

Let's Learn Python!

Young Coders at PyCon 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"
>>> print "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."
```

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."
```