task1,2

June 20, 2020

0.1 Task 1

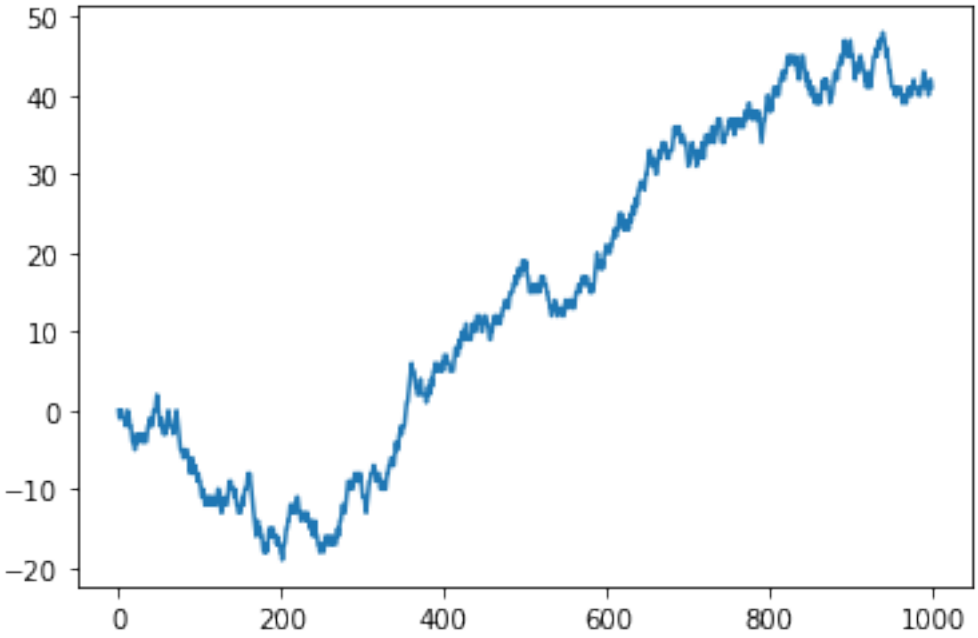
[2]:
```
import random
import numpy as np
import matplotlib.pyplot as plt
import math
```

[3]:
```
def task1(time, start):
    dist = start
    dist_arr = []
    time_arr = [i for i in range(time)]

    for i in range(time):
        dist += np.random.choice([-1,0,1])
        dist_arr.append(dist)

    return (dist_arr, time_arr)
```

[4]:
```
dist_arr, time_arr = task1(1000, 0)
plt.plot( time_arr, dist_arr)
plt.show()
```

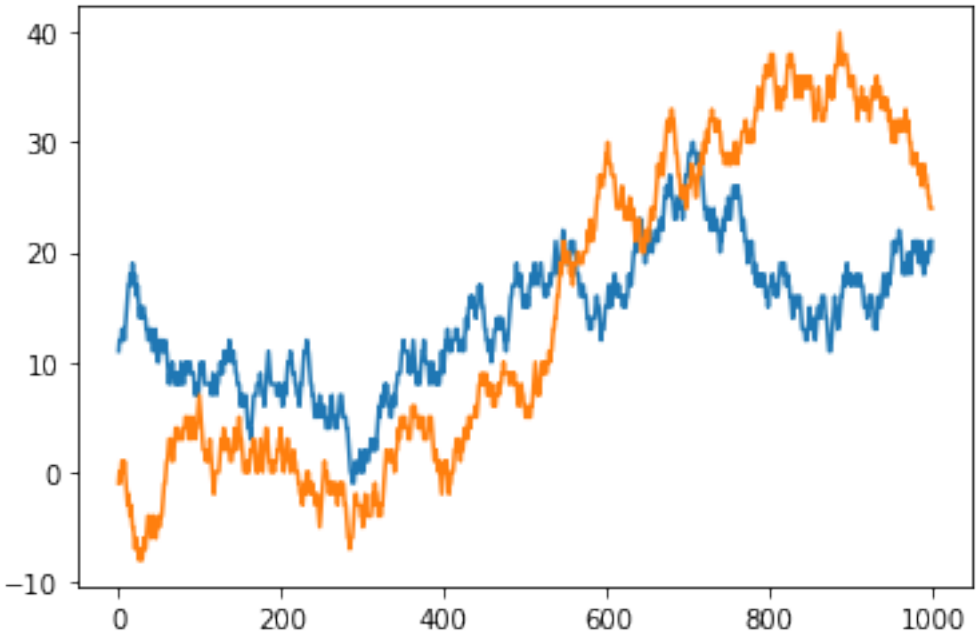


def tas1exp(step): dist_arr = [] time_arr = [] for i in range(1000): dist, time = task1(1000, 0) dist_arr.append(dist) time_arr.append(time)

```
avg_dist_step  = [ for i in range(1000)]
```

0.2 Task 2

[8]:
```
dist_arr, time_arr = task1(1000, 0)
dist_arr1, time_arr1 = task1(1000, 10)
plt.plot( time_arr1, dist_arr1)
plt.plot( time_arr, dist_arr)
plt.show()
```


40
30
20
10
0
−10
0
200
400
600
800
1000

[ ]: