Pointers: The dereference operator and the address of operators (* and &)

- **The address of operator (&)**
    - Returns the address in memory of a variable

        ```
        char c = 'Q';
        int main(){
               int x = 12;
               float f = 3.145f;
               printf("%p", &x);
               printf("%p", &f);
               printf("%p", &c);
        }
        ```
    - Virtual Memory

	x0000
	x0004
	x0008
3 (global x)	x000c
Q (global c)	x0010
	x0014
	...
	x11a0
	x11a4
	x11a8
	x11ac
	x11b0
	x11b4
3.145f (local f)	x11b8
12 (local x)	x11bc
	x11c0
	x11c4

- **The dereference operator (*)**
  - Grab what is at the given memory location

  i.e.

  ```
  char c = 'Q';
   int main(){
          int x = 12;
          float f = 3.145f;
          printf("%d", *(&x));
          printf("%e", *(&f));
          printf("%c", *(&c));
   }
  ```

  - Virtual Memory

	x0000
	x0004
	x0008
3 (global x)	x000c
Q (global c)	x0010
	x0014
	...
	x11a0
	x11a4
	x11a8
	x11ac
	x11b0
	x11b4
3.145f (local f)	x11b8
12 (local x)	x11bc
	x11c0
	x11c4