

```

# This program prints Hello, world!
print('Hello, world!')

.....

str = "Python"
for i in str:
    print(i)

.....

list = [10,30,23,43,65,12]
sum = 0
for i in list:
    sum = sum+i
print("The sum is:",sum)

# This program adds two numbers
num1 = 1.5
num2 = 6.3
# Add two numbers
sum = num1 + num2
# Display the sum
print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))

```

User Input:

```

# Store input numbers

num1 = input('Enter first number: ')

num2 = input('Enter second number: ')

# Add two numbers

sum = float(num1) + float(num2)

# Display the sum

print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))

```

Data science

With Colab you can harness the full power of popular Python libraries to analyze and visualize data. The code cell below uses **numpy** to generate some random data, and uses **matplotlib** to visualize it. To edit the code, just click the cell and start editing.

```
import numpy as np
from matplotlib import pyplot as plt

ys = 200 + np.random.randn(100)
x = [x for x in range(len(ys))]

plt.plot(x, ys, '-')
plt.fill_between(x, ys, 195, where=(ys > 195), facecolor='g', alpha=0.6)

plt.title("Sample Visualization")
plt.show()
```

<https://colab.research.google.com/notebooks/io.ipynb>

def is the keyword for defining a function.

```
def simple_interest(p,t,r):
    print('The principal is', p)
    print('The time period is', t)
    print('The rate of interest is',r)

    si = (p * t * r)/100

    print('The Simple Interest is', si)
    return si

# Driver code
simple_interest(8, 6, 8)
```

```
# Function for nth Fibonacci number
```

```

def Fibonacci(n):
    if n<= 0:
        print("Incorrect input")
    # First Fibonacci number is 0
    elif n == 1:
        return 0
    # Second Fibonacci number is 1
    elif n == 2:
        return 1
    else:
        return Fibonacci(n-1)+Fibonacci(n-2)

```

```

# Driver Program

```

```

print(Fibonacci(10))

```

```

print("List Iteration")
l = ["Selim", "for", "DIU"]
for i in l:
    print(i)

```

```

# Iterating over a tuple (immutable)
print("\nTuple Iteration")
t = ("geeks", "for", "geeks")
for i in t:
    print(i)

```

```

# Iterating over a String
print("\nString Iteration")
s = "Geeks"
for i in s:
    print(i)

```

```

# Iterating over dictionary
print("\nDictionary Iteration")
d = dict()
d['xyz'] = 123
d['abc'] = 345
for i in d:
    print("% s % d" % (i, d[i]))

```

Python NumPy is a general-purpose array processing package which provides tools for handling the n-dimensional arrays. It provides various computing tools

such as comprehensive mathematical functions, linear algebra routines. NumPy provides both the flexibility of Python and the speed of well-optimized compiled C code. Its easy to use syntax makes it highly accessible and productive for programmers from any background.

```
def Enquiry(lis1):
    if len(lis1) == 0:
        return 0
    else:
        return 1

# Driver Code
lis1 = []
if Enquiry(lis1):
    print ("The list is not empty")
else:
    print("Empty List")
```

`numpy.random.random()` is one of the function for doing random sampling in numpy. It returns an array of specified shape and fills it with random floats in the half-open interval `[0.0, 1.0)`.

```
# Python program explaining
# numpy.random.random() function

# importing numpy
import numpy as geek
# output array
out_arr = geek.random.random(size = 3)
print ("Output 1D Array filled with random floats : ", out_arr)
```