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INFO 6205

Program Structures & Algorithms

Fall 2020

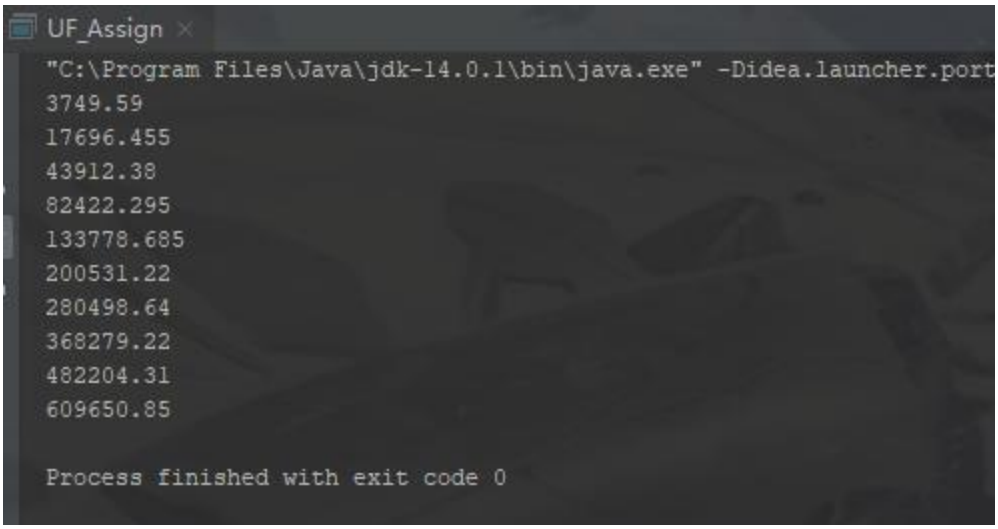
Assignment No 3

- **Task**
- **Output** (few outputs to prove relationship)

Make the n to be i * i * 100 and i * i * 1000:

```
//int n = i * i * 100;
int n = i * i * 1000;
```

And we got the outputs:



And then I put these values into the Excel:

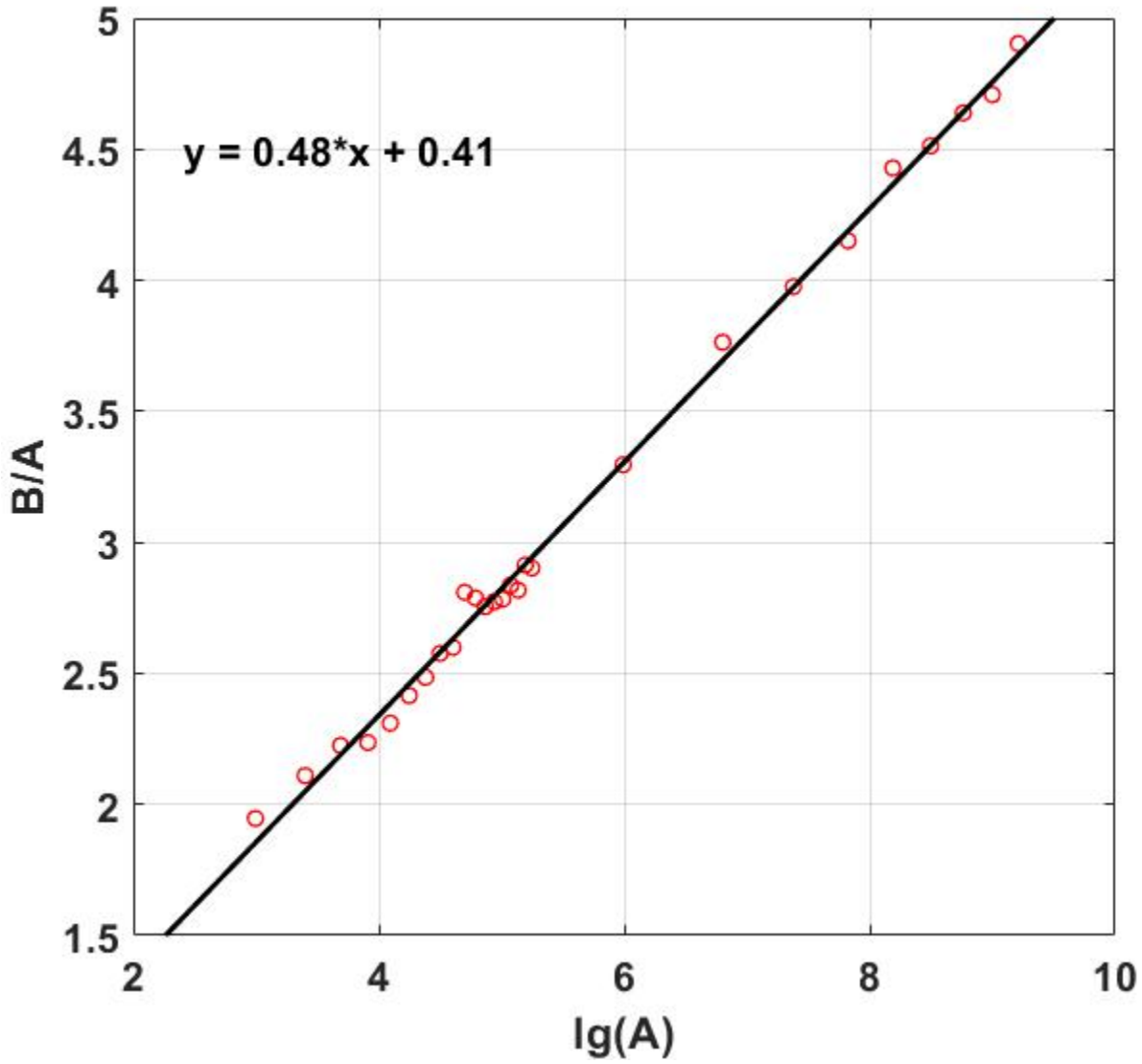
A	B
100	257.925
400	1318.48
900	3387.36
1600	6360.785
2500	10376.86
3600	15942.44
4900	22112.14
6400	29687.92
8100	38139.91
10000	49032.21
1000	3749.59
4000	17696.46
9000	43912.38
16000	82422.3
25000	133778.7
36000	200531.2
49000	280498.6
64000	368279.2
81000	482204.3
100000	609650.9

- **Relationship conclusion**

I think the relationship is: $m \approx 0.5 * n * (\log(n) + 1)$

- **Evidence to support relationship** (screen shot and/or graph and/or spreadsheet)

  We make the y = m / n, and x = log(n), then we get:



So the conclusion should be correct.

- **Screenshot of Unit test passing**

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