ECE 220 Computer Systems & Programming

Pointers

What is Pointer?

Pointer

- Address of a variable in memory
- Allows us to <u>indirectly</u> access variables (in other words, we can talk about its **address** rather than its **value**)

Pointers in C

Declaring Pointer Variables

```
int *ptr;
char *cptr;
double *dptr;
```

& - **address operator:** **&x returns the address of variable x**

* - **indirection (dereference) operator:** ***ptr returns the value pointed to by ptr**

```
int object;
int *ptr;
object = 4;
ptr = &object;
*ptr = *ptr + 1;
```

More on Pointers

NULL pointer - a pointer that points to nothing

```
int *ptr;
ptr = NULL;
```

Syntax for Pointer operators

1. Declaring a pointer

```
type *var_ptr;
type* var_ptr;
```

2. Creating a pointer

```
&var
```

3. Dereferencing

```
*var_ptr
**var_pptr
```

Pointer Fun on YouTube:
https://www.youtube.com/watch?v=i49_SNt4yfk

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