

- difference between traditional variables and pointers
 - `int x = 5`
 - Creates an integer variable that stores 5
 - `int* p = &x`
 - creates a pointer that stores the memory address of int x
- pointer declaration
 - declaring a pointer
 - `int* p; int* p = NULL`
 - creates an empty or null pointer
 - assigning a pointer
 - `int* p = &x`
 - creates a new pointer and assigns memory address of x
- Difference between different pointer type declarations
 - `int* x`
 - `char* y`
 - `double z`
 - differences are the sizes appointed to each pointer type
- Reference and deference operator
 - `&`
 - gets the memory address
 - used when assigning address to a pointer or when passing pointer to a function
 - `*`
 - gets value at the memory address
 - used by function to get data from pointer when parameters are passed by pointer
- Pointers in functions with multiple outputs
 - parameters can be passed as pointers and referenced so the original value is changed
- arrays as pointers
 - The array variable stores the memory address of the first address of the array
 - incrementing a pointer gets the next memory address
 - This can be used to go through the elements of a list by incrementing the pointer to get the address of the next element of the array
- Argcc and argv in `int main(int argc, char* argv[])`
 - `argc`
 - number of command line arguments
 - `argv`
 - array of strings for command line arguments
 - used when processing command line arguments
 - passing input, filenames
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