```
In [1]: print("Hello world!")

        Hello world!
```

```
In [2]: 365*24*60*60
```

```
Out[2]: 31536000
```

```
In [3]: 7564*754*20
```

```
Out[3]: 114065120
```

```
In [11]: %matplotlib inline
         from matplotlib.pyplot import plot
         plot([0,1,0,1])
```

```
Out[11]: [<matplotlib.lines.Line2D at 0x112b29240>]
```


# #
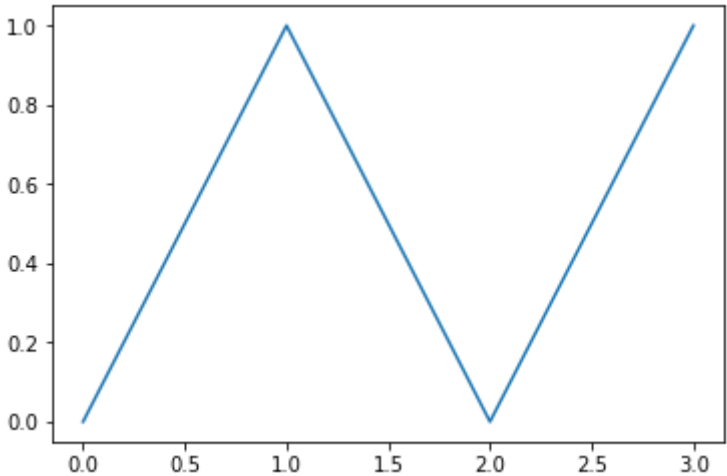
This is matplotlib plot of vector 0 & 1

```
In [20]: filename = '/downloads/hour.csv'
         !echo $filename
         print(filename)

         /downloads/hour.csv
         /downloads/hour.csv
```

HEAD

```
In [21]: !head -n 3 $filename

         head: /downloads/hour.csv: No such file or directory
```

```
In [23]: filename = '/desktop/data.csv'
         !echo $filename
         print(filename)

         /desktop/data.csv
         /desktop/data.csv
```

```
In [24]: !head -n 3 $filename

         head: /desktop/data.csv: No such file or directory
```

```
In [26]: !head -n 3 /desktop/data.csv

         head: /desktop/data.csv: No such file or directory
```

```
In [1]: import numpy as np
```

```
In [2]: an_array = np.array([[11,12,13,14],[21,22,23,24],[31,32,33,34]])
```

```
In [3]: print(an_array)
```

```
[[11 12 13 14]
 [21 22 23 24]
 [31 32 33 34]]
```

```
In [4]: an_array = np.array([[11,12],[21,22],[31,32]])
```

```
In [5]: print(an_array)
```

```
[[11 12]
 [21 22]
 [31 32]]
```

```
In [7]: filter = (an_array > 11)
```

```
In [8]: print(an_array)
```

```
[[11 12]
 [21 22]
 [31 32]]
```

```
In [9]: print(filter)
```

```
[[False  True]
 [ True  True]
 [ True  True]]
```

```
In [10]: filter = (an_array > 18)
         print(filter)
```

```
[[False False]
 [ True  True]
 [ True  True]]
```

```
In [12]: an_array[an_array %2 == 0] +=200
```

```
In [13]: print(an_array)
```

```
[[ 11 212]
 [ 21 222]
 [ 31 232]]
```

```
In [14]: arr = 10 * np.random.randn(2,5)
         print(arr)
```

```
[[ 10.91772428  -5.42616429  10.31671992  17.19085281  10.93910406]
 [ -1.90846349 -14.05390669  -5.80059993  -3.00827516 -11.89069323]]
```

```
In [15]: print(arr.mean())
```

```
0.727629827308
```

```
In [16]: print(arr.mean(axis = 1))
```

```
[ 8.78764735 -7.3323877 ]
```

```
In [17]: print(arr.mean(axis = 0))
```

```
[ 4.5046304  -9.74003549  2.25805999  7.09128882 -0.47579459]
```

```
In [18]: print(arr.sum())
```

```
7.27629827308
```

```
In [20]: unsorted = np.random.randn(10)
```

```
In [21]: print(unsorted)
```

```
[-1.13832754 -0.07953991 -0.68671434  1.15626837  0.04533871 -0.2334290
5
 -0.68330092 -1.01892427  0.88034013 -0.09148075]
```

```
In [22]: sorted = np.array(unsorted)
         sorted.sort()
```

```
In [23]: print(sorted)
```

```
[-1.13832754 -1.01892427 -0.68671434 -0.68330092 -0.23342905 -0.0914807
5
 -0.07953991  0.04533871  0.88034013  1.15626837]
```

```
In [24]: array = np.array([1,2,1,4,2,1,4,2])
```

```
In [25]: print(np.unique(array))
```

```
[1 2 4]
```

```
In [26]: import numpy as np
         start = np.zeros((4,3))
```

```
In [27]: print(start)
```

```
[[ 0.  0.  0.]
 [ 0.  0.  0.]
 [ 0.  0.  0.]
 [ 0.  0.  0.]]
```

```
In [28]: add_rows = np.array([1,0,2])
```

```
In [29]: print(add_rows)
```

```
[1 0 2]
```

```
In [30]: y = start + add_rows
         print(y)
```

```
[[ 1.  0.  2.]
 [ 1.  0.  2.]
 [ 1.  0.  2.]
 [ 1.  0.  2.]]
```