CSCA08 Tutorial Week 3

TUT 0009

TA: Andrew Wang

E-mail: andrewpy.wang@mail.utoronto.ca

Website: http://andrewwang.ca/a08/

THIS WEEK

Review

(Lots of) memory models

Python Tutor

DATA TYPES

TYPE CONVERSION

>>> float(1)

>>> int(2.9)

>>> str(2.9)

>>> int("1")

>>> float("2.9")

OPEARTORS

int, float: + - * / ** // %

str: + *

FUNCTIONS

```
def function_name(parameters):

    # chunk of code

    return …
```

Scope

Global variables:
- ◦ Created outside a function
- ◦ Can be accessed, but cannot be changed inside a function

Local variables:
- ◦ Created inside a function
- ◦ Get "lost" after the function is executed

MEMORY MODEL

Tedious, but really really important

Will be at least 50% on term test 1

Be very careful!

```
x = 7
y = 10
x = 8
x = 10
x = 8
x = y
y = 15
z = x + y
print(z)
x = "Hello"
y = 5
z = x + y
print(x * y)
```

```
x = 7

y = 10

x = 8

x = 10

x = 8

x = y

y = 15

z = x + y

print(z)

x = "Hello"

y = 5

z = x + y

print(x * y)
```

```python
#now let's try functions
def my_function(x):
    y = x + 7
    print(y)
    return "Hello"


y = my_function(3)
print(y)
```

```
#now more functions
def func_a():
    x = 7
def func_b():
    x = 7
    return x
def func_c(x):
    x = 7
def func_d(x):
    return x
y = func_a()
print(y)
y = func_b()
print(y)
x = 10
y = func_c(x)
print(x, y)
y = func_d(x)
print(x, y)
```

```python
#and functions within functions
def func_a(x):
    x = x + 7
    print(x)
    return x
def func_b(x):
    x = x + func_a(x)
    print(x)
    return x
def func_c(x):
    x = x + func_b(x)
    print(x)
    return x
y = func_c(3)
print(y)
```

Python Tutor

http://www.pythontutor.com/

You need to use the following settings:

◦ Python 3.6
◦ Hide exited frames [default]
◦ Render all objects on the heap
◦ Use text labels for pointers

REMINDERS

Exercise 2 dues 27-Jan 11:30 PM

Term Test 1
February 12th, 2018.
17:00 - 19:00

Term Test 2
March 5th, 2018. 17:00 -
19:00

Final

TBA