Name:

Complete these activities to the best of your abilities without using the internet or your computers. You will not be graded on correctness of your answers or on syntactic correctness. This exercise is for us and you to see where your c++ memory and experience currently is.

# 1 C++ General Review

1. What is a class?

A.

2. What is a class attribute? (also called a “field")

A.

3. What makes a class attribute different than a local variable?

A.

4. What does the keyword this refer to and why is it important?

A.

5. What is a struct? How are classes and structs different from one another?

A.

6. What is a pointer? Explain, then give an example declaration of a pointer in c++.

A.

7. Define a struct Node to be used in a linked list. Your linked list should contain integer data. You may choose between a singly linked and a doubly linked list.

A.

8. What are the differences between the following three variable declarations? Show how you would increase the value of x from the variables x, y, and z.

(a) int x = 2;

A.

(b) int &y = x;

A.

(c) int \*z = &x;

A.

9. Recall that std::cout in the iostream library is used to print text to standard out. Write a c++ hello world program.

A.

10. Write a command that you would use to compile your hello world program from the command line, then write the command to run the executable that your compilation command produces.

A.

# 2 Code Comprehension

A screenshot of a cell phone

Description automatically generated

(a) Is there a compile time error for the given code snippet?

A.

(b) Is there a runtime error for the given code snippet?

A.

(c) If there are no errors, what do you think the output would be? Would it be the same each time you ran the program?

A.

**A screenshot of a cell phone

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1. This code snippet is contained in the file ex2.cpp was compiled using the command

***g++ -std=c++11 -Wall ex2.cpp -o ex2***. Write two commands to run the produced executable from the command line; one that does not produce an error and one that does produce an error.

A.

(b) Modify the given code so that neither of the commands given in the previous question would produce errors.

A.

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What is the output of the given code? Explain why the output is what you wrote down.

A.

A screenshot of a cell phone

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(a) What is the output of section 1 of the code? (the first two couts)

A.

(b) Add a function call to IncreaseAge via the p2 variable to the indicated part of the code

A.

(c) What is the output of section 2 of the code?

A.

(d) Add a function call to IncreaseAge via the p3 variable to the indicated part of the code

A.

(e) What is the output of section 3 of the code?

A.

A close up of text on a white background

Description automatically generated

(a) What type is a?

A.

(b) How many elements does the array hold in relation to x?

A.

(c) If x is 10, what is the value of u?

A.

(d) If x is 10, what is the value of a after the end of loop 1?

A.

(e) What is the purpose of loop 2?

A.

(f) What does the Mystery function do?

A.

End of Worksheet