## Conclusion about the relationship between *d, n* and *l*

Based on the experiment and logical conduction, the theoretical relationship between them is

However, the experiments show that the *d* is a little smaller than .

## Evidence to support the relationship

|  |  |  |
| --- | --- | --- |
| Experiment Times | *Steps (n)* | *Distance (d)* |
| 30 | 10 | 2.700355650674462 |
| 30 | 100 | 9.542557452430563 |
| 30 | 1000 | 24.192511287786214 |
| 30 | 10000 | 91.31568040760989 |
| 1000 | 10000 | 90.82347778504865 |
| 10000 | 10000 | 87.38722399314534 |
| 30 | 40000 | 167.7519213865373 |
| 30 | 160000 | 335.6903793084376 |

Table Results between d and n

We did experiments with different steps *(n)* , assuming the length of every step*(l)* is 1. Every *n* we did 30 times experiments. The results show that the distance*(d)* is close to the conclusion we made above.

However, as you can see from Table 1, the Distance*(d)* is slightly smaller than , even when we are changing the steps and experiment times.

## Code(in the attached files)

## Evidence of the unit test all passing

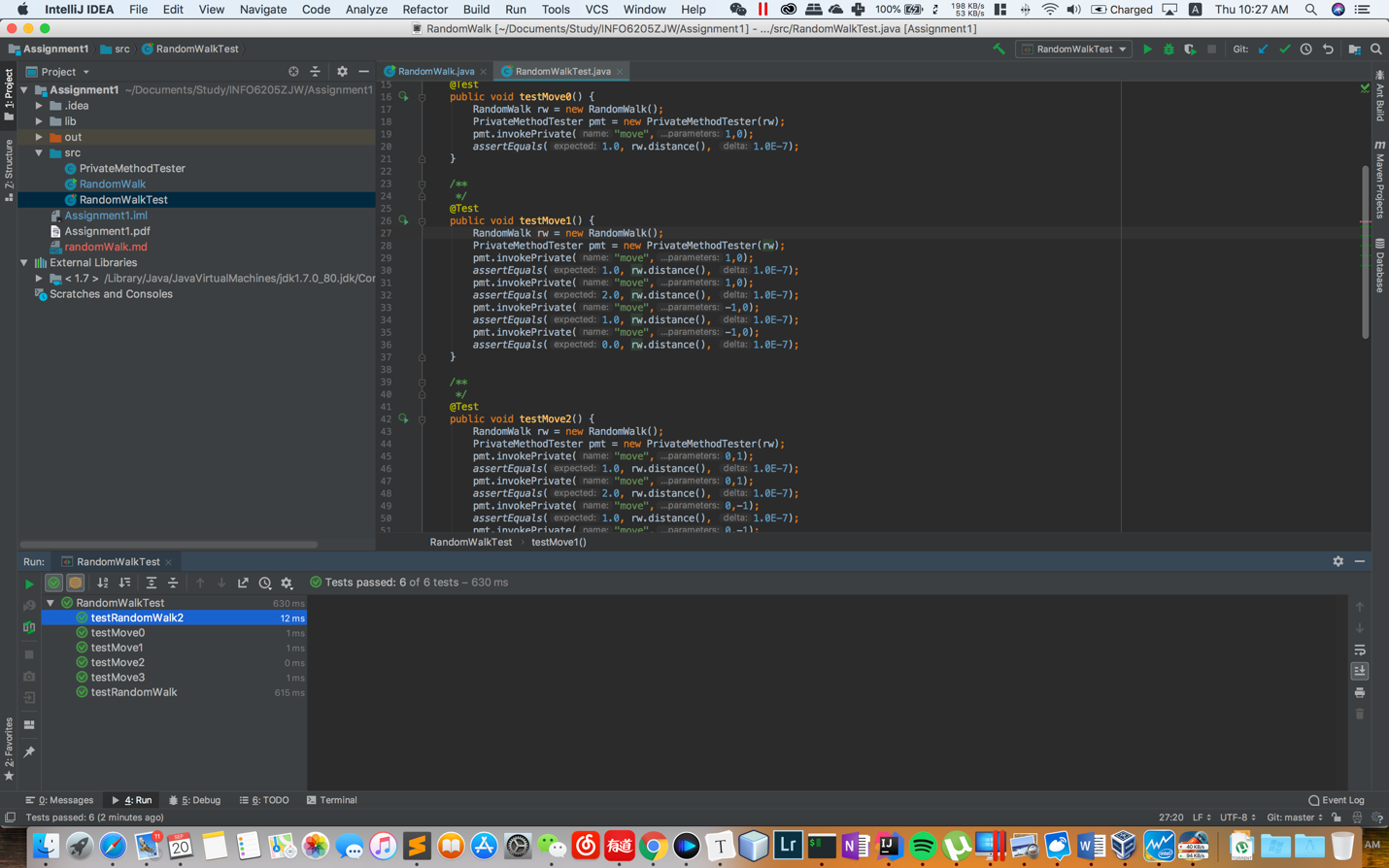


Figure All unit tests pass