

POO Handout – Lab 1

First Name: _____ Last Name: _____

C++ Lab 1 – Data types & pointers

Learning goals: (1) hands-on experience using C++ in Visual Studio; (2) understand C++ types, expressions, mathematical operators and variables.

Data types

| Statement/Command | Expected Value | Printed Value | Explain the difference |
|--|----------------|---------------|------------------------|
| <code>printf("\n Size: %d", sizeof(char));</code> | | | |
| <code>printf("\n Size: %d", sizeof(int));</code> | | | |
| <code>printf("\n Size: %d", sizeof(unsigned int));</code> | | | |
| <code>printf("\n Size: %d", sizeof(short int));</code> | | | |
| <code>printf("\n Size: %d", sizeof(float));</code> | | | |
| <code>printf("\n Size: %d", sizeof(double));</code> | | | |
| <code>char c = 'a'; printf("\n Value = %c", c);</code> | | | |
| <code>char c = 'a'; printf("\n Value = %d", c);</code> | | | |
| <code>char c = 'a'; printf("\n Value = %x", c);</code> | | | |
| <code>short int value = 0x011A; printf("\n Value = %d", value);</code> | | | |

Pointers

| Statement/Command | Expected Value | Printed Value | Explain the difference |
|--|----------------|---------------|------------------------|
| <code>int* pointer_int; printf("\n Size = %d", sizeof(pointer_int));</code> | | | |
| <code>char* pointer_char; printf("\n Size = %d", sizeof(pointer_int));</code> | | | |
| <code>printf("\n Size = %x", pointer_int);</code> | | | |
| <code>pointer_int = new int[10]; printf("\n Size = %d", sizeof(pointer_int));</code> | | | |
| <code>int values[10]; printf("\n Size = %d", sizeof(values));</code> | | | |
| <code>printf("\n %d", values[0]);</code> | | | |
| <code>printf("\n %x", values[0]);</code> | | | |
| <code>printf("\n %x", values[9]);</code> | | | |
| <code>printf("\n %x", values[10]);</code> | | | |
| <code>printf("\n %x", values[11]);</code> | | | |
| <code>printf("\n %x", values[11000]);</code> | | | |