Pointers

image: http://takethatleap.files.wordpress.com/2009/09/pointing-fingers2.jpg

```
int x;                    // variable declaration

&x                        // the variable’s address

int* x_ptr = &x;          // pointer declaration

*x_ptr                    // “dereferencing” the value

char array[5];            // this is also a pointer!
```

```
int array[3] = {45, 67, 89};

int* pointer = &array[1];

int result = pointer[1];
```

(result = 89)

Passing 16-bit values around

```
char buffer[3] = {0, 0, 0};        // FL, FH, D
int frequency;
...
m_rf_read(buffer,PACKET_LENGTH);
...
frequency = buffer[0] + 256 * buffer[1];
```

Pointers to the rescue!

```
char buffer[3] = {0, 0, 0};        // FL, FH, D
int frequency;
...
m_rf_read(buffer,PACKET_LENGTH);
...
frequency = *(int*)&buffer[0];
// treat FH&FL as 16-bit value
// note: low-byte comes first (little endian)!
```

Well, now that’s just fancy...

```
char buffer[3] = {0, 0, 0};        // FL, FH, D
int* freq_ptr = (int*)&buffer[0];  // FH&FL as int
...
m_rf_read(buffer,PACKET_LENGTH);
...
if(*freq_ptr > 10000){
   ...
}
```