What is your name? Justin Ngo jmn4fms 2/11/20 inlab4.pdf
What is your quest? I want to be the very best like no one ever was.
What is your favorite color? Navy blue

Size of C++ data types

C++ Type	Size in bytes?	Max value? (base 10)	Zero is stored as (in hex)?	One (or 1.0) is stored as (in hex)?
int	4	2147483647	0x00000000	0x00000001
unsigned int	4	4294967295	0x00000000	0x00000001
float	4	3.40282e+38	0x00000000	0x0000038F
double	8	1.79769e+308	0x0000000000000000	0x3FF0000000000000
char	1	255	Char '0'= -x3-	Char '1'= 0x31
bool	1	1	false = 0x00	true = 0x01
C++ Type	Size in bytes?	Max value? (base 16 (hexadecimal))	NULL is stored as?	
int*	8	0xFFFFFFFFFFFFFFFF	0x0000000000000000	
char*	8	0xFFFFFFFFFFFFFFFF	0x0000000000000000	
double*	8	0xFFFFFFFFFFFFFFFF	0x0000000000000000	

Primitive Arrays in C++

How does the compiler determine the address of **`&(IntArray2D[i][j])`**? Assume the array is defined as: **`int IntArray2D[6][5];`**

The compiler determines the address of the &(IntArray2D[i][j]) by first getting the base address of the array first element IntArray[0][0]. The compiler then adds the product of the element sizes to the base address and the sum of the elements j and the product of i and the size of j elements. The base 10 address first needs to be converted into a base 16 number and then added to get the memory location. For the example IntArray2D[6][5],

the size would be 4 bytes because it is an integer array and the second would be 5. The memory of a 2D array is the base address + byte size*(i*j.size()+j). For the example this would come out to be base address + 4 **(**i*5 +j)
