Introduction to Science/Programming (ICS 3U/C)
Computer Programming First Day Problem Set

Name: _____

Intructions

Create a folder called ICS3 to store the programs you create this year. In your ICS3 folder, create a folder called **Introduction** to store any programs you will create in this assignment.

Part #1

Enter the following one line programs into the computer using the Python Shell and record your answers.

print (10) _____

print (2 + 13) _____

print (6 * 5) _____

print (14 * 10) _____

What is the * operator? _____

print (-5 + 5) _____

print (-5 - 5) _____

print (10 / 4) _____

print (10 / 5) _____

print (10 / 6) _____

What is the / operator? _____

print (10 // 4) _____

print (10 // 5) _____

print (10 // 6) _____

What is the // operator? _____

print (10 % 4) _____

print (10 % 5) _____

print (10 % 6) _____

What is the % operator? _____

print (2**3) _____

print (2 ** 6) _____

What is the ** operator? _____

print (34.56 * 4.21) _____

print (43.45 / 567 * 6.4) _____

print (6 + 7 / 2) _____

print ((6 + 7) / 2) _____

What is the order of operations in Python?_____

print (“2+13=") _____

print ("Here are some interesting calculations:”) _____

print (“My name is *Your Name*") _____

print (My name is *Your Name*) _____

What happens when you enclose data in quotes?_____

What type of data must have quotes around it? _____

What type of data doesn’t need have quotes around it?_____

What command would you use to output the equation and the answer ie. 4+13 = 17?

_____

Part 2

All the lines above are only one line programs. To be useful, a program must have many lines of code. Open a new window (**File/New Window**) and type the following very simple program (just estimate the number of spaces between characters).

```
# My first program
print (“FUNNY FACE")
print (“            *********")
print (“          **         **”)
print (“        **  ---   ---  **")
print (“    ((**     @     @     **)")
print (“      **                 **")
print (“      **  UU    V    UU  **")
print (“        **  UU     UU  **")
print (“          **  UUUUU  **")
print (“           **       **")
print (“----MMM------*******------MMM----")
```

a) The computer does nothing with your program until you execute or run it. This is done using the **Run/Run Module** command or by pressing the F5 key. If you try to run your program, the computer will tell you it must be saved first. Save it as **Face.py** in your **Introduction** folder and then run again. What happened? _____

b) Notice that the first line in the program (ie: *# My first program*) was ignored by the computer. This is known as a **comment**. Comments are inserted by the programmer to provide information to other programmers and to remind themselves of important information. Add the following lines to your program immediately after the comment line that is already in your program:

 # By your name

 # Today’s date

c) **Errors**

If you are lucky, you have not made any errors to this point. If you do, the computer will not run the program until you fix the error. Fortunately, you will usually get an error message that will often give you a clue about the error. Try the following two errors on your Face program and write the error message.

1. Remove a quote from one of the lines of code. What is the error message?

_____

_____

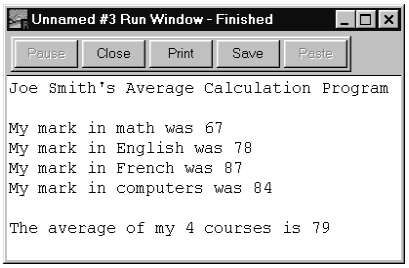
2. Indent one of the lines of code. What is the error message?

_____

_____

Part 3

Start Python on your computer and create the following programs. Make sure you use the correct name when saving your programs in your **Introduction** folder.

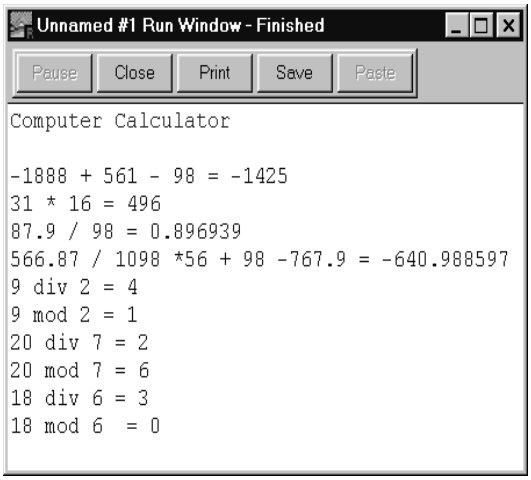


1. Write a program which will output your name and the names and your marks of the 4 courses you took last semester (make them up if you cannot remember). The program should then output the average of the four marks - have the computer calculate the average. Use the screen shots to guide you on determining what the output should look like. Save your program as **Intro1.py**

Hint: Remember BEDMAS

2. Create a program that will first output a heading which says "Computer Calculator". It will then output the equations and <u>calculate and output</u> the answers for the following equations :.

-1888 + 561 - 98
31 * 16
87.9 / 98
566.87 / 1098 *56 + 98 -767.9
9 * 2
9 ** 2
20 // 7
20 % 7
18 // 6
18 % 6



Use the screen shots to guide you on determining what the output should look like. Save your program as **Intro2.py**

Note: Instead of typing *div*, type // and instead of typing *mod*, type **%**.