Quest3-PartB

September 9, 2018

In [1]:
```
from collections import Counter
from functools import reduce
import matplotlib.pyplot as plt
import numpy as np
import random
```

In [2]:
```
# Utility function
def runtime(f):
    import timeit
    start = timeit.default_timer()
    f
    end = timeit.default_timer()
    return(end - start)

# My Function
def wordsInStringToDictWordCount(istr):

    return_dict = {}

    if len(istr) > 1:
        temp_list = istr.split()

        for i in temp_list:
            if i in return_dict:
                return_dict[i] += 1
            else:
                return_dict[i] = 1

    return return_dict

# Counter class
def beatTheCounter(istr):
    cnt = Counter()
    temp_list = istr.split()

    for i in temp_list:
        cnt[i] += 1
```

```
            return cnt
```

```
In [3]: with open('./lstring.txt', 'r') as fstr:
            longstring = fstr.read().replace('\n', ' ')

        mytime = runtime(wordsInStringToDictWordCount(longstring))
        cnttime = runtime(beatTheCounter(longstring))
        print (mytime)
        print (cnttime)
```

```
5.19001332577318e-07
6.000009307172149e-07
```

0.1 Run it 100 times to test average performance

```
In [4]: mytimelist = []
        cnttimelist = []

        for i in range (0,100):
            mytimelist.append(runtime(wordsInStringToDictWordCount(longstring)))
            cnttimelist.append(runtime(beatTheCounter(longstring)))
```

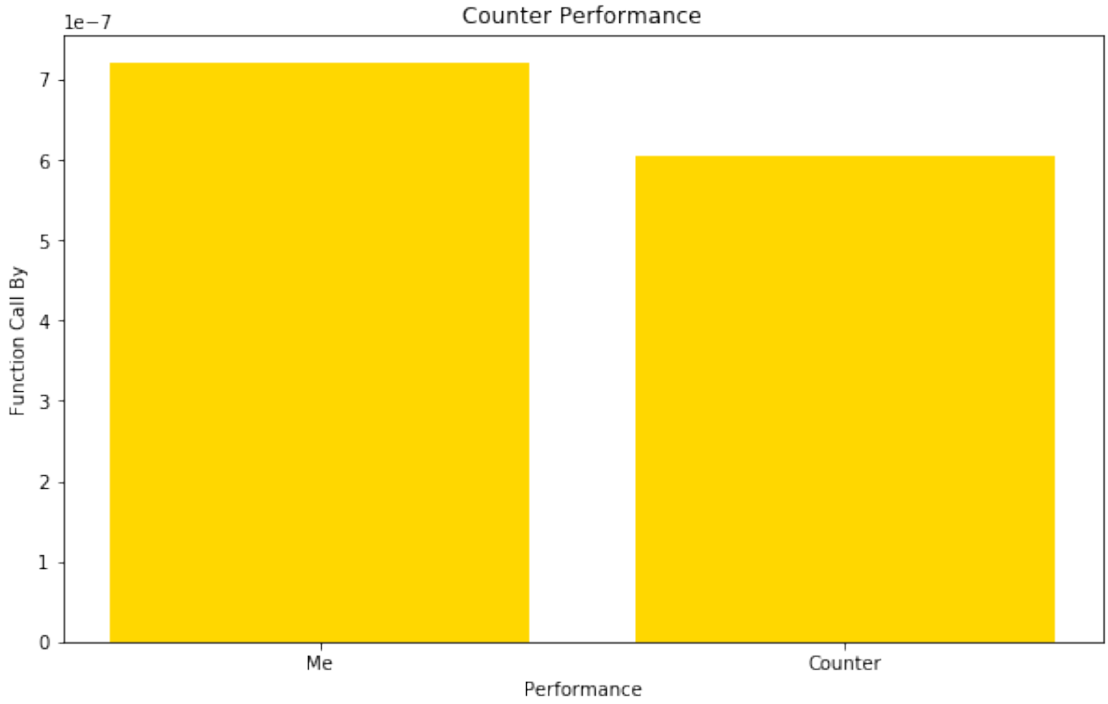
```
In [5]: avg_mytime = reduce(lambda x, y: (x + y) / 2, mytimelist)
        avg_cnttime = reduce(lambda x, y: (x + y) / 2, cnttimelist)

        print (avg_mytime)
        print (avg_cnttime)
```

```
7.202298436710802e-07
6.049391728393373e-07
```

```
In [6]: %matplotlib inline

        # The yval position is reversed, but according to the numbers computed, cnt took short
        yval = [avg_cnttime, avg_mytime]
        x = ["Me", "Counter"]
        plt.figure(figsize=(10,6))
        plt.bar(x, yval, color='gold')
        plt.xticks(x)
        plt.xlabel("Performance")
        plt.ylabel("Function Call By")
        plt.title("Counter Performance")
        plt.show()
```


Counter Performance
1e−7
7
6
5
4
3
2
1
0
Function Call By
Me
Counter
Performance