CPSC 1301, Computer Science I Lab Assignment

Lab 01b

August 8, 2021

1 Installing and Testing your Python

Install the appropriate Python for your machine. Use Python3. See `https://www.python.org/`. Test your Python by doing this lab. Enter the following two commands at the OS prompt.

```
OS Prompt>python -V #this is a minus sign and an upper case V
OS Prompt>python --help #this is two minus signs followed by the word 'help'
```

2 Writing and Running your First Python Program

Use this template for writing your Python programs. Use any text editor of your choice. I recommend Notepad++ (`https://notepad-plus-plus.org/`).

```
1  #!python
2  # Name: week01_1.py
3  # Author: Charles Carter
4  # Date; May 16, 2021
5  # Purpose: first Python lab
6
7  # import statements here (if any)
8
9  # define methods here (if any)
10 # first function, no inputs, no outputs
11 def hello():
12     print("Hello from 'template.py'")
13
14 # second function, one input, no outputs
15 def hello_input(name):
16     print("Hello", name)
17
18 # third function, no inputs, one ouput
19 def hello_output():
20     print("Please enter your name: ", end = '')
21     v = input()
22     retval = "Hello, " + v
23     return retval
24
25 # fourth function, one input, one output
26 def hello_hello(whatever):
27     result = "This is the input: " + whatever
28     return result
29
30 #main function executes the defined functions
31 if __name__ == '__main__':
32     print("Hello from main")
33     hello()
34     hello_input("Charles")
35     # also, can use a variable
36     moniker = "Charles"
37
```

```
38      # also, can use a variable
39      hello_input(moniker)
40
41      s = hello_output()
42      print(s)
43
44      print("Please enter some input: ", end = '')
45      x = input()
46      y = hello_hello(x)
47      print(y)
```

3 Writing and Running your First Python Program

Use this template for writing your Python labs and other quick and dirty scripts. Use any text editor of your choice. I recommend Notepad++ (`https://notepad-plus-plus.org/`).

```
1       ##################
2       # week1_2.py
3       ##################
4
5       print("hello wprld")
```

```
1       ##################
2       # week1_3.py
3       ##################
4
5       name = "Your Name"
6       print(name)
```

```
1       ##################
2       # week1_4.py
3       ##################
4
5       lhs = 4
6       rhs = 4
7       sum = lhs + rhs
8       print(sum)
```

```
1       ##################
2       # week1_5.py
3       ##################
4
5       print("Enter an integer:")
6       lhs = int(input())
7       print("Enter another integer:")
8       rhs = int(input())
9       product = lhs * rhs
10      print(product)
```

```
1       ##################
2       # week1_6.py
3       ##################
4
5       def my_fun():
6           print("You have called my_fun")
7
8       my_fun()
```

4 Installing and Testing your Python

Install the appropriate Python for your machine. Use Python3. See `https://www.python.org/`. Test your Python by doing this lab.

```
C:\Users\ccc31\cols-st\cpsc1301>python
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> # VARIABLES ########################################
>>> print ("Hello, CSU!");
>>> name = "Student"
>>> print("Hello", name, "!")
>>> c = "Columbus"
>>> s = "State"
>>> u = "University"
>>> print("Hello", c, s, u)
>>> h = "Hello"
>>> print(h, c, s, u)
>>> greeting = "Hello, CSU!"
>>> print(greeting)
>>> # assign your name to a variable and greet yourself
>>> # ----------- your code here -----------------
>>> # ARITHMETIC #######################################
>>> x = 5
>>> y = 7
>>> z = 9
>>> x + y
>>> x * z
>>> z - y
>>> z / x
>>> z % x
>>> x % z
>>> x // z
>>> z // x
>>> x / z
>>> z / x
>>> print(x + y, x - z, z * y, z / x, z % x, y // x)
>>> x + y * z
>>> (x + y) * z
>>> x + (y * z)
>>> x + y * z - x
>>> (x + y) * (z - x)
>>> x + (y * z) - x
>>> x * y / z
>>> (x * y) / z
>>> x * (y / z)
>>> x / y * z
>>> (x / y) * z
>>> x / (y * z)
>>> # COMPARISON OPERATORS ##############################################
>>> x == 5
>>> x != 5
>>> x == y
>>> x != y
>>> x > y
>>> x < y
>>> x >= 5
>>> x >= y
>>> 5 >= x
```

```
>>> 5 > x
>>> w = print("Hello")
>>> w
>>> print(w)
>>> # LOGICAL OPERATORS #########################################
>>> 0 and 0
>>> 1 and 1
>>> 2 and 4
>>> 2 or 4
>>> True
>>> not True
>>> False
>>> not False
>>> not (1 and 1)
>>> not (1 or 12)
>>> not (0 and 0)
>>> not (0 or 0)
>>> True and True
>>> True and False
>>> False and True
>>> False and False
>>> True or True
>>> True or False
>>> False or True
>>> False and False
>>> # DOING MATH ################################################
>>> import math
>>> math.pi
>>> math.sqrt(4)
>>> math.sin(0)
>>> math.cos(0)
>>> math.tan(0)
>>> exit()
```