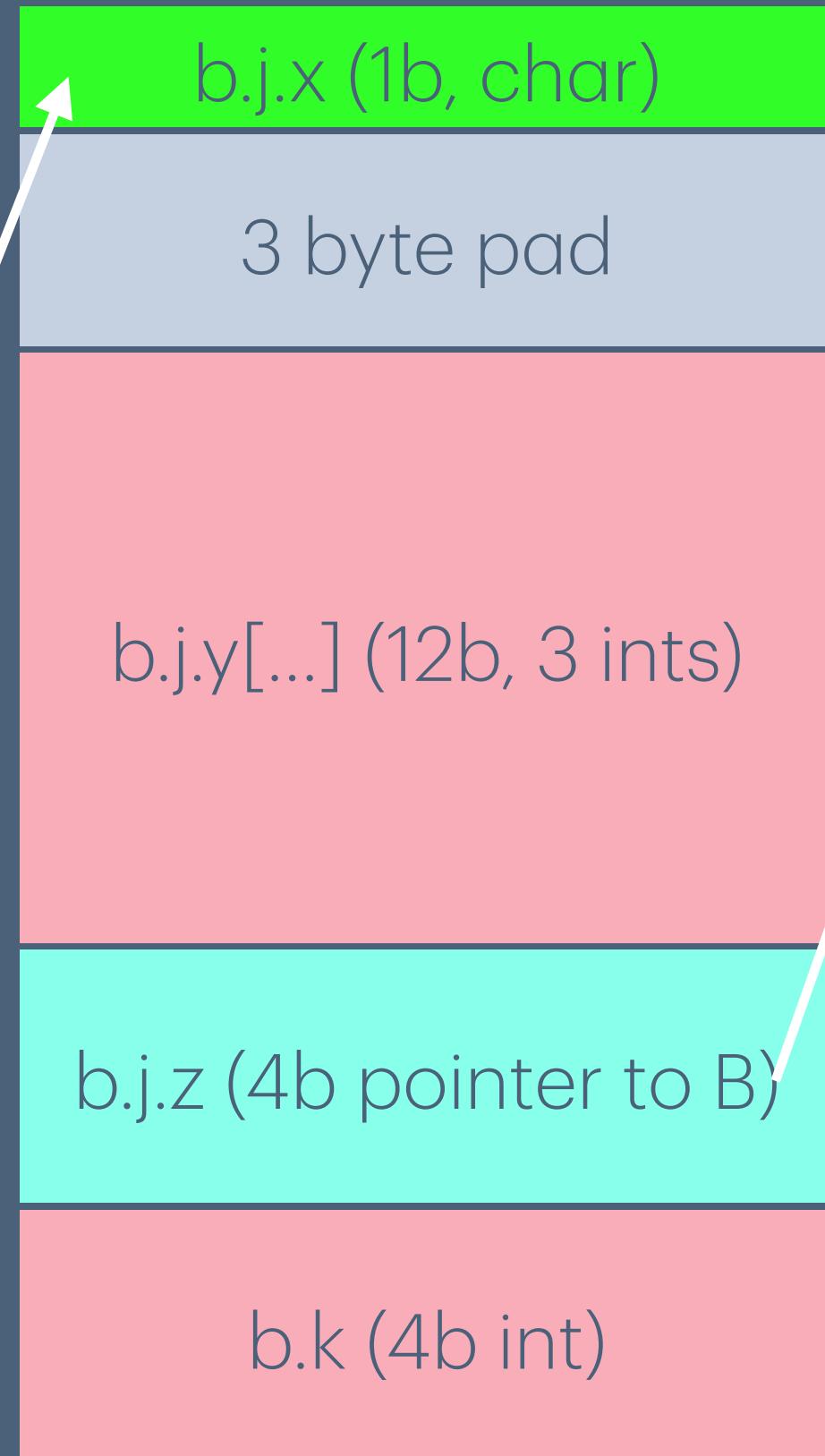
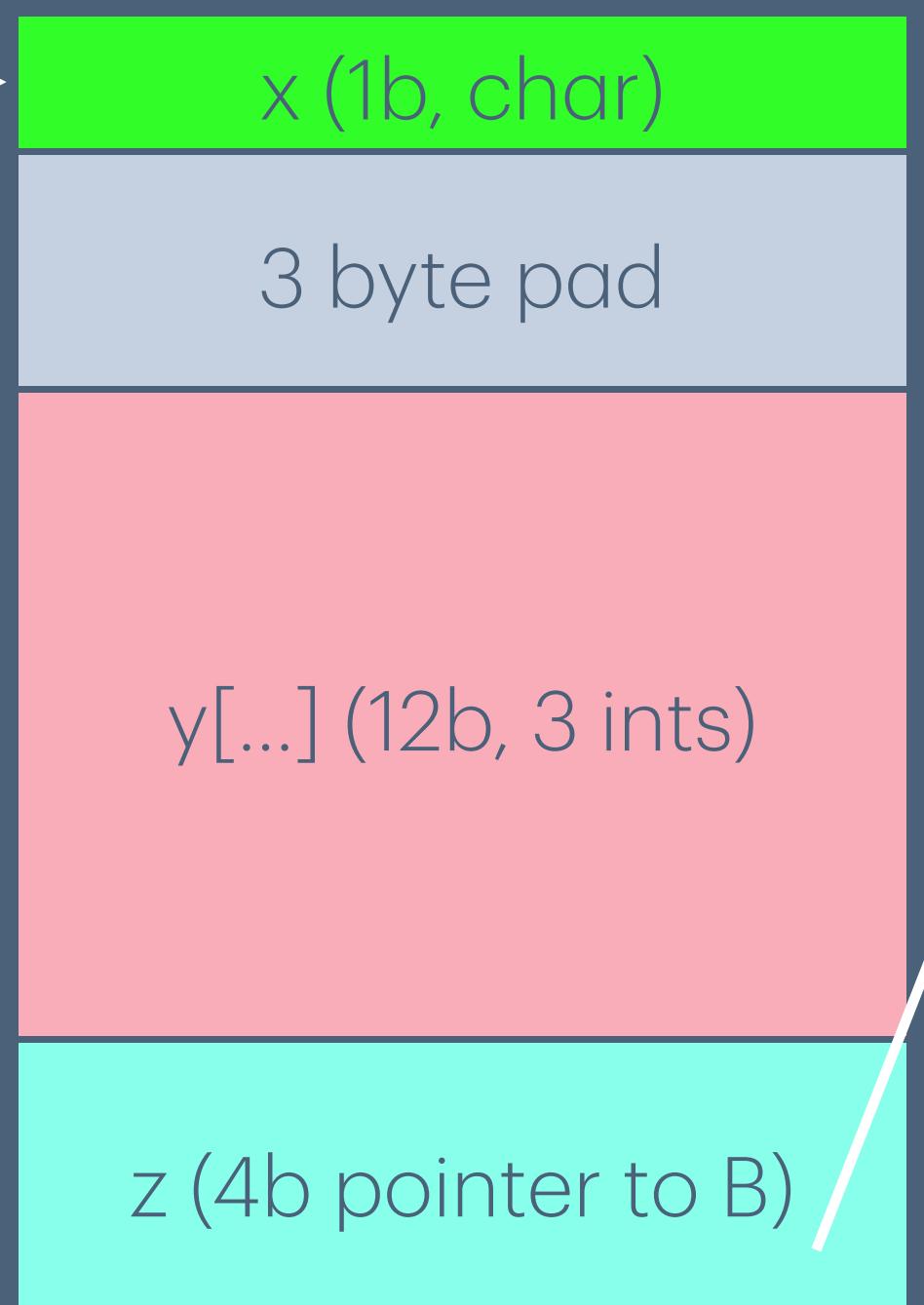
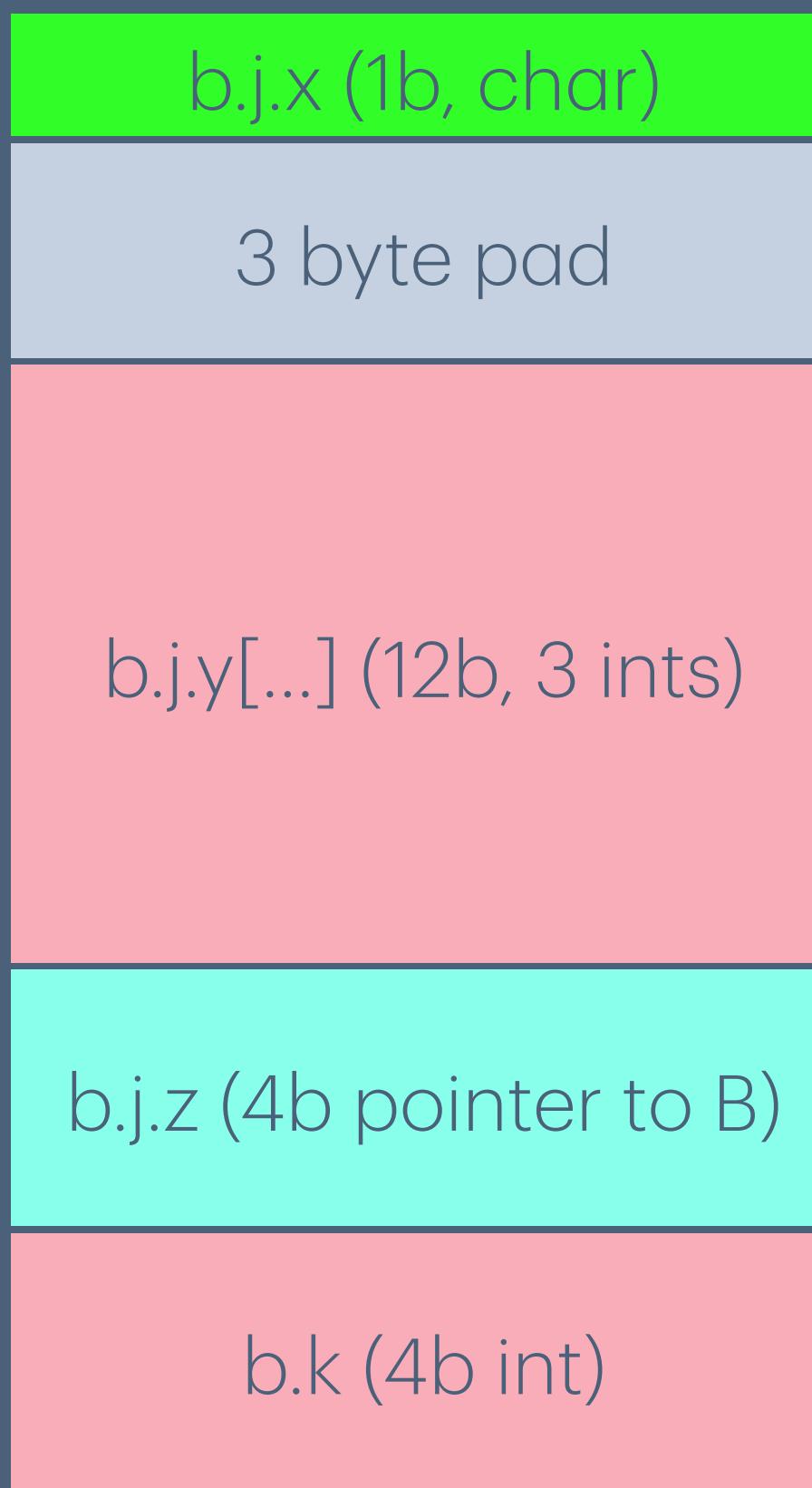
NSJD

Memory Reads

(0x100) a:

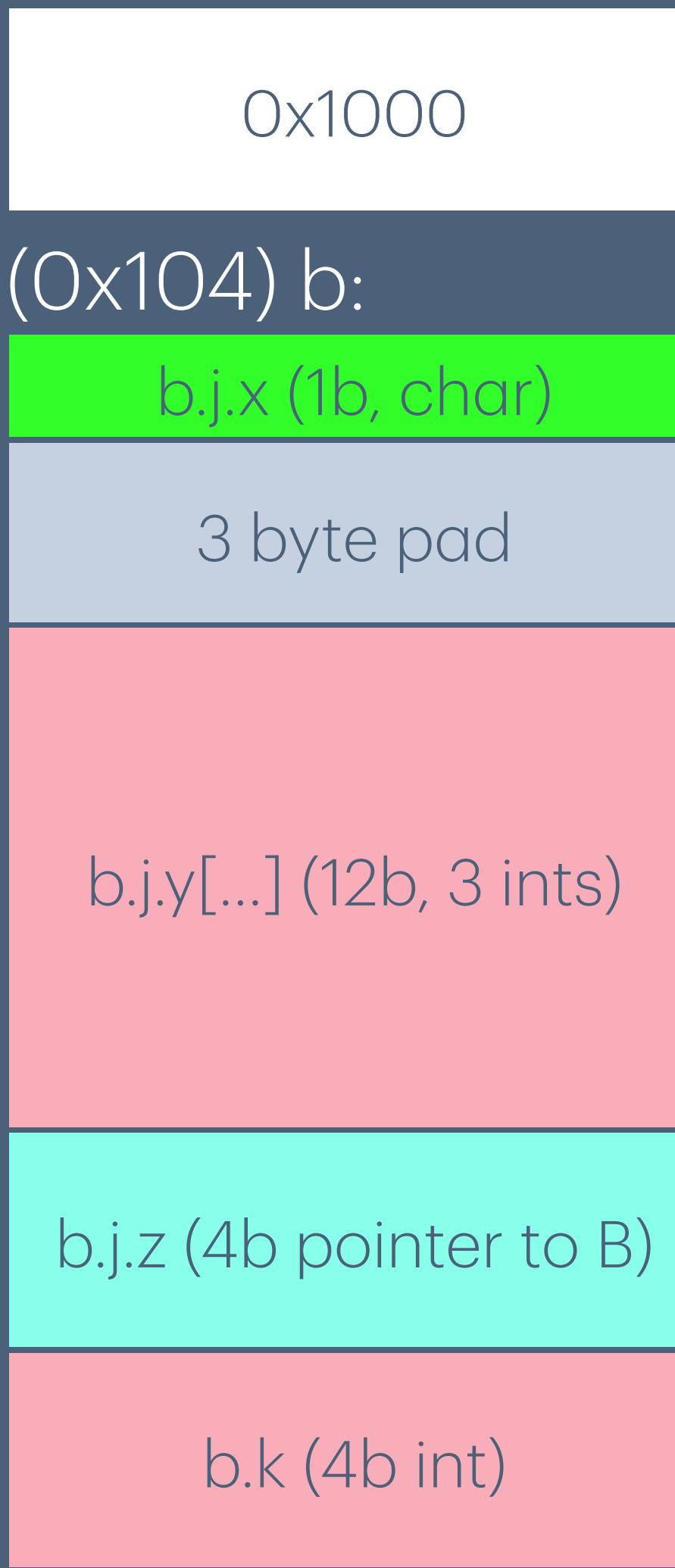


(0x104) b:



Memory Reads

(0x100) a:



address of b.k (known at compile time, 0x114)

