Week 2

* C functions
  + C is a primitive ass language!
  + There are no classes, and therefore, there are no functions
  + C does not have optional argument values, C++ does
* C arrays
  + Arrays don’t know how big they are
* C types:
  + Adding a \* to a type declares that variable as a pointer
  + void\* is literally just a pointer
  + A const char\* is a string constant. A string constant holds the address of the string. The compiler places the string into memory and simply saves the address to save memory when referencing that string later
* Referencing pointers
  + If you have an int
    - &[var] gets you the pointer value
    - [var] gets you the int value
  + If you have an int pointer
    - &[var] gets you the pointer value
    - [var] gets you the pointer value
    - \*[var] gets you the int value
  + Setting
    - \*[int] = 10; sets 10 at whatever address that pointer points to
    - When incrementing/decrementing a pointer, you need to surround it with parentheses like this: (\*[ptr])++, as it tries to point after/before the pointer instead of changing the value stored at the pointer value address
* Counting
  + Converting between hex and binary is easy when you remember the 4 bit rule!

|  |  |  |
| --- | --- | --- |
| 0000 | 0 | 0 |
| 0001 | 1 | 1 |
| 0010 | 2 | 2 |
| 0011 | 3 | 3 |
| 0100 | 4 | 4 |
| 0101 | 5 | 5 |
| 0110 | 6 | 6 |
| 0111 | 7 | 7 |
| 1000 | 8 | 8 |
| 1001 | 9 | 9 |
| 1010 | A | 10 |
| 1011 | B | 11 |
| 1100 | C | 12 |
| 1101 | D | 13 |
| 1110 | E | 14 |
| 1111 | F | 15 |

* + - See!
* Pausing console
  + char ch;  
    scanf\_s(" %c", &ch);