Introduction to Python-Report 1

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Abstract

In this report, we will study some of the most important features of Python and how implement the mathematical and statistical activities using it. Furthermore, we will study basic operations in google colaboratory environment.

1 Introduction

Python is one of the most powerful and popular programming language today world. Python is the unique programming language that many web development company widely use it to develop applications, Artificial Intelligence to Big data science systems. Also, it is an easy-to-learn, simple to access, object-oriented programming languages launched in December 1989 by the Godfather of Python, Guido Van Rossum.

2 Basic Python Codes

2.1 Basic operations

In this section shows some basic python command in google Colab.

```
# print command use for print something
print ('Hello World')

# assignment
x = 5
y = 10
x = y
print ("x = ", x)
print ("y = ", y)


#print using input function
myName = input("Please enter your name: ")
```

```
myAge = input("What about your age: ")


# If condition
userInput = input('Enter 1 or 2: ')
if userInput == "1":
  print ("Hello World")
  print ('How are you?')
elif userInput == "2":
  print ("Python Rocks!")
  print ('I love Python')
else:
  print ("You did not enter a valid number")


  #for loop
pets = ['cats', 'dogs', 'rabbits', 'hamsters']
for myPets in pets:
  print (myPets)


  #while loop
counter = 5

while counter > 0:
  print('Counter = ', counter)
  counter = counter - 1
```

2.1.1 Command Lines

Simple arithmetic operations and mathematical activities.

```
# Simple arithmetic.
2 + 3 - 36 / 2 - 5


x = 3 # Assign a variable.
x**2 + 1 # Work with the variable.
type(x) # x is type (class) integer.
x1 = 4.2; x2 = 2.675; # Assign x1 and x2.


z1=2 + 3j; z2 = 3 - 1j # Assign z1 and z2. complex numbers
type(z1) # z1 is class complex.
z1**2 - 2 * z2 # Complex arithmetic.
```

```
z1.conjugate() # The complex conjugate.
```

2.1.2 Command Lines for list of integers

```
a=[1, 2, 3, 4, 5] # A list of integers.
a[0] # 1st element, 0 based indexing.
a[-1] # The last element.
len(a) # The number of elements.
max(a) # The largest element.
5 in a # True, 5 is in the list a.
2 * a # [1,2,3,4,5,1,2,3,4,5]
a.append(6) # Now a=[1,2,3,4,5,6].
```

2.1.3 Importing and dealing with basic libraries

```
import math # # Import all under name space math.
from math import sin # Import sine command only.
from math import * # Import all math commands.
sin(pi) # Sine function.
acos(0) # Inverse cosine.
exp(0.3) # Exponential function.
log10(0.3) # Log base 10.
floor(2.35) # Return floor as integer.
```

3 Conclusions

Understanding the syntax of Python is great and all, and Python by itself is indeed a great language. Installing and importing libraries more important when we coding executing specific functions and command lines.(except basic ones likes addition)

References

https://en.wikipedia.org/wiki/Python(*programminglanguage*).