CSE 374: Programming Concepts and Tools

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Lecture 18: pointers, casts, hw5 tips

Administrivia

- Partner survey is out, please fill out ***EXACTLY ONCE*** per pair (due midnight tonight)
- Homework 5 is due midnight tomorrow
  - Come to office hours, we can help
  - I'll have extra office hours today at 3:30pm to help

types in C

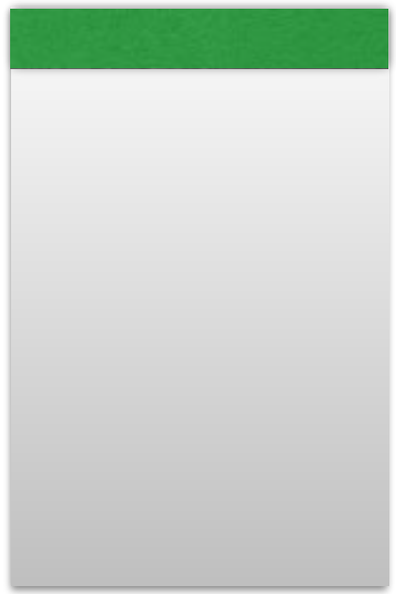
- At its core, a type is nothing more than how to interpret some number of bytes
  - an int is just a signed number interpretation
  - a pointer is just a memory address interpretation
  - a struct is just a box which holds other types

example

```
typedef struct point {
    int x;
    int y;
} point;
```

```
point* a = (point*)malloc(sizeof(point)+512);
//a is still a point
//with some empty space after
```

```
a->x = 5;
a->y = 3;
```



malloc review

```
point* a = (point*)malloc(sizeof(point));
point* b = (point*)malloc(sizeof(point));
```

What can I say for sure about `a` and `b`?

What can I say if after I make sure they're not NULL?

structs

where should you *declare* them?

where should you *define* them?

Questions?

List Example

- Emphasizing proper abstraction