**IVY TECH COMMUNITY COLLEGE**

**SDEV 220 Python Programming**

**Chapter 2**

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**INTRODUCTION:** In this lab, you will demonstrate the use of input, processing and output by writing a Python programs using these statements. You will also learn about the concept of multi-threading and multi-processing .

**TO START YOUR PROGRAM**

At the top of each of your Python programs, you should have four lines of documentation:

Program name (the Python file name), Author (your name), Date last updated, and Purpose (a brief description of what the program accomplishes). Here is an example:

# Program name: TemperatureConverter.py

# Author: Carl LaFong

# Date last updated: 5/16/2012

# Purpose: Print out your name, address, phone #, and college major

Leave a blank line and then begin to write your program

**ASSIGNMENT: Programming Exercises #1 with the changes described below.**

1. Programming Exercise #1 You will input your name, full address, your phone number, and college major.
   1. Name your Python file jc**Informatio**n**.py**
   2. The output should be formatted to display the information.
   3. In addition to the four lines of documentation at the top of each program (described above), there should be a short comment above every line of Python code. See Program 2-18 for an example.

**ASSIGNMENT: Programming Exercises #2 with the changes described below.**

1. Programming Exercise # 2. You will input the projected amount of sales and the program will display the profit that will be made from this amount. Try your program several times with different sales to be sure that it is working.
   1. Name your Python file Your\_Initials + **SalesPrediction.py** (Example: jcSalesPrediction.py)
   2. The output should be formatted to display the information.
   3. In addition to the four lines of documentation at the top of each program, there should be a short comment above every line of Python code See Program 2-18 for an example.

**ASSIGNMENT: Programming Exercise #8 with the changes described below.**

1. Programming Exercise #8. You will input the amount of the meal purchased at the restaurant. The program will calculate the tip of 18%, tax and 7% sales tax and total. Display each of the amounts and the total on a separate line.

**ASSIGNMENT: Debugging:**

1. In programming, after you have written your code, you compile or interpret it to see if it will run correctly. If your program does not compile or interpret, you usually receive error messages. These error messages usually indicate that you have not written your statements (syntax) correctly. If your program runs, but does not give the correct solution, this is called a logic error. One of the skills programmers need to develop is to learn how to correct their code using these error messages indicators.

Go to the following link and read about debugging programs. Then use this information in debugging your programs. At the bottom of your lab assignment document, write a brief summary of the section No, I really need help. What three pieces of information does the article suggest you give to someone who is looking at your program to help you find the error.

**http://openbookproject.net/thinkcs/python/english3e/app\_a.html**

**ASSIGNMENT: Fascinating Topic: Multi-threading and Multi-processing**

**4**, Go to the web address: <http://www.tutorialspoint.com/python/python_multithreading.htm>

Read about the concept of multithreading and see some examples written in Python.

Then go to the web address

<https://docs.python.org/2/library/multiprocessing.html>

Read about the concept of multi-processing and see some examples written in Python. Using Word, write two or more paragraphs about the differences between multi-threading and multi-processing. You may use additional resources. If you use additional resources, be sure to cite them at the end of your document. Name your document YOUR INITIALS Multi-threading and Multi-processing.

**HOW TO SUBMIT YOUR ASSIGNMENT**

Save and close your Python files. In Blackboard, go to the Class Session where this assignment is posted, attach your Python file, Your\_initials + SalesPrediction.py (Example: jcSalesPrediction.py) and submit for grading. For this assignment, you should submit three program files and one document file.

**ASSIGNMENT: Debugging Answer:**

The section “No, I really need help” it is for those that tried alone to figure out a bug in their program, however, the bug still there. The article says that sometimes you work so much in program that you cannot see your error, and a second person looking at your code could help you to solve the bug.

However, to bring someone to help you, you need give him information such as if there is any error messages and the content of those messages; where was in the code that you last modified before the bug occur; or even what have you tried so far to solve it.

Debugging is not make a program to work, but to see how it work and how it is made.

**ASSIGNMENT: Fascinating Topic: Multi-threading and Multi-processing answer:**

Multiprocessing starts processes instead of threads, and works in separate memory spaces, threading starts threads and works with shared memory spaces.

Multiple thread within a process share the same data space with the main thread, multiprocessing in the other hand offers local and remote concurrency.