Variables and types

* Numbers integers and floating point numbers.
* Strings e.g. mystring = ‘hello’ or mystring = “hello”

Code

*# coding=utf-8*myint = 7  
**print**(**'int value :'**+str(myint))  
  
myfloat = 7.1  
**print**(**"float value :"**+str(myfloat))  
  
**print**(**'int to float value : '**+str(float(myint)))  
*# number 数据类型 integer float两种*mystring1 = **'string defined with single quote...'  
print**(mystring1)  
  
mystring2 = **"string defined with double quote."  
print**(mystring2)  
  
*# string 单引号 和 双引号两种定义方式***print**(**"print does't"**)  
  
**print**(**'"yes",he said.'**)  
  
**print**(**'"isn\'t it",he said.'**)  
  
s = **'first line \n second line.'  
print**(s)

mystring = **"Don't worry about apostrophes"  
print**(mystring)  
  
a, b = 3, 4  
**print**(a, b)  
  
mystring = **"hello world"**myfloat = 10.0  
myint = 20  
  
*# testing code***if** mystring == **'hello world'**:  
 **print**(**"String: %s"** % mystring)  
**if** isinstance(myfloat, float) **and** myfloat == 10.0:  
 **print**(**"float:%f"** % myfloat)  
**if** isinstance(myint, int) **and** myint == 20:  
 **print**(**"integer : %d "** % myint)

**Lists**

mylist = []  
mylist.append(1)  
mylist.append(2)  
mylist.append(3)  
  
**print**(mylist)  
**print**(mylist[0])  
**print**(mylist[1])  
**print**(mylist[2])  
  
**for** x **in** mylist:  
 **print**(x)  
  
  
mylist = [3,4,2,4.5]  
mylist1 = [**'hello'**,2]  
mylist2 = mylist + mylist1  
**print**(mylist2)  
  
**for** x **in** mylist2:  
 **print**(x)  
  
numbers = []  
strings = []  
names = [**"John"**,**"Eric"**,**"Jessica"**]  
  
  
*# write your code here*numbers.append(1)  
numbers.append(2)  
numbers.append(3)  
  
strings.append(**"hello"**)  
strings.append(**"world"**)  
  
second\_name = names[1]  
  
**print**(numbers)  
**print**(strings)  
**print**(**"second name in names list is %s"**%second\_name)

Basic Operators

* Addition + number addition and string concatenation
* Subtraction –
* Multiplication \* special “hello” \* 10 [1,2,3] \*3
* Division /
* Modulo %
* Power \*\* 2\*\*3 = 8

number = 1 + 2 \* 3 - 1;  
**print**(number)  
  
number = 3 / 2  
**print**(number)  
**print**(float(number))  
  
number = 3 / 2.0  
**print**(number)  
  
number = 1 + 2 \* 3 / 4.0  
**print**(number)  
  
remainder = 11 % 3  
**print**(remainder)  
  
squared = 7 \*\* 2  
cubed = 2 \*\* 3  
**print**(squared + cubed)  
  
lotsofhellos = **"hello"** \* 10  
**print**(lotsofhellos)  
  
even\_numbers = [2,4,6,8]  
odd\_numbers = [1,3,5,7]  
all\_numbers = odd\_numbers + even\_numbers;  
**print**(all\_numbers)  
  
**print**([1,2,3]\*3)  
  
x = object()  
y = object()  
  
x\_list = [x] \* 10  
y\_list = [y] \* 10  
big\_list = x\_list + y\_list  
  
**print**(**"x\_list size = %d"** % len(x\_list))  
**print**(**"y\_list size = %d"** % len(y\_list))  
  
*# testing code***if** x\_list.count(x) == 10 **and** y\_list.count(y) == 10:  
 **print**(**"Almost there..."**)  
**if** big\_list.count(x) == 10 **and** big\_list.count(y) == 10:  
 **print**(**"Great!"**)  
  
**print**(big\_list)

String formatting

name = **"Jessie"  
print**(**"Hello , %s"** % name)  
  
age = 23  
**print**(**"%s is %d years old"** % (name, age))  
  
mylist = [1, 2, 3]  
**print**(**"mylist is "** + mylist.\_\_repr\_\_())  
  
  
data = (**"John"**,**"Doe"**,53.44)  
format\_string = **"Hello %s %s, Your current balance is $%s."  
print**(format\_string %data)

String Operations

astring = **"Hello world!"**astring2 = **'Hello world!'  
  
print**(**"single quotes are ''"**)  
**print**(len(astring))  
  
**print**(astring.index(**'o'**))  
**print**(astring.index(**'l'**))  
  
**print**(astring.count(**'l'**))  
  
astring = **"Hello world!"***# [start:stop:step]***print**(astring[3:7])  
**print**(astring[3:7:1])  
**print**(astring[3:7:2])  
**print**(astring[::2])  
**print**(astring[::-1])  
  
**print**(astring.upper())  
**print**(astring.lower())  
  
startwith = astring.startswith(**"Hello"**)  
**print**(startwith.\_\_class\_\_)  
**print**(astring.endswith(**"asgasg"**))  
  
afewwords = astring.split(**' '**)  
**print**(afewwords.\_\_class\_\_)  
**print**(afewwords)  
**for** x **in** afewwords:  
 **print**(x)  
  
s = **"Hey there! what should this string be?"***# Length should be 20***print**(**"Length of s = %d"** % len(s))  
  
  
s = **"Strings are awesome!"***# Length should be 20***print**(**"Length of s = %d"** % len(s))  
  
*# First occurrence of "a" should be at index 8***print**(**"The first occurrence of the letter a = %d"** % s.index(**"a"**))  
  
*# Number of a's should be 2***print**(**"a occurs %d times"** % s.count(**"a"**))  
  
*# Slicing the string into bits***print**(**"The first five characters are '%s'"** % s[:5]) *# Start to 5***print**(**"The next five characters are '%s'"** % s[5:10]) *# 5 to 10***print**(**"The thirteenth character is '%s'"** % s[12]) *# Just number 12***print**(**"The characters with odd index are '%s'"** %s[1::2]) *#(0-based indexing)***print**(**"The last five characters are '%s'"** % s[-5:]) *# 5th-from-last to end  
  
# Convert everything to uppercase***print**(**"String in uppercase: %s"** % s.upper())  
  
*# Convert everything to lowercase***print**(**"String in lowercase: %s"** % s.lower())  
  
*# Check how a string starts***if** s.startswith(**"Str"**):  
 **print**(**"String starts with 'Str'. Good!"**)  
  
*# Check how a string ends***if** s.endswith(**"ome!"**):  
 **print**(**"String ends with 'ome!'. Good!"**)  
  
*# Split the string into three separate strings,  
# each containing only a word***print**(**"Split the words of the string: %s"** % s.split(**" "**))

Conditions

x = 2  
**print**(x == 2)  
**print**(x == 3)  
**print**(x < 3)  
  
*# Boolean operators*name = **"John"**age = 23  
**if** name == **'John' and** age == 23:  
 **print**(**"Your name is John, and you are also 23 years old."**)  
  
**if** name == **"John" or** name == **"Rick"**:  
 **print**(**"Your name is either John or Rick."**)  
  
  
*#The "in" operator***if** name **in** [**"John"**,**"Rick"**]:  
 **print**(**"Your name is either John or Rick"**)  
  
x = 2  
**if** x == 2:  
 **print**(**"x equals two!"**)  
**else**:  
 **print**(**"x does not equal to two."**)  
  
*#The is operator*x = [1,2,3]  
y = [1,2,3]  
**print**(x == y)  
**print**(x **is** y)  
  
*#The "not" operator***print**(**not** False)  
**print**((**not** False) == False)  
  
*# change this code*number = 16  
second\_number = 0  
first\_array = [1,2,3]  
second\_array = [1,2]  
  
**if** number > 15:  
 **print**(**"1"**)  
  
**if** first\_array:  
 **print**(**"2"**)  
  
**if** len(second\_array) == 2:  
 **print**(**"3"**)  
  
**if** len(first\_array) + len(second\_array) == 5:  
 **print**(**"4"**)  
  
**if** first\_array **and** first\_array[0] == 1:  
 **print**(**"5"**)  
  
**if not** second\_number:  
 **print**(**"6"**)

loops

primes = [2, 3, 5, 7]  
**for** prime **in** primes:  
 **print**(prime)  
  
**for** x **in** range(5):  
 **print**(x)  
  
**for** x **in** range(3, 6):  
 **print**(x)  
  
**for** x **in** range(3, 8, 2):  
 **print**(x)  
  
count = 0  
**while** count < 5:  
 **print**(count)  
 count += 1  
  
count = 0  
**while** True:  
 **print**(count)  
 count += 1  
 **if** count >= 5:  
 **break  
  
for** x **in** range(10):  
 **if** x % 2 == 0:  
 **continue  
 print**(x)  
  
count = 0  
**while** (count < 5):  
 **print**(count)  
 count += 1  
**else**:  
 **print**(**"count value reached %d"** % (count))  
  
**for** i **in** range(1, 10):  
 **if** (i % 5 == 0):  
 **break  
 print**(i)  
**else**:  
 **print**(**"this is not printed because for loop is terminated because of break but not due to fail in condition"**)  
  
numbers = [  
 951, 402, 984, 651, 360, 69, 408, 319, 601, 485, 980, 507, 725, 547, 544,  
 615, 83, 165, 141, 501, 263, 617, 865, 575, 219, 390, 984, 592, 236, 105, 942, 941,  
 386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345,  
 399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687, 217,  
 815, 67, 104, 58, 512, 24, 892, 894, 767, 553, 81, 379, 843, 831, 445, 742, 717,  
 958, 609, 842, 451, 688, 753, 854, 685, 93, 857, 440, 380, 126, 721, 328, 753, 470,  
 743, 527  
]  
  
*# your code goes here***for** number **in** numbers:  
 **if** number == 237:  
 **break  
  
 if** number % 2 == 1:  
 **continue  
  
 print**(number)

functions

**def** my\_function():  
 **print**(**"called my\_function, here is result."**)  
  
  
**def** greet(username):  
 **print**(**"Hello %s"** % username)  
  
  
**def** sum\_two\_numbers(a, b):  
 **return** a + b  
  
  
**print**(sum\_two\_numbers(10,12.0))  
  
**print**(sum\_two\_numbers(**"asgds"**,**'hello'**))  
  
greet(**"wang"**)

Classes

**class** MyClass:  
 variable = **"blah"  
  
 def** function(self):  
 **print**(**"This is a message inside the class."**)  
  
myobjectx = MyClass()  
myobjecty = MyClass()  
  
myobjecty.variable = **"hahahaha"  
  
print**(myobjectx.variable)  
**print**(myobjecty.variable)  
  
*# define the Vehicle class***class** Vehicle:  
 name = **""** kind = **"car"** color = **""** value = 100.00  
 **def** description(self):  
 desc\_str = **"%s is a %s %s worth $%.2f."** % (self.name, self.color, self.kind, self.value)  
 **return** desc\_str  
*# your code goes here  
# your code goes here*car1 = Vehicle()  
car1.name = **"Fer"**car1.color = **"red"**car1.kind = **"convertible"**car1.value = 60000.00  
  
car2 = Vehicle()  
car2.name = **"Jump"**car2.color = **"blue"**car2.kind = **"van"**car2.value = 10000.00  
*# test code***print**(car1.description())  
**print**(car2.description())

Dictionaries

phonebook = {}  
phonebook[**"John"**] = 12443  
phonebook[2] = **'hello'**phonebook[3.2] = 3.2  
  
**print**(phonebook)  
**print**(phonebook[3.2])  
  
phonebook = {  
 **"John"** : 938477566,  
 **"Jack"** : 938377264,  
 **"Jill"** : 947662781  
}  
**print**(phonebook)  
  
*#Iterating over dictionaries***for** name,number **in** phonebook.items():  
 **print**(**"Phone number of %s is %d"**%(name,number))  
  
*#removing a value***del** phonebook[**"John"**]  
**print**(phonebook)  
  
phonebook[**"John"**] = 938477566  
**print**(phonebook)  
  
phonebook.pop(**"Jack"**)  
**print**(phonebook)  
  
**if "Jill" in** phonebook:  
 **print**(**"Jill is in phonebook."**)