INFO 6205 Section 5

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1. Conclusion:

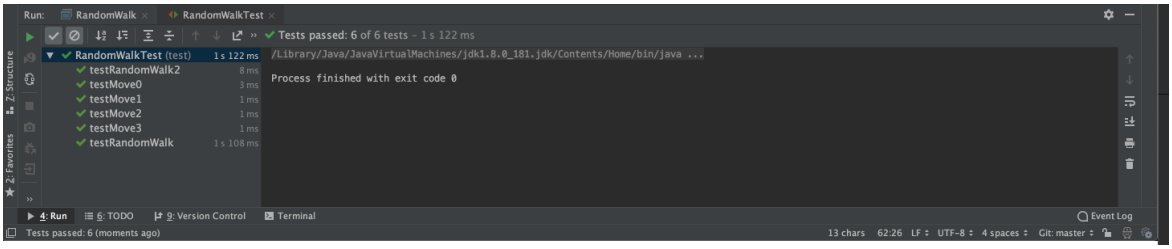
Base on the experiment I did, my conclusion of the relationship between d (distance) , n (steps) and l (step length) is $d \approx l * \sqrt{n}$. More precisely, the d is a little bit smaller than $l * \sqrt{n}$.

2. Evidence:

Experiment Times	Steps(n)	Distance(d)	step length (l)
30	10	2.80525578383362	1
30	1000	30.0880768426233	1
30	10000	92.1308364861003	1
30	40000	175.960007404139	1
100	10000	88.3065790758685	1
200	40000	181.678306566981	1
500	10000	88.9920103679341	1
10000	40000	177.454202116755	1

Assuming the step length of drunken man is 1, These experiments show that d (distance) is slightly smaller than $l * \sqrt{n}$. no matter how you change the steps and experiment times.

3. Unit test result:



4. Code:

Please see the attached files.