**Assignment 2 Union-Find Analysis Report JinZhang**

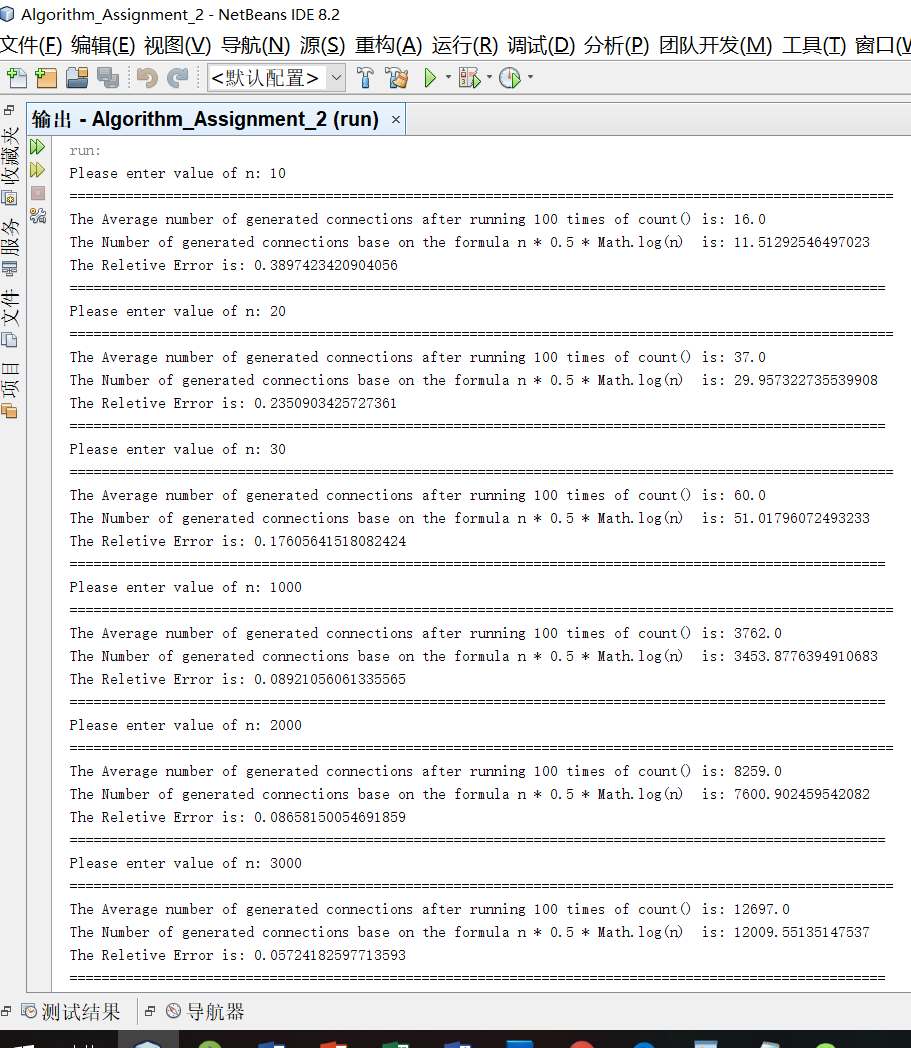
I have Developed a ("union-find") Client Side implementation. Also tested 10 sets of outcomes to compare.

The screenshot **(Pic-1) & (Pic-2)** includes:

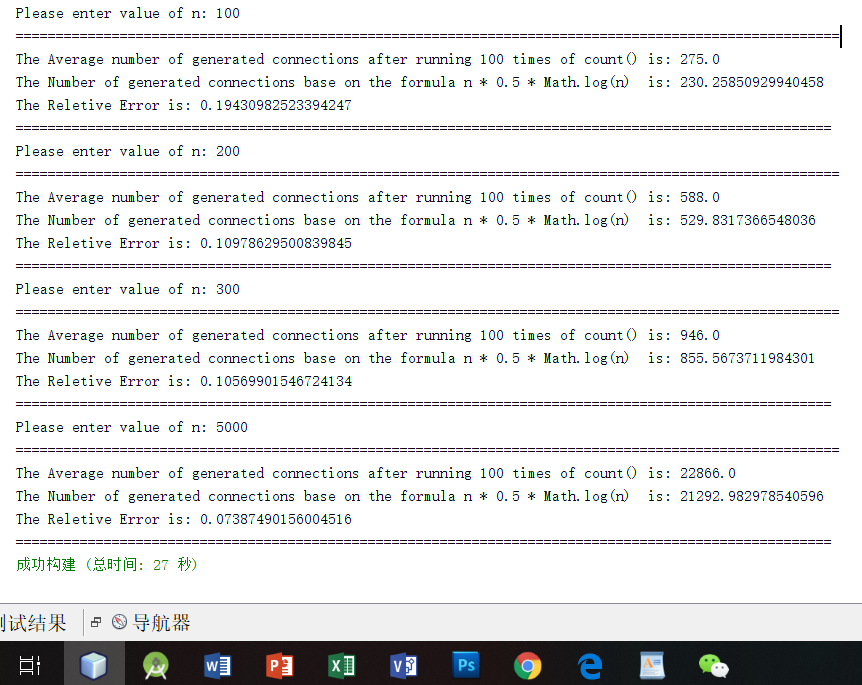
*The Average number of generated connections after running 100 times of count()*

*The Number of generated connections base on the formula n \* 0.5 \* Math.log(n)*

*The Relative Error between Them*



Pic-1



Pic-2

As we can see, the relative error of two outcomes is not too big. We can infer that the number of pairs approximately equals: **0.5 \* n \* ln(n).**