CS170/01 Introduction to Python Programming – Fall 2019

Week 1 Assignment

Due on Wednesday, Sept. 11 at 11:59 p.m.

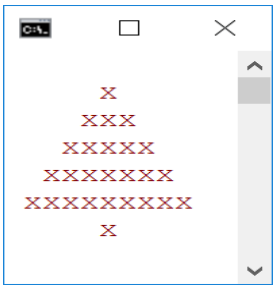
Note: You are encouraged to discuss homework problems with other students (and with the instructor), but you must write your final answer by yourself. Solutions prepared "in committee" or by copying someone else's work are not acceptable.

1. **Personal Information**
   Write a program that displays the following information, save the program as **Personal.py**.
   - Your name
   - Your address, with city, state, and ZIP
   - Your telephone number
   - Your college major

   Sample output:

```
Student Name
800 Main Street, Whitewater, WI 53190
262-472-1234
Computer Science Major
```

2. **Display a pattern**
   Write a program that displays the following pattern. Save the program as **Tree.py**.



3. **Compute expressions**
   Write a program that displays the result of the following expression, save it as **ComputeExpression.py**.

$$\frac{9.5 \times 4.5 - 2.5 \times 3}{45.5 - 3.5}$$

Sample output:

```
0.8392857142857143
```

Upload the following completed files to the **Assignments → Weekly Homework → Week #1** folder on **Canvas**.

1). PersonalInfo.py
2). Tree.py
3). ComputeExpression.py

Writing Python Programs and Running them in Script Mode

Although interactive mode is useful for testing code, the statements that you enter in interactive mode are not saved as a program. They are simply executed and their results displayed on the screen. If you want to save a set of Python statements as a program, you save those statements in a file. Then, to execute the program, you use the Python interpreter in script mode.

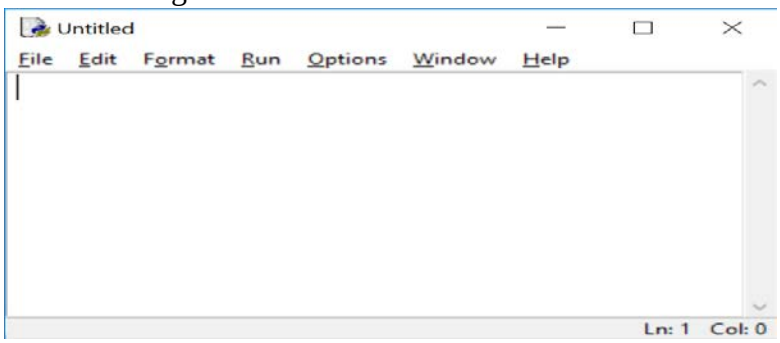
For example, suppose you want to write a Python program that displays the following two lines of text:

Welcome to Python!
Programming is fun!

Method 1

Step 1: To write a new Python program in IDLE (Integrated Development Environment), you open a new editing window: File >> New File

A text editing window

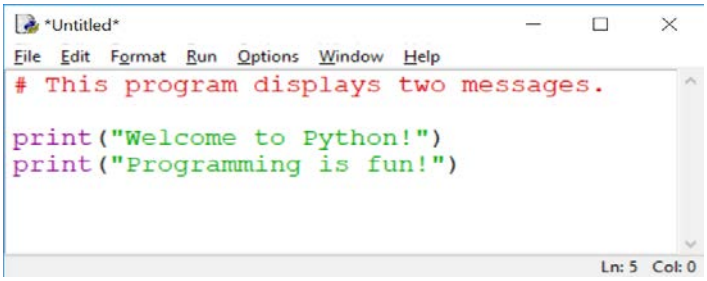


To open a program that already exists, click File on the menu bar, then **Open**. Simply browse to the file's location and select it, and it will be opened in an editor window.

Automatic Indentation

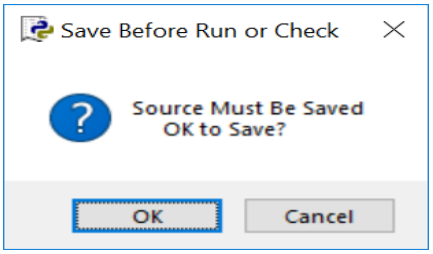
The IDLE editor has features that help you to maintain consistent indentation in your Python programs. Perhaps the most helpful of these features is automatic indentation. When you type a line that ends with a colon, such as in if clause, the first line of a loop, or a function header, and then press the Enter key, the editor automatically indents the lines that are entered next.

Type the following statements in the text editor:

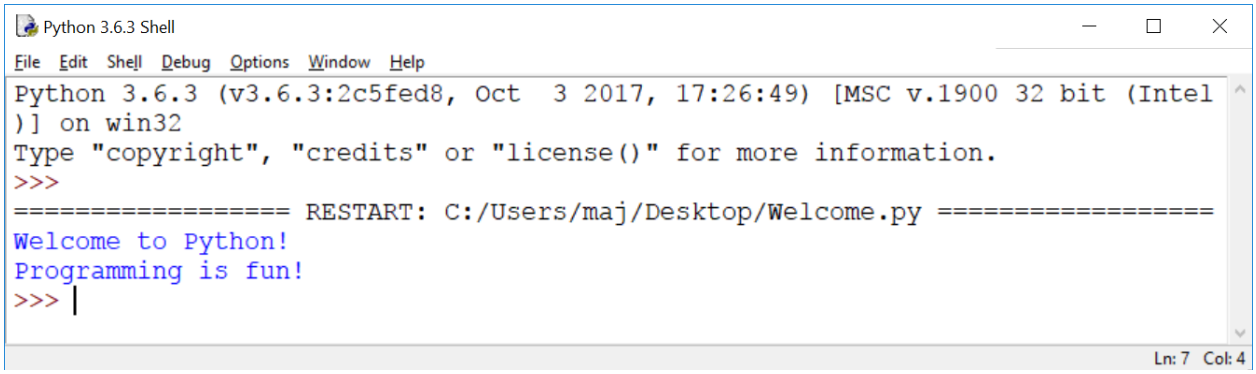


Step 2: Save the program as **Welcome.py**. **Note** that, when you save a Python program, you give a name that ends with the **.py** extension, which identifies it as a Python program.

Step 3: To run the program, you can press the F5 key, or click Run on the editor window's menu bar, then Run Module. If the program has not been saved since the last modification was made, you will see the dialog box shown below.



Click OK to save the program. When the program runs you will see it output displayed in IDLE's Python Shell window, as shown below.



Method 2

Step 1: Use a text editor such as **NotePad++** to create a file containing the following statements:

```
#This program displays two messages.
print ("Welcome to Python!")
print ("Programming is fun!")
```

Step 2: Save the program as **Welcome.py**. **Note** that, when you save a Python program, you give a name that ends with the **.py** extension, which identifies it as a Python program.

Step 3: To run the code, right-click on the tab of your code in Notepad++ window and select "**Open Containing Folder in cmd**", then type: **Welcome.py** and press Enter key.