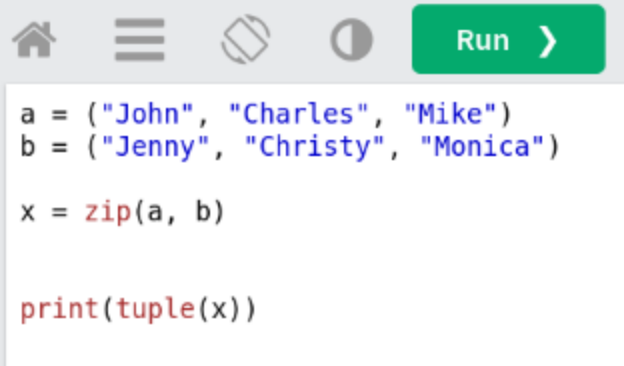
PYTHON FUNCTIONs

Some python functions used in hill_cipher algorithm:

zip function:

The `zip()` function returns a zip object,
which is an iterator of tuples where the first item in each passed iterator is paired together, and then the second item in each passed iterator are paired together etc.




```
(('John', 'Jenny'), ('Charles', 'Christy'), ('Mike', 'Monica'))
```

range function:

Create a sequence of numbers from 0 to 5, and print each item in the sequence:

```
x = range(6)

for n in x:
  print(n)
```

```
0
1
2
3
4
5
```

np.linalg.det:

calculate the det of an array

np.round:

matrix = np.array([2.55 , 3.257 , 4.5])

=======

[3. 3. 4.]

egcd:

When it is supplied two integer arguments a and b, it returns a tuple of the form (g, s, t) where the three integers in the tuple satisfy the identity (a * s) + (b * t) == g

det_inv = egcd(9,26)[1] = 3

Dict:

Dictionaries are used to store data values in key:value pairs.

A dictionary is a collection which is ordered*, changeable and do not allow duplicates.

```
thisdict =	{
"brand": "Ford",
"model": "Mustang",
"year": 1964
}
print(thisdict["brand"])
```

==========

Ford

shape:

NumPy arrays have an attribute called `shape` that returns a tuple with each index having the number of corresponding elements.

```
import numpy as np
arr = np.array([[1, 2, 3, 4],
  [5, 6, 7, 8]])
print(arr.shape)
```

==========

(2, 4)

shape[0]:number of rows.

split:

```
import numpy as np
```

arr = np.array([1, 2, 3, 4, 5, 6])
z = [arr[i:i+2] for i in range(0,6,1)]

print(z)

==========

```
[array([1, 2]), array([2, 3]), array([3, 4]), array([4, 5]),
array([5, 6]), array([6])]
```

asarray:

`numpy.asarray()` function is used when we
want to convert input to an array. Input can be lists, lists of tuples,
tuples, tuples of tuples, tuples of lists and arrays.

newaxis

```
>>> x[:, np.newaxis]
array([[0],
       [1],
       [2],
       [3]])
```