**Assignment for Loops: ITP 100**

Programming loops can execute a block of code as long as a specified condition is reached. Loops are handy because they save time, reduce errors, and they make code more readable. When designing the logic for a program that outputs every number from 1 through 15 along with its value times 10 and then times 100. The conclusion can be drawn that the number of output statements coded will be reduced when using loops.

How many output statements will need to be coded without loops and how many output statements will need to be coded using loops, explain how you came up with these numbers? Also show your work by coding the loop using pseudocode, or using the C++ or python coding programming language?

**Answers for Application/Analysis (first Question):**

One or three output statements will need to be coded using loops versus forty-five output statements will need to be coded without loops. If loops are not used when coding then 15 output statements will have to be coded to print the numbers 1 through 15, 15 output statements will have to be coded to print the numbers 1 \* 10 through 15 \* 10 and 15 output statements will have to be coded to print the numbers 1 \* 100 through 15 \* 100. Which would equal 45 coded print statements. Whereas when using loops, just coding one output statement or three output statements would render the same results of 45 coded output statements.

**Answer for Assumptions (second Question):**

**Code the loop using Pseudocode or Programming Language.**

**Pseudocode answer**

do (1 to 15)

print << number;

print << number \* 10;

print << number \* 100;

do (1 to 15)

print << number << number \* 10 << number \* 100;

**C++ answer**

for (int number = 1 ; number < 16; number++) {

cout << “Number = “ << number << endl;

cout << “Number \* 10= “ << number \* 10 << endl;

cout << “Number \* 100 = “ << number \* 100 << endl;

}