**Lab Objective:**In this lab, students will define basic programming concepts, create coding segments based on specific scenarios, and debug programs using Visual Studio 2015.

**Resources required:**

**Hardware:  Xendesktop**

**Software: Visual Studio 2015**

**Part 1:**

**Instructions**

Please provide short answer explanations to the questions down below.  Include C syntax were noted.

1. Describe how a counter controlled iteration structure works. Include each syntax item that is required to execute this structure successfully.  Provide a C for() statement syntax example with your response.
2. Explain the difference between a for() and a switch statement. Provide real world examples of when you would use each.
3. Explain why we would use a function in a C program. What are the three items that are needed to implement this structure correctly?
4. With functions we can pass arguments by value or by reference. Please describe the difference.
5. What is a recursive function? How does recursion relate to iteration?

**Part 2: Instructions**

Open your Visual Studio 2015 XenDesktop image, create a new project, and type the coding segments down below into the compiler.  Run the program(s) (Debug > Start without debugging).

1. Execute the following code and identify the errors in the program. Debug the program and provide the correct version of the code.



1. Execute the following code and identify the errors in the program. Debug the program and provide the correct version of the code. Note:  Be sure to check the output screen to see if the correct values are displaying according to the output statements.



1. Execute the following code and identify the errors in the program. Debug the program and provide the correct version of the code.



1. Execute the following code and identify the errors in the program. Debug the program and provide the correct version of the code.



1. Execute the following code and identify the errors in the program. Debug the program and provide the correct version of the code. Note:  There are two errors in the snippet below.



**Submission Instructions**

Upload a Microsoft Word Document with your answers to the questions in Part 1 and your written explanation of the error(s) and revised code for Part 2.  Use this naming convention to name your Word Document:

LastName\_Unit2\_Assignment1.docx