

You must do at least 90% of this homework without the assistance of anyone else. Once you have 90% or more of the homework completed, you may double check your answers with a team-mate or study-partner.

I have completed at least 90% this homework assignment on my own. I/We realize that it is a violation of academic integrity to share this work with others, either this semester, or after the class is over.

I/We realize that the penalty for turning in work that is not my own, or assisting others in doing so, can range from an "F" in the class to dismissal from Trinity University

Print Name _____ Time Required = _____ Hrs.

Signature _____

Data Abstractions OOP-1

Chapter 1 Homework - Key

10 Points

Networking & Data Communications

Read The Course Outline, Chapter 1, and Review The Slides.

- 1] _____ This semester, CSCI 2320 will have __?_ exams.
- 2] _____ This semester, CSCI 2320 will have __?_ quizzes.
- 3] _____ This semester, CSCI 2320 will have a __?_ point quiz almost every __?_.
- 4] _____ {T/F} Quizzes may not be made up unless you are representing the university or have documented extended illness; the lowest quiz grade will be dropped.
- 5] _____ You are allowed to miss two classes without penalty; there will be a __?_ point deduction for each additional class absence. If you are not in class when roll is taken, you are absent!.
- 6] _____ {T/F} All labs must be submitted in wire-band binders.
- 7] _____ {T/F} The basic datatypes, available in C, are not valid in C++.
- 8] _____ The minimal standard for a short int is __?_ bytes; acceptable values range from __?_ to __?_.
- 9] _____ The minimal standard for a long int is __?_ bytes; acceptable values range from ~__?_ billion to ~__?_ billion.
- 10] _____ The minimal standard for an int is __?_ bytes; acceptable values range from __?_ to __?_.
- 11] _____ The Visual Studio Net for an int is __?_ bytes; acceptable values range from ~__?_ billion to ~__?_ billion.

- 12] _____ The Visual Studio Net short int is __?_ bytes; acceptable values range from __?_ to __?_.
- 13] _____ The Visual Studio Net long int is __?_ bytes; acceptable values range from ~__?_ billion to ~__?_ billion.
- 14] _____ The float is __?_ bytes and provides __?_ digits of accuracy.
- 15] _____ The double is __?_ bytes and provides __?_ digits of accuracy.
- 16] _____ The char is __?_ bytes.
- 17] _____ The bool is __?_ bytes.
- 18] Write the C++ code to create an integer variable, called x, and initialize it with 5 in a single statement.
- 19] Write the C++ code to create a floating point variable, called PayRate, and initialize it with 8.25 in a single statement.
- 20] Write the C++ code to create a boolean variable, called Value, and initialize it with true in a single statement.
- 21] Write the C++ code to create a character variable, called Option, and initialize it with an **A** in a single statement.
- 22] Write the C++ code to create a 10 character string variable, called Name; write a single statement which will fill Name with **Tom**.
Hint do not use =!
- 23] Write the C++ code to create a 10 character string variable, called FirstName; write a single assignment statement which will fill the first character of FirstName with **T**

28] Write the two statements [stdio.h] which will (1) prompt the user for a x and (2) enable the user to use scanf to fill the the x container defined earlier.

29] Write the two statements [iostream.h] which will (1) prompt the user for a x and (2) enable the user to use cin to fill the the x container defined earlier.

30] Write the two statements [stdio.h] which will (1) prompt the user for a name and (2) enable the user to use scanf to fill the the Name container defined earlier.

31] If the user enters "Tom Hicks" into the scanf above, only the first token, "Tom", is transferred into the Name container; not good. Write the two statements [stdio.h] which will (1) prompt the user for a name and (2) enable the user to use gets to fill the the Name container defined earlier.

32] Write the two statements [iostream.h] which will (1) prompt the user for a name and (2) enable the user to use cin to fill the the Name container defined earlier.

33] If the user enters "Tom Hicks" into the scanf above, only the first token, "Tom", is transferred into the Name container; not good. Write the two statements [iostream.h] which will (1) prompt the user for a name and (2) enable the user to use cin to fill the the Name container defined earlier.

34] _____ The include file that enables the programmer to use printf, scanf, puts, gets is `__?_`.

35] _____ The include file that enables the programmer to use cin and cout is `__?_`.

36] _____ The include file that enables the programmer to use strlen, strcmp and strcpy is `__?_`.

37] Write the C++ code to create a floating point variable, called PI, and initialize it with 3.14 in a single statement.

38] Write the C++ code to create a floating point constant, called PI, and initialize it with 3.14 in a single statement. Not the same as the problem above!

39] What is the difference between a constant and a variable?

40] Write the line of code that would make it possible for the programmer to include printf statements.

- 41] _____ Include statements are generally placed at the ___ of the program file.
- 42] _____ Define statements are generally placed at immediately after the ___ statements at the top of the file.
- 43] _____ Struct and class definitions are generally placed at immediately after the ___ statements and before the function prototypes.
- 44] _____ Function prototypes are generally placed at immediately after the ___ definitions and before the functions.
- 45] _____ ___ are generally placed at the bottom of the program.
- 46] _____ All local ___ are generally defined at the top of the function.

47] Number each of the following. Place them in the order that they should normally appear in a program.

_____ class and struct definitions

_____ include statements

_____ define statements

_____ functions

_____ prototypes

48] The slides describe three major reasons that programmers create functions/procedures/modules. List them.

49] _____ {T/F} One line modules are never appropriate.

50] _____ {T/F} One line modules are generally not appropriate.

51] Write the 1 line of code for the prototype for procedure/function **DisplayGreetings**. This function is to be passed no arguments.

52] Write the complete code for function **DisplayGreetings**. This function is to print 25 blank lines and the message "Welcome to CSCI 2320", and 10 more blank lines.

53] Write the line of code that could be placed in function main to evoke/call DisplayGreetings.

54] Write the 1 line of code for the prototype for procedure/function **Square**. This function is to be passed [by value] an long integer argument, called No. It is to explicitly return an long integer which is the square of the passed argument.

55] Write the complete code for function **Square**. It is to explicitly return an long integer which is the square of the passed argument. Square(-3) should explicitly return 9.

56] Write the line of code that could be placed in function main to display [stdio.h] the square of -3.

57] Write the 1 line of code for the prototype for procedure/function **Cube1**. This function is to be passed [by value] an long integer argument, called No and passed an long integer pointer, called CubePtr. It is to have no explicit return. If the first argument passed to Cube1 is -3, then the value pointed to by CubePtr is to contain -27 upon completion of this function. Use a pointer variable!

58] Write the complete code for function **Cube1**. This function is to be passed [by value] an long integer argument, called No and passed an long integer pointer, called CubePtr. It is to have no explicit return. If the first argument passed to Cube1 is -3, then the value pointed to by CubePtr is to contain -27 upon completion of this function. Use a pointer variable!

59] Function main contains an integer container, called x. Write the line of code that could be placed in function main to fill container x with the Cube of -3. Then display the Cube of 3.

60] Write the 1 line of code for the prototype for procedure/function **Cube2**. This function is to be passed [by value] an long integer argument, called No and passed [by reference] an long integer argument, called NoCube. It is to have no explicit return. The Cube of the passed No is to be placed in container NoCube.

61] Write the complete code for function **Cube2**. This function is to be passed [by value] an long integer argument, called No and passed [by reference] an long integer argument, called NoCube. It is to have no explicit return. If the first argument passed to Cube2 is -3, then the second argument is to contain -27 upon completion of this function. Use a reference variable!

62] Function main contains an integer container, called x. Write the line of code that could be placed in function main to fill container x with the Cube of -3. Then display the Cube of 3.

63] Write the two lines of code to fill string variable **Name** with "**Nancy**". (Hint-may not use =)

64] Write the line of code to fill long int variable **NoChars** with the number of characters in string variable Name..

65] Write the block of code to display "**Matches Nancy**" if string variable Name is "**Nancy**".

66] There are two character string variables, called String1 and String2, that are filled with uppercase/capital letters. Write the block of code to make sure that String1 would occur earlier in an alphabetical list than String2. (i.e. if String1 contains "Nancy" and String2 contains "Andy", switch the two values.)

67] There are two character string variables, called String1 and String2, that are filled with uppercase/capital letters. Write the block of code that will display the string with the most characters (longest string).

68] Write the block of code that will display the letters in String1 - one to a line. If the string is empty, display "String Is Empty".

69] The slides describe why programming costs go down with OOP because of stacks, queues, trees, etc. Explain!

70] _____ OOP is an acronym for _?_ .