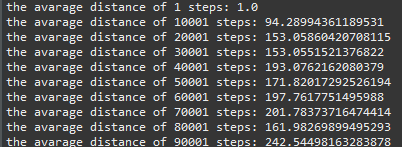
**Your submission should include:**

1. **Your conclusion about the relationship between d, n and l;**
2. **Your evidence to support that relationship;**

2.1 screen shot of value of 50 run times (each averaged distance is calculated by 5 different values):



2.2 the graph of data in 2.1 (The blue line is average distance and the red line is my expected conclusion () ):

2.3 the graph of 300 more data (Not averaged, and the blue line is average distance and the red line is my expected conclusion () ):

1. **Your code (RandomWalk.java plus anything else that you changed or created);**

And you can also see RandomWalk.java is in my zip folder.

Code:

**package** edu.neu.coe.info6205.randomwalk;

**import** java.util.Random;

**public** **class** **RandomWalk** {

**private** **int** x = 0;

**private** **int** y = 0;

**private** **final** **Random** random = **new** Random();

**public** **void** **move**(**int** dx, **int** dy) {

x += dx;

y += dy;

// **TODO** you need to implement this

}

**private** **void** **randomWalk**(**int** n) {

**for** (**int** **i** = 0; i < n; i++)

randomMove();

}

**private** **void** **randomMove**() {

**boolean** **randomX** = random.nextBoolean();

**boolean** **randomY** = random.nextBoolean();

**if**(randomX) move(0,(randomY ? 1 : -1));

**else** move((randomY ? 1: -1), 0);

// **TODO** you need to implement this

}

**public** **double** **distance**() {

**return** **Math**.*sqrt*(x\*x + y\*y);

// **TODO** you need to implement this

}

**public** **static** **void** **main**(**String**[] args) {

**final** **int** **valueNum** = 10;

**final** **int** **repeat** = 5;

**int** **value** = 1;

**double** **sum** = 0;

**RandomWalk** **walk** = **new** RandomWalk();

**for**(**int** **j** = 0; j < valueNum; j++) {

sum = 0;

**for**(**int** **i** = 0; i < repeat; i ++) {

walk.x = walk.y = 0;

walk.randomWalk(value);

sum += walk.distance();

}

**System**.***out***.println("the avarage distance of "+ value + " steps: " + sum/repeat);

value += 10000;

}

}

}

1. **Evidence (screen shot) of the unit tests all passing.**

