**HOMEWORK ASSIGNMENT #4**

**Please complete the following items from Chapter 4 and submit by the assigned due date.**

**Algorithm Workbench *(2 pts each)***

**4.** (If-Then-Else Statement formatting)

If score < 60 Then

Display “Your grade is F.”

Else

If score < 70 Then

Display “Your grade is D.”

Else

If score < 80 Then

Display “Your grade is C.”

Else

If score < 90 then

Display “Your grade is B.”

Else

Display “Your grade is A.”

End If

End If

End If

End If

**7.** (**ONLY** the If-Then-Else statement, not an entire program)

If speed = 56 OR speed < 56 AND speed > 24 OR speed = 24 Then

Display “Speed is normal.”

Else

Display “Speed is abnormal.”

End If

**Debugging Exercises: *(4 pts)***

**1.** (***You are to completely convert the Pseudocode into Python 3 syntax, not just debug the code***)

def main():

# I am assuming that somewhere before the checkEquality module the variables num1 and num2

#have been declared and input by some method (likely by the user).

def checkEquality(int(num1), int(num2)):

#

main()

#

checkEquality(int(num1), int(num2))

If num1 = num2:

print(“The values are equal.”)

Else

If NOT num1 = num2:

print(“The values are NOT equal.”)

End If

**Programming Exercises: *(5 pts pseudocode, 5 pts flowchart, 7 pts Python code)***

1. Roman Numerals - Design a program that prompts the user to enter a number within the range of 1 through 10. The program should display the Roman numeral version of that number. If the number is outside the range of 1 through 10, the program should display an error message.

Module main()

Declare Real userNumber

//The point of declaring this variable as a real number is so //that users cannot enter decimals.

Call romanConverter(userNumber)

End Module

//-----------------------------------

Module romanConverter(userNumber)

Call numChecker(userNumber)

Call whatIf(userNumber)

Return userNumber

Return romanNumber

End Module

//-----------------------------------

Module romanDisplay(userNumber, romanNumber)

Display userNumber, “will look like”, romanNumber, “as a roman numeral.”

End Module

//--------------------------------

Module numChecker (userNumber)

Display “Please enter a number between 1 and 10 which you wish to have converted to roman numerals.”

Input userNumber

While userNumber < 1 OR userNumber > 10 Then

Display “Error: Please enter a number between 1 and 10.”

Input userNumber

End While

Return userNumber

End Module

//--------------------------------------

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Module whatIf(userNumber)

If userNumber = 1 Then

Set romanNumber = “I”

ElseIf userNumber = 2 Then

Set romanNumber = “II”

ElseIf userNumber = 3 Then

Set romanNumber = “III”

ElseIf userNumber = 4 Then

Set romanNumber = “IV”

ElseIf userNumber = 5 Then

Set romanNumber = “V”

ElseIf userNumber = 6 Then

Set romanNumber = “VI”

ElseIf userNumber = 7 Then

Set romanNumber = “VII”

ElseIf userNumber = 8 Then

Set romanNumber = “VIII”

ElseIf userNumber = 9 Then

Set romanNumber = “IX”

ElseIf userNumber = 10 Then

Set romanNumber = “X”

EndIf

EndIf

EndIf

EndIf

EndIf

EndIf

EndIf

EndIf

EndIf

EndIf

Call romanDisplay(userNumber, romanNumber)

Return userNumber

Return romanNumber

End Module

You must complete the pseudocode, flowchart and python 3 code for this assignment.

HINT: You are able to use a Select Case Statement in Pseudocode, but in Raptor and Python, the only available structure is the “If-Then-Else” or the “If-Then-Else If”

***The Raptor flowchart and Python code must be uploaded separately (your .rap file and your .py file), along with another document containing the answers to Algorithm Workbench 4 and 7, and Debugging Exercise 1.***