Let’s Learn Python!

HourOfCode, CS Education Week 2014

Math

```
>>> 1 + 2
>>> 12 - 3
>>> 9 + 5 - 15

>>> 6 * 5
>>> 6 / 2
>>> 10 * 5 * 3

>>> 8 / 5
>>> 20 / 7
>>> 10 / 3
```

```
>>> 10/3
>>> 10/2

>>> 10/3.0
>>> 10.0/2
```

```
>>> 5 < 4 + 3
>>> 12 + 1 >= 12
>>> 16 * 2 == 32
>>> 16 != 16
>>> 5 >= 6
```

Strings

```
>>> "garlic breath"
>>> "Hello!"

>>> apple

>>> "apple"
>>> "What's for lunch?"
>>> "3 + 5"

>>> "Hi" + "there!"

>>> "HAHA" * 250
```

```
>>> "H" + "e" + "l" + "l" + "o"

>>> print ("Hello")
>>> print ("Hello"[0])
>>> print ("Hello"[4])

>>> print ("Hey, Bob!"[6])
>>> print ("Hey, Bob!"[6 - 1])

>>> print ("Hey, Bob!"[4])
```

Variables

```
>>> 12 * 12
>>> donuts = 12 * 12
>>> donuts
```

```
>>> color = "yellow"
>>> color
>>> color = "red"
>>> color
>>> color = "fish"
>>> color = 12
```

```
>>> fruit = "watermelon"
>>> print (fruit[2])

>>> number = 3
>>> print (fruit[number-2])
```

Errors

```
>>> "friend" * 5
>>> "friend" + 5
>>> "friend" + "5"
```

Data types

```
>>> type("Hi!")
```

Lists

```
>>> fruit = ["apple", "banana", "grape"]
>>> numbers = [3, 17, -4, 8.8, 1]
>>> type(fruit)
>>> type(numbers)
```

```
>>> print ("apple"[0])
>>> fruit
>>> print (fruit[0])
```

```
>>> colors = ["red", "orange", "purple"]
>>> print (colors[1])
```

Booleans

```
>>> 1 == 1
>>> 15 < 5

>>> True
>>> False

>>> true
>>> false

>>> type(True)
>>> type("True")

>>> 1==1 or 2==2
>>> 1==1 or 2!=2
>>> 1==2 or 2==3

>>> 1==1 and 2==2
>>> 1==1 and 2==3
>>> 1==2 and 2==3

>>> 1==1
>>> not 1==1
>>> not True
```

```
>>> True and True
>>> True and False
>>> False and False

>>> True or True
>>> False or True
>>> False or False

>>> not True and True
>>> not True or True
```

```
>>> True and True
>>> False and True
>>> 1 == 1 and 2 == 1
>>>"test" == "test"
>>> 1 == 1 or 2 != 1
>>> True and 1 == 1
>>> False and 0 != 0
>>> True or 1 == 1
>>>"test" == "testing"
>>> 1 != 0 and 2 == 1
```

`if` Statements

```
>>> name = "Katie"
>>> if name == "Katie":
        print ("Hi Katie!")

>>> if name == "Katie":
        print ("Hi Katie!")
    else:
        print ("Impostor!")

>>> if name == "Katie":
        print ("Hi Katie!")
    elif name == "Barbara":
        print ("Hi Barbara!")
    else:
        print ("Who are you?")
```

```
>>> color = "blue"
>>> if color == "yellow":
        print ("Yay!")
    elif color == "purple":
        print ("Try again!")
    else:
        print ("We want yellow!")
```

Loops

```
>>> for mynum in [1, 2, 3, 4, 5]:
        print ("Hello", mynum)
```

```
>>> count = 0
>>> while (count < 4):
        print ("The count is:", count)
        count = count + 1
```

Functions

```
>>> def say_hello(myname):
        print ('Hello', myname)
>>> say_hello("Katie")
>>> say_hello("Barbara")
```

```
>>> def double(number):
        print (number * 2)
>>> double(14)
>>> double("hello")

>>> def multiply(num1, num2):
        print (num1 * num2)
>>> multiply(4, 5)
>>> multiply("hello", 5)
```

```
>>> def double(number):
        print (number * 2)
>>> double(12)
>>> new_number = double(12)
>>> new_number
```

```
>>> def double(number):
        return number * 2
>>> double(12)
>>> new_number = double(12)
>>> new_number
```

Input

```
>>> def hello(myname):
      print ("Hello", myname)
>>> hello_there("Katie")

>>> def hello_there():
      print ("Type your name:")
      name = raw_input()
      print ("Hi", name, "how are you?")
>>> hello_there()

>>> def hi_there():
      name = raw_input("Type your name: ")
      print ("Hi", name, "how are you?")
>>> hello_there()
```

Modules

```
>>> import random
>>> print (random.randint(1,100))

>>> import time
>>> time.tzname
```

```
>>> import calendar
>>> calendar.prmonth(2014, 4)

>>> import os
>>> for file in os.listdir("/home/pi"):
        print (file)

>>> import urllib
>>> myurl = urllib.urlopen("http://www.python.org")
>>> print (myurl.read())
```

Games!

```
secret_number = 7

guess = input("What number am I thinking of? ")

if secret_number == guess:
    print ("Yay! You got it.")
else:
    print ("No, that"s not it.")
```

```
from random import randint

secret_number = randint(1, 10)

while True:
    guess = input("What number am I thinking of? ")

    if secret_number == guess:
        print ("Yay! You got it.")
        break
    else:
        print ("No, that"s not it.")
```

More Games!

```
from random import randint

secret_number = randint(1, 10)

while True:
    guess = input("What number am I thinking of? ")
    if secret_number == guess:
        print("Yay! You got it.")
        break
    elif secret_number > guess:
        print("No, that"s too low.")
    else:
        print("No, that"s too high.")
```