

Assignment 1

Random Walk

Luo Chen

001564677

Conclusion

Let d present the distance and n present the steps. The relation between d and n should be like :

$$d^2 = k * n + b$$

or

$$d = \sqrt{k * n + b}$$

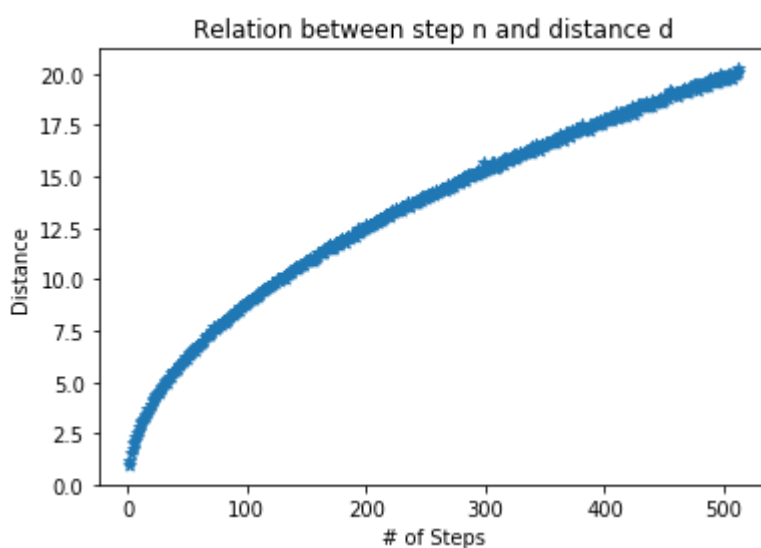
where k is slop and b is bias.

To be specific, the calculated result in my experience is:

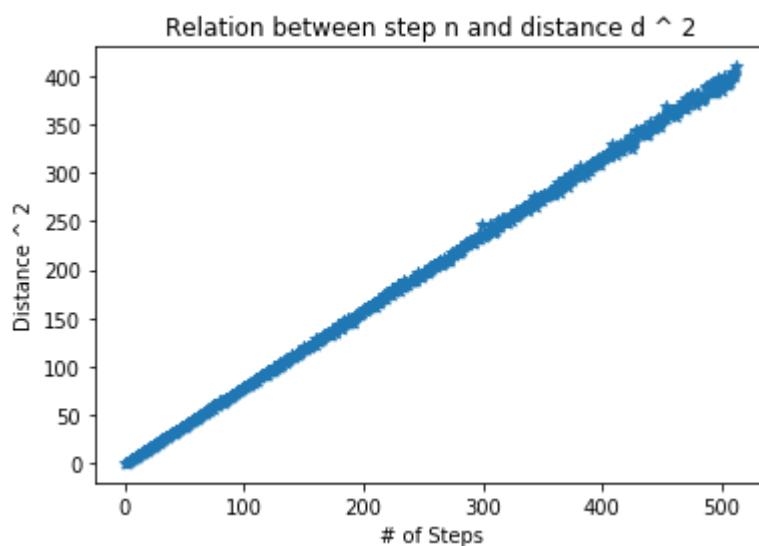
$$d^2 = 0.7868118246468458 * n - 0.06496410245863907$$

Evidence

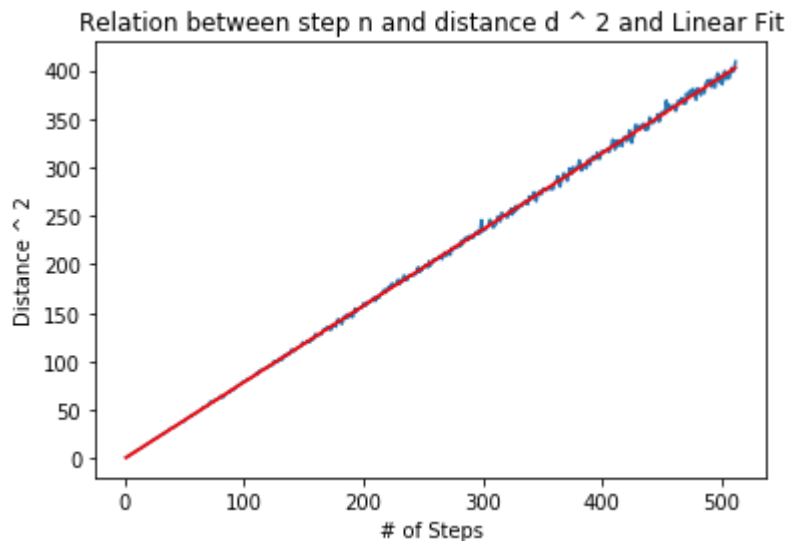
The relation between d and n



The relation between d^2 and n



The linear fit result



Code

[RandomWalk.java](#) for the java code, which will also generate the output data file.

[data.csv](#) for the result of my experience.

[draw_plot.py](#) for the python code to draw the plots and do linear fit. Python 3.6.8 in my case and requirements.txt for dependency.

Unit Test

