CPSC 213 Lab 4

Structs & Dynamic Allocation

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

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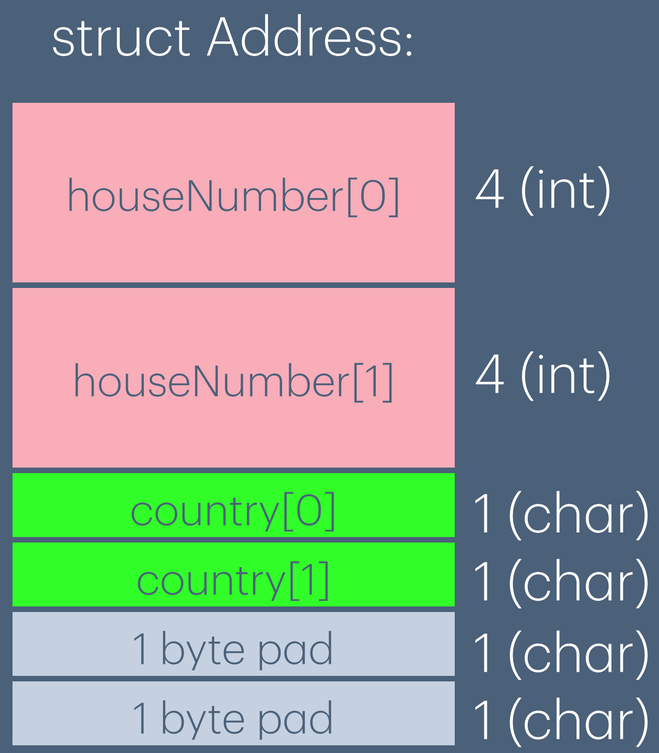
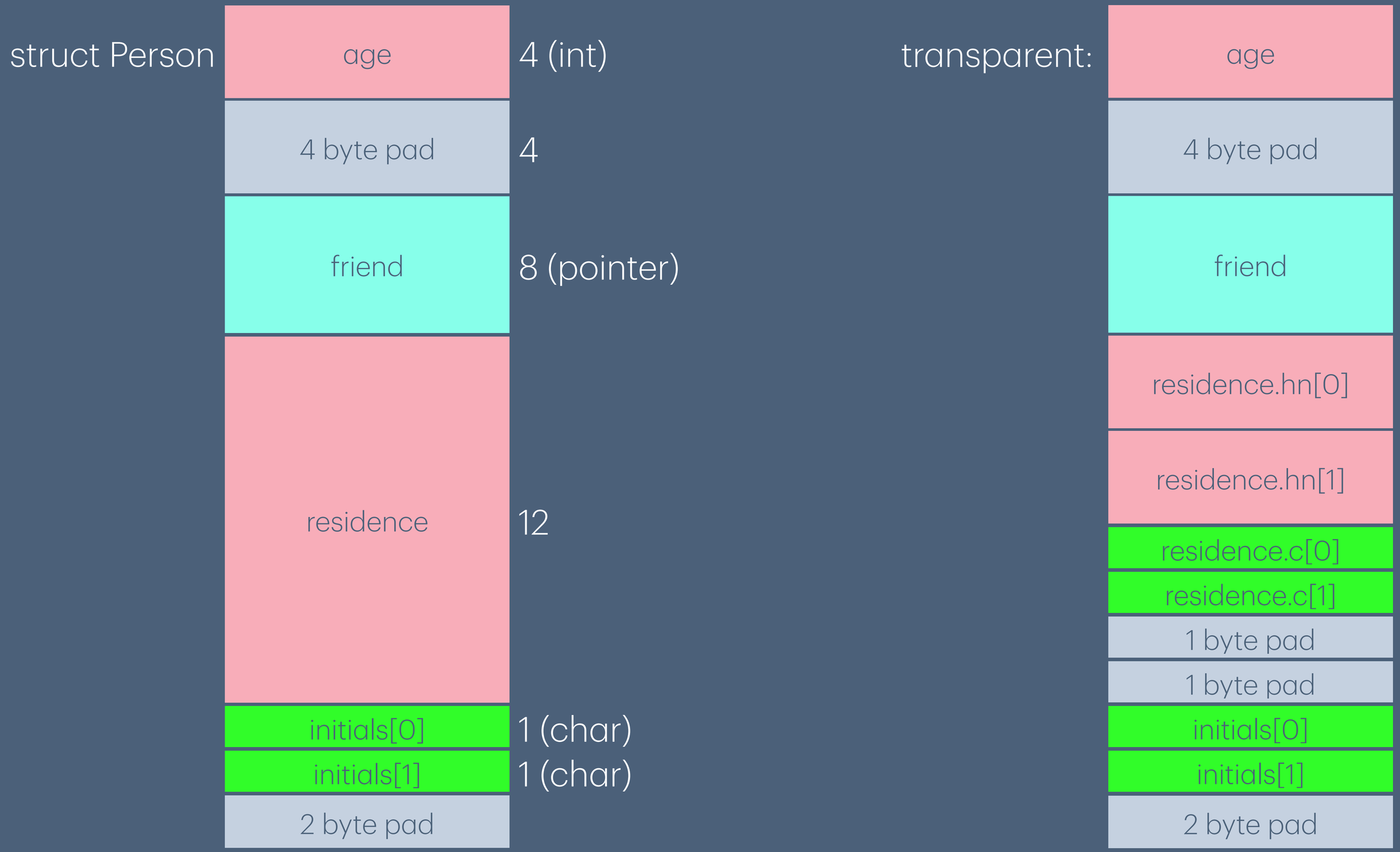
Course Deadlines

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

Struct sizeof and offsetof

Q1




struct Person
age
4 (int)
4 byte pad
4
friend
8 (pointer)
residence
12
initials[0]
1 (char)
initials[1]
1 (char)
2 byte pad
transparent:
age
4 byte pad
friend
residence.hn[0]
residence.hn[1]
residence.c[0]
residence.c[1]
1 byte pad
1 byte pad
initials[0]
initials[1]
2 byte pad

Struct sizeof and offsetof

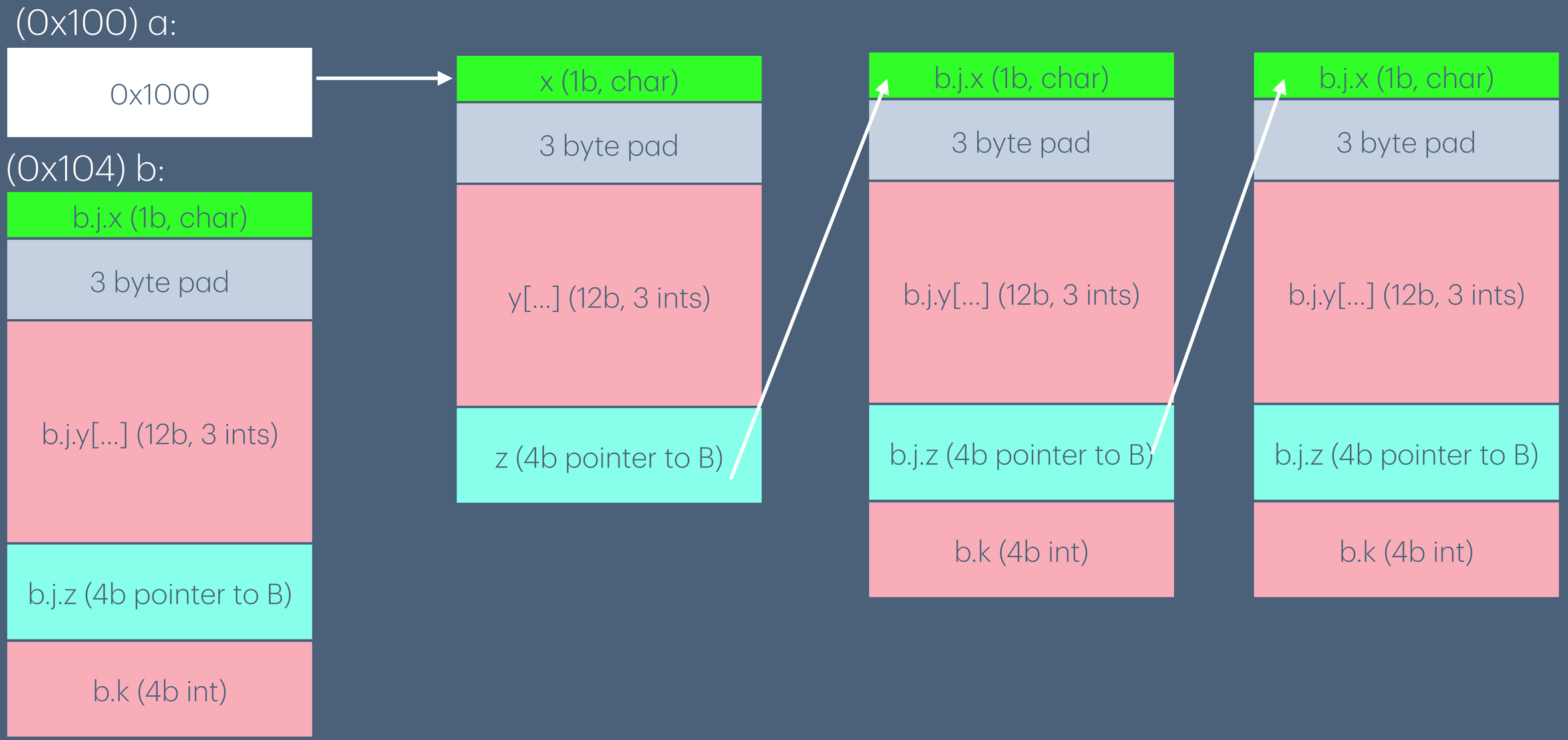
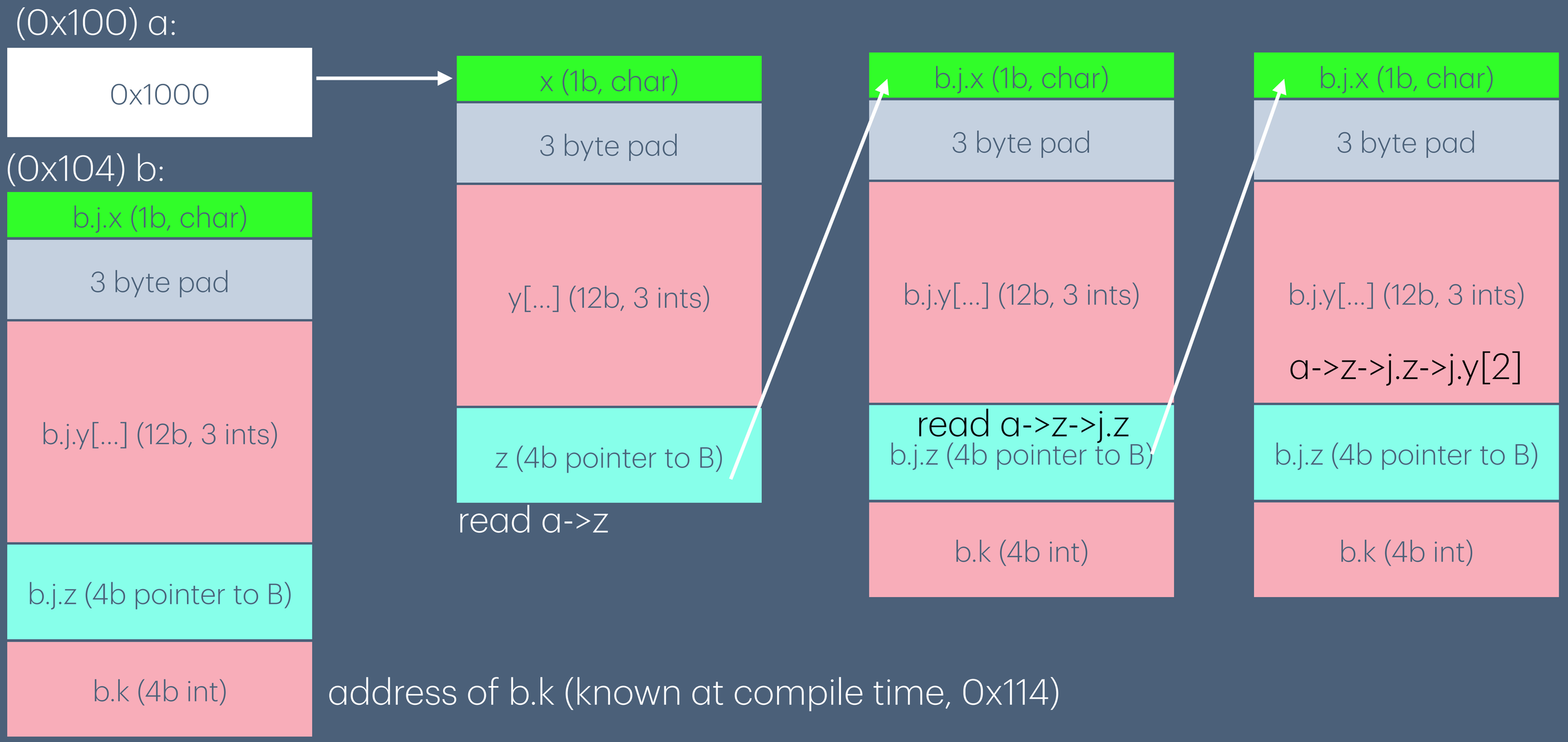
Why can't you be clever?

```
struct Person p;

struct Address a;

void add_data(struct Address *a):

     ((short*)a)[5] = 10;

int main():

    f(&a)

    f(&p.residence);
```

Lab Code

NSJD

Memory Reads: `b.k = a→z→j.z→j.y[2]`



Memory Reads: `b.k = a→z→j.z→j.y[2]`