Data Types

Variables in Python get their data type at assignment time

In [1]:
   x = 9
   print(x, type(x))

9 <class 'int'>

In [2]:
   x = 9.5
   print(x, type(x))

9.5 <class 'float'>

In [3]:
   x = 5 / 2
   print(x, type(x))

2.5 <class 'float'>

In [5]:
   x = 5 // 2
   print(x, type(x))

2 <class 'int'>

In [6]:
   name = "Ruby"
   print(name, type(name))

Ruby <class 'str'>

String (Text)

sequence of characters enclosed between quotes

In [7]:
   a = 'CS 101'
   print(a)

"CS 101"

In [8]:
   b = "CS 101"
   print(b)

"CS 101"

In [9]:
   c = '''line
   line2
   line3
   ...
   
   print(c)

line
line2
line3
...
Strings in Python are IMMUTABLE

meaning, Strings cannot be updated in-place

Slicing

[startIndex: endIndex : jump(step, stride)]

startIndex = included
str = "University of Iliinois"
print(str[0:10])
University
print(str[:10])
University
# of
print(str[11:13])
of

+ concatenation

print("Good " + "Morning")
Good Morning
print("Good" * 3)
GoodGoodGood
print(str.upper())
UNIVERSITY OF ILLINOIS
print(str.find('i'))
2
import math
print (math.sqrt(16))
print (math.sqrt(16))
4.0
NameError Traceback (most recent call last)
/var/folders/fp/jp33l5sd7m900qn4drqp700c0000gp/T/ipykernel_67873/3955137913.py in <module>
   2
   3 print (math.sqrt(16))
----> 4 print (sqrt(16))
NameError: name 'sqrt' is not defined

from math import sqrt
print (sqrt(16))
4.0

# a = 3, b = 4, c = 5
# a = 6
import math
# from math import sqrt

# read three values from the user using input function
a =
b =
c =

# compute s
s =

# compute a