CIST 1305 – Program Design and Development

Chapter 6

**Assignment #6**

[Functions/Methods]

*(40 Points)*

Please do the following exercises:

1. Create the pseudo-code/flowchart for an application class named Monogram. Its main() method inputs three variables that hold your first, middle, and last initials, respectively. Create a method(called Monogram()) to which you pass the three initials and that displays the initials twice—once in the order of first, middle, and last, and a second time in traditional monogram style (first, last, middle). Main inputs the data, you pass it to the Monogram Function, which will output the data.
2. Design an application that will convert either “Fahrenheit to Celsius” or “Celsius to Fahrenheit”. Have the user enter a 1 to convert “Fahrenheit to Celsius” and a 2 for “Celsius to Fahrenheit”. If the user enters any other number, output an error message. Once the user enters a 1, call a Method(called FtoC()) that 🡪 does the input, calculation and output for a Fahrenheit to Celsius conversion. If the user enters a 2, call a Method(called CtoF()) that 🡪 does the input, calculation and output for a Celsius to Fahrenheit conversion. Also write the pseudo-code.
3. Design an application that will Calculate the area of a Shape. Have the user enter a “C” to use a Circle, an “S” to use a Square and an “R” to use a Rectangle. If the user enters any other letter or number, output an error message. Once the user enters a “C”, call a Method(called Circle()) that 🡪 does the input, calculation and output to Calculate the area of a Circle. If the user enters an “S”, call a Method(called Square()) that 🡪 does the input, calculation and output to Calculate the area of a Square. If the user enters an “R”, call a Method(called Rectangle()) that 🡪 does the input, calculation and output to Calculate the area of a Rectangle. Also write the pseudo-code.
4. Create the pseudo-code/flowchart for an application that contains a main() method that continuously prompts the user for a number of dollars until the user enters 0. The main method passes the amount to a conversion method that displays the breakdown of the passed amount into the fewest bills; in other words, it calculates the number of 20s, 10s, 5s, and 1s needed.

Hint #1: In Visual Logic you do an integer divide using the symbol "\". So if you wanted to divide 5 by 3 and not get a fractional result then you would say " 5 \ 3" which will give you a result of 1.

Hint #2: In Visual Logic you can find the remainder of an integer division by using the MOD operator. So to get the remainder of 5 \ 3 you would write 5 MOD 3 which would result in 2.